Draft Traffic Impact Analysis Report

Reedley College
Performing Arts Center

Located on the Northwest Corner of
Reed Avenue and College Driveway

In the City of Reedley, California

Prepared for:
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August 11, 2020

Project No. 014-006

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For the Reedley College Performing Arts Center located on the Northwest Corner of Reed Avenue and College Driveway

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This Draft Traffic Impact Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions, and decisions are based.

Prepared by:

_____

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Introduction and Summary

Introduction

This Report describes a Draft Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for the proposed Reedley College Performing Arts Center (Project) located on the northwest corner of Reed Avenue and College Driveway in the City of Reedley. The State Center Community College District (District) proposes to develop the Project on approximately 4.0 acres, of which approximately 3.2 acres are currently occupied by an orchard. The Project site contains a small vacant area (0.8 acres) near College Driveway that contains several large mature trees.

The Project will include: an auditorium with a capacity between 500 and 550 seats; a 1,000 square-foot art gallery; an indoor lobby area configurable to accommodate up to 150 people as a sit-down dinner venue; a concessions area; a green room; a box office; a conference room; restrooms, and miscellaneous areas for storage and equipment. The Project will also include an outdoor plaza that would function as a congregational area and may be used as an area for outdoor events and performances. The outdoor area will include landscaping, lighting, and possible public art. The Project is planned to begin construction in early 2021 and be operational by late 2022. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of this Draft TIA Report is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures, and identify any critical traffic issues that should be addressed in the on-going planning process. The analysis primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. The Scope of Work was prepared via consultation with City of Reedley, County of Fresno, and Caltrans staff.

Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Reedley, County of Fresno, and Caltrans and the Fresno Council of Governments Draft SB 734 Implementation Regional Guidelines (July 2020).

Existing Traffic Conditions

- At present, the intersection of Reed Avenue and Manning Avenue exceeds its LOS threshold during the weekday PM peak period. To improve the LOS at this intersection, it is recommended that a second eastbound left-turn lane with a receiving lane north of Manning Avenue be considered for implementation. Additional details as to the recommended improvements for this intersection are presented later in this Report.

Existing plus Project Traffic Conditions

- Considering forecasted increases in traffic volumes along Reed Avenue and the need for future improvements at Reed Avenue and the College Driveway, it is recommended that the College Driveway connection to Reed Avenue be shifted approximately 50 to 100 feet north of its current location. The relocation of this intersection will provide separation from Kip Patrick Drive and minimize traffic operational impacts to the existing roadway network.
- At buildout, the proposed Project is estimated to generate a maximum of 611 weekday daily trips, 182 weekday PM peak hour trips, and 182 weekend PM peak hour trips.
- It is recommended that the Project implement walkways that are ADA compliant along its frontages to Reed Avenue and College Driveway.
- It is recommended that the Project implement a Class II Bike Lane along its frontage to Reed Avenue.
- Based on the Fresno COG model run, the Project is anticipated to generate an average trip length of 5.99 miles and thus a total VMT of 3,660 (5.99 miles per trip x 611 daily trips = 3,660 total VMT).
- Under this scenario, the intersections of Reed Avenue and College Driveway and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, the addition of lanes is recommended. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Near Term No Project Traffic Conditions

- The total trip generation for the Near Term Projects is 21,216 weekday daily trips, 2,131 weekday PM peak hour trips and 1,447 weekend PM peak hour trips.
- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, the addition of lanes and modification of traffic control mechanisms are recommended. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Near Term plus Project Traffic Conditions

- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, the addition of lanes and modification of traffic control mechanisms are recommended. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Cumulative Year 2040 No Project Traffic Conditions

- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during one or both PM peak periods. To improve the LOS at these intersections, the addition of lanes and modification of traffic control mechanisms are recommended. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during one or both PM peak periods. To improve the LOS at these intersections, the addition of lanes and modification of traffic control mechanisms are recommended. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Project's Equitable Fair Share

- It is recommended that the Project contribute its equitable fair share as listed in Table X for the future improvements necessary to maintain an acceptable LOS.

Scope of Work

The TIA primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. On January 6, 2020, a Draft Scope of Work for the preparation of a TIA for this Project was provided to the City of Reedley, County of Fresno and Caltrans for their review and comment. Any comments to the Draft Scope of Work were to be provided by January 27, 2019.

On January 23, 2020, the City of Reedley responded to the Draft Scope of Work. The City of Reedley requested that the TIA include a) a vehicle miles traveled analysis, b) a qualitative analysis of Reedley Parkway, c) analysis of the AM (7-9) peak period during a weekday and weekend, and d) analysis of the intersections of Reed Avenue and Manning Avenue and Manning Avenue and "I" Street.

On January 24, 2020, Caltrans responded and approved the Draft Scope of Work as presented.

On January 27, 2020, the County of Fresno requested that the TIA include Project's trip distribution percentages, addition of an Existing plus Project Traffic Conditions scenario, and a Project description that incorporates information from the Project's Operational Statement. On January 30, 2020, JLB provided the County with Fresno COG Project Select Zone model plots for review. On February 5, 2020, the County withdrew their request for an Existing plus Project Traffic Conditions scenario and indicated no further comments.

Based on the comments received, this TIA includes an analysis of vehicle miles traveled, a qualitative analysis of Reedley Parkway, and analysis of the additional intersections as requested by the City of Reedley. This TIA does not include analysis of the AM peak period during a weekday or weekend since the Project is only anticipated to host events that would commence after the typical AM peak period. Lastly, this TIA includes an Existing plus Project Traffic Conditions scenario and a Project description that incorporates information from the Project's Operational Statement as requested by the County of Fresno. The Draft Scope of Work and the comments received from the responsible agencies are included in Appendix A.

Study Facilities

The existing peak hour turning movement volume counts were conducted at the study intersections between January through March 2020, while schools in the vicinity of the proposed Project were in session (before Governor Gavin Newsom's Executive Order to shelter-in-place). The intersection turning movement counts included pedestrian volumes. The traffic counts for the existing study intersections are contained in Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

Study Intersections

1. Reed Avenue / South Avenue
2. Reed Avenue / Parlier Avenue
3. Reed Avenue / College Driveway
4. Reed Avenue / Manning Avenue
5. Manning Avenue / "I" Street

Study Scenarios

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted between May 2019 and March 2020.

Existing plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Traffic Conditions scenario. The Project Only Trips to the study intersections were based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgment, data provided by the District, knowledge of the study area, existing residential and commercial densities, and the City of Reedley 2030 General Plan Circulation Element in the vicinity of the Project. The Fresno COG Models for the Project Select Zone are contained in Appendix C.

Near Term No Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term No Project Traffic Conditions. The Near Term No Project traffic volumes were obtained by adding the Near Term Project Trips to the Existing Traffic Conditions scenario.

Near Term plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Project Only trips to the Near Term No Project Traffic Conditions scenario.

Cumulative Year 2040 No Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2040 No Project Traffic Conditions. The Cumulative Year 2040 No Project traffic volumes were obtained by subtracting the Project Only Trips from the Cumulative Year 2040 plus Project Traffic Conditions scenario. This scenario assumes Parlier Avenue will extend west of Reed Avenue for approximately 300 feet at which point it will connect to a north-south roadway within the campus resulting in changes in travel patterns and volumes along Reed Avenue between Parlier Avenue and the College Driveway.

Cumulative Year 2040 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2040 plus Project Traffic Conditions. As the Fresno COG regional model for 2040 still needs some work, JLB utilized the Base Year 2020 and the Cumulative Year 2035 Fresno COG modeling to determine the increment in traffic volumes. Furthermore, JLB utilized the Base Year 2020 and Cumulative Year 2035 volumes along Reed Avenue, Parlier Avenue and Manning Avenue near the proposed Project site to determine an average annual growth rate of 2.79 percent. This growth rate was used to expand the increment volumes by five (5) years to arrive at the Cumulative Year 2040 plus Project traffic volumes. The 2040 Project Only Trips to the study intersections were based on the potential changes to the roadway network, the Fresno COG Project Select Zone, existing residential and commercial densities, the 2019-2030 Districtwide Facilities Master Plan Update, engineering judgement, knowledge of the study area and the City of Reedley 2030 General Plan Circulation Element in the vicinity of the Project. The Fresno COG traffic model runs are contained in Appendix C.

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

Criteria of Significance

The City of Reedley 2030 General Plan has established LOS C as the acceptable level of traffic congestion on most major streets. Therefore, LOS C is used to evaluate the potential significance of LOS impacts to City of Reedley roadway facilities pursuant to the City of Reedley 2030 General Plan.

The County of Fresno has established LOS C as the acceptable level of traffic congestion on county roads and streets that fall entirely outside the Sphere of Influence (SOI) of a City. For those areas that fall within the SOI of a City, the LOS criteria of the City are the criteria of significance used in this Report. In this case, all study facilities fall within the City of Reedley SOI, therefore, the City of Reedley LOS is utilized.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities consistent with the Caltrans Guide for the Preparation of Traffic Impact Studies dated December 2002. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In this TIA, however, all study facilities fall within the City of Reedley SOI. Therefore, the City of Reedley LOS threshold is utilized.

Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added
- All new or modified signals utilize protective left-turn phasing
- A 3 percent heavy vehicle factor
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- An average of 3 pedestrian calls per hour at Reed Avenue and South Avenue and Manning Avenue and "I" Street
- An average of 10 pedestrian calls per hour at Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway and Reed Avenue and Manning Avenue
- At existing intersections, the observed Peak Hour Factor (PHF) is utilized in the Existing, Near Term No Project and Near Term plus Project scenarios
- A PHF of 0.92, or the existing PHF, if higher, is utilized in Cumulative Year 2040 scenarios

Existing Traffic Conditions

Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

Reed Avenue is an existing north-south two-lane arterial adjacent to the proposed Project site. In this area, Reed Avenue is a two-lane undivided major arterial between South Avenue and Kip Patrick Drive, a two-lane major arterial divided by a two-way left-turn lane between Kip Patrick Drive and Manning Avenue, a two- to three-lane arterial between Manning Avenue and "I" Street, a two-lane undivided collector between "I" Street and 11th Street, a two-lane undivided arterial between 11th Street and Olson Avenue, and a four-lane undivided arterial between Olson Avenue and the Lilac Avenue alignment. The City of Reedley 2030 General Plan Circulation Element designates Reed Avenue as a four-lane major arterial from a point south of Adams Avenue to Manning Avenue, an arterial between Manning Avenue and "I" Street, a four-lane collector between "I" Street and 11th Street, and a four-lane arterial between 11th Street and Floral Avenue through the City of Reedley SOI.

South Avenue is an existing east-west two-lane undivided roadway in the vicinity of the proposed Project site. In this area, South Avenue is a two-lane undivided major arterial between Reed Avenue and Columbia Avenue. The City of Reedley 2030 General Plan Circulation Element designates South Avenue as a four-lane major arterial between Reed Avenue and Buttonwillow Avenue and a four-lane arterial between Buttonwillow Avenue and Englehart Avenue through the City of Reedley SOI.

Parlier Avenue is an existing east-west two-lane undivided collector in the vicinity of the proposed Project site. In this area, Parlier Avenue is a two-lane undivided collector between Reed Avenue and Frankwood Avenue, a two-lane collector divided by a two-way left-turn lane between Frankwood Avenue and Thompson Avenue, and a two-lane undivided collector between Thompson Avenue and Buttonwillow Avenue. The City of Reedley 2030 General Plan Circulation Element designates Parlier Avenue as two-lane collector east of Reed Avenue through the City of Reedley SOI. The Reedley College Long Range Master Plan presented in the 2030 Districtwide Facilities Master Plan Update indicates that Parlier Avenue will extend west of Reed Avenue for approximately 300 feet at which point it will connect to a north-south roadway within the campus.

College Driveway is an existing east-west two-lane undivided roadway within the Reedley Community College Campus and is adjacent to the proposed Project site. College Driveway is the northerly campus access road from Reed Avenue and provides access to buildings and parking lots within the Reedley Community College Campus.

Manning Avenue is an existing east-west four-lane divided arterial in the vicinity of the proposed Project site. In this area, Manning Avenue is a four-lane divided major arterial between Lac Jac Avenue and Reed Avenue, a predominantly two-lane major arterial divided by a two-way left-turn lane between Reed Avenue and Buttonwillow Avenue, and a two-lane undivided major arterial approximately 1,200 feet east Buttonwillow Avenue. The City of Reedley 2030 General Plan Circulation Element designates Manning Avenue as a four-lane major arterial through the City of Reedley SOI.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing Traffic Conditions scenario. These warrants are found in Appendix K. The effects of right-turning traffic from the minor approach onto the major approach were considered using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized study intersections satisfy the peak hour signal warrant during the weekday or weekend PM peak period. Based on the signal warrants, operational analysis and engineering judgement, signalization of no unsignalized study intersection is recommended under this scenario.

Results of Existing Level of Service Analysis

Figure 2 illustrates the Existing Traffic Conditions turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing peak hour LOS at the study intersections.

At present, the intersection of Reed Avenue and Manning Avenue exceeds its LOS threshold during the weekday PM peak period. To improve the LOS at this intersection, it is recommended that the following improvements be considered for implementation.

- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
  - Modify the traffic signal to accommodate the added lane.

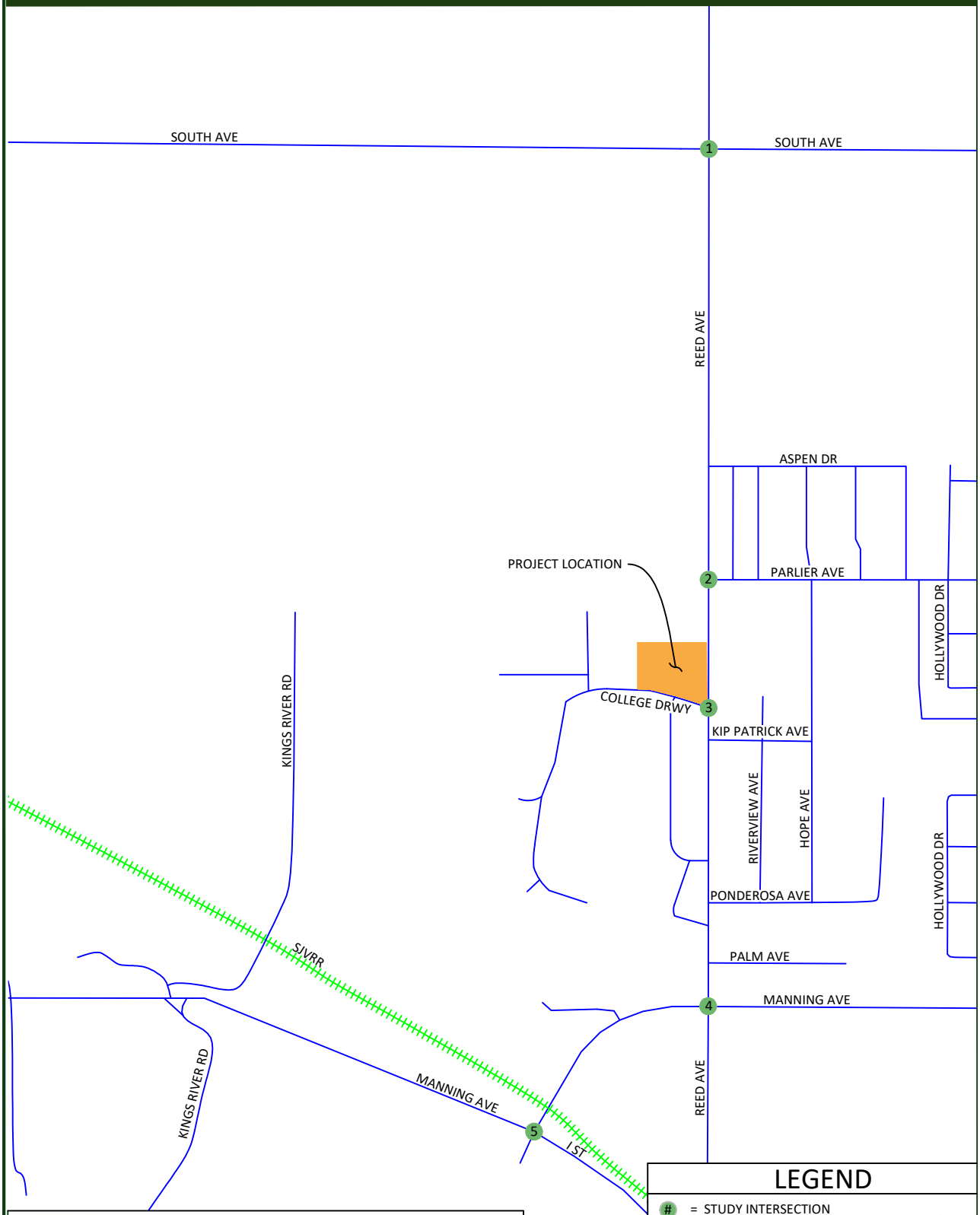
Table I: Existing Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*Weekday PM (4 - 6) Peak Hour*		*Weekend PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Reed Avenue / South Avenue	One-Way Stop	18.5	C	13.2	B
2	Reed Avenue / Parlier Avenue	One-Way Stop	18.2	C	14.7	B
3	Reed Avenue / College Driveway	One-Way Stop	21.1	C	11.8	B
4	Reed Avenue / Manning Avenue	Signalized	**50.4**	**D**	16.8	B
		Signalized (Improved)	22.7	C	16.3	B
5	Manning Avenue / "I" Street	Signalized	22.0	C	17.8	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Performing Arts Center - City of Reedley
Vicinity Map

Figure 1



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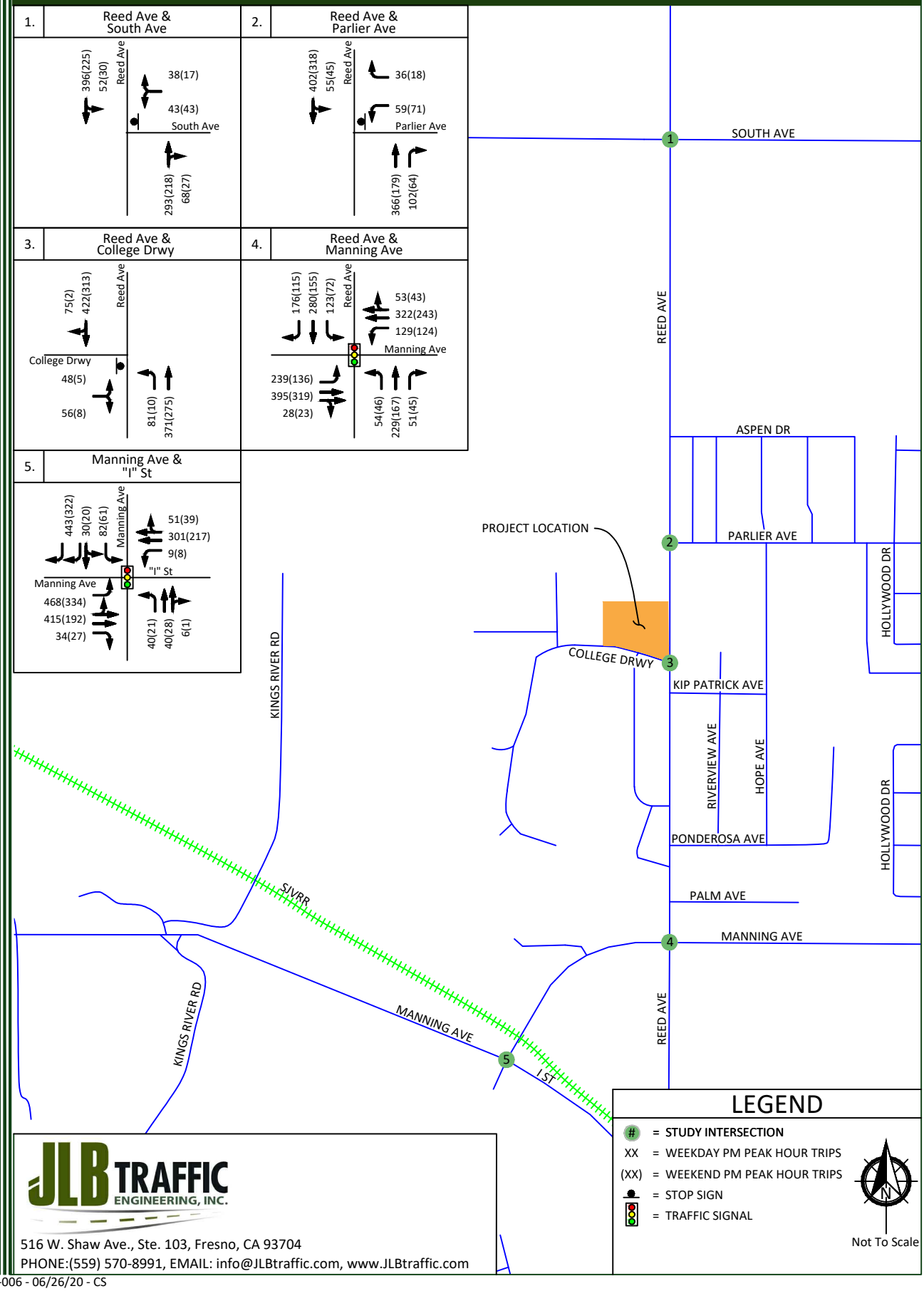
Performing Arts Center - City of Reedley
Existing - Traffic Volumes, Geometrics and Controls

Figure 2



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Existing plus Project Traffic Conditions

Project Description

The District proposes to construct the Project on the northwest corner of Reed Avenue and College Driveway in the City of Reedley on approximately 4.0 acres, of which approximately 3.2 acres are currently occupied by an orchard. The site contains a small vacant area (0.8 acres) near College Driveway that has several large mature trees.

The Project will include: an auditorium with a capacity between 500 and 550 seats; a 1,000 square-foot art gallery; an indoor lobby area configurable to accommodate up to 150 people as a sit-down dinner venue; a concessions area; a green room; a box office; a conference room; restrooms, and miscellaneous areas for storage and equipment. The Project will also include an outdoor plaza that would function as a congregational area and may be used as an area for outdoor events and performances. The outdoor area will include landscaping, lighting, and possible public art. The Project is planned to begin construction in early 2021 and be operational by late 2022. Figure 3 illustrates the latest Project Site Plan.

Project Access

Based on the latest Project Site Plan, access to and from the Project site will from two (2) points located along the west side of Reed Avenue. The principal access is the existing northern driveway herein referred to as College Driveway. The College Driveway is located approximately 200 feet north of Kip Patrick Drive and is a full access. An access road for one-way circulation is planned within the Project Site Plan. This access will connect to the north side of College Driveway approximately 400 feet west of Reed Avenue, extend north of the College Driveway approximately 400 feet, and connect to Reed Avenue to the east to allow exit-only access.

JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. Considering forecasted increases in traffic volumes along Reed Avenue and the need for future improvements at Reed Avenue and the College Driveway, it is recommended that the College Driveway connection to Reed Avenue be shifted approximately 50 to 100 feet north of its current location. The relocation of this intersection will provide separation from Kip Patrick Drive and minimize traffic operational impacts to the existing roadway network.

Trip Generation

Trip generation rates for the proposed Project were obtained from the Transportation Study for the Ford Theaters Project prepared by Gibson Transportation Consulting, Inc. dated June 2014 (hereinafter Gibson Study). The Gibson Study presents a PM peak hour trip generation rate of 0.33 with an 85/15 inbound and outbound split. The daily rate was derived based on information provided by the District that the Project would serve as a venue for up to three (3) events during a day. While the final number of expected seats for the Project was not known at the time of the preparation of the TIA, it is assumed that the Project is constructed with 550 seats to provide a conservative analysis. Table II presents the trip generation for the proposed Project with trip generation rates for a 550-seat Performing Arts Center. At buildout, the proposed Project is estimated to generate a maximum of 611 weekday daily trips, 182 weekday PM peak hour trips, and 182 weekend PM peak hour trips.

Table II: Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Weekday Daily*		*Weekday AM (7-9) Peak Hour*						*Weekday PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Performing Arts Center	550	seats	1.11**	611	0.33*	85*	15*	155	27	182	0.33*	85*	15*	155	27	182
Total Project Trips				**611**				**155**	**27**	**182**				**155**	**27**	**182**

Note: * = Trip Generation rate and inbound and outbound split based on the Transportation Study for the Ford Theaters Project prepared by Gibson Transportation Consulting, Inc. dated June 2014
** = Trip Generation rate based on information provided by the District.

Trip Distribution

The trip distribution assumptions were developed based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgement, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Reedley 2030 General Plan Circulation Element in the vicinity of the Project. Figure 4 illustrates the Project Only Trips to the study intersections.

Walkways

Currently, walkways exist in the vicinity of the proposed Project site along portions of Reed Avenue, Parlier Avenue, Manning Avenue, and "I" Street. While the City of Reedley 2019 Bicycle and Pedestrian Mobility Plan does not recommend the construction of additional sidewalk in the vicinity of the proposed Project site, it is recommended that the Project implement walkways that are ADA compliant along its frontages to Reed Avenue and College Driveway.

Bikeways

Currently, a Class I Bike Path (Reedley Parkway), Class II Bike Lanes and a Class III Bike Route exists in the vicinity of the proposed Project site along Manning Avenue. Reedley Parkway is a continuous 3.2-mile non-motorized multi-use transportation corridor built on abandoned Tulare Valley Railroad railway. The Parkway runs from the Kings River to the City Sports Park and contains amenities for bicyclists and pedestrians using the facilities. Along the route, the Parkway connects some of the community's busiest streets and allows access to most of the City's commercial center, downtown area including City Hall, several schools including Reedley College, the industrial sector as well as a Park and Ride facility. The Parkway is widely used by people of all ages for biking, walking, jogging, rollerblading, and picnicking. The City of Reedley 2019 Bicycle and Pedestrian Mobility Plan recommends: a) a Class I Bike Path extending west from Reed Avenue and Parlier Avenue to connect to the Class I Bike Path along the Kings River; b) Class II Bike Lanes along Reed Avenue through the City of Reedley SOI, Parlier Avenue east of Reed Avenue, and Kings Drive between Manning Avenue and Dinuba Avenue, and c) a Class IV Separated Bikeway along Manning Avenue between Kings River Road and Zumwalt Avenue. Therefore, it is recommended that the Project implement a Class II Bike Lane along its frontage to Reed Avenue.

Transit

The City of Reedley's Community Services Department runs an advance reservation van and an on-call door-to-door van service. The twelve-passenger vans operate Monday through Friday between the hours of 7:30 AM to 4:30 PM. These vans provide service to City Hall, the Post Office, the Community Medical Center, Adventist Medical Center Hospital, and other locations within a two-mile radius of Reedley. The vans are also used to transport children from house to school.

Fresno County Rural Transit Agency (FCRTA) provides transit services for those communities not served by FAX or Clovis Stageline. Within the City of Reedley, FCRTA has set up Reedley Transit to provide local in-city demand responsive services Monday through Friday from 7:00 AM to 4:30 PM and Saturdays from 8:00 AM to 4:30 PM. The FCRTA also has Dinuba Connection, Kingsburg-Reedley Inter-City Transit, Orange Cove Inter-City Transit and Sanger Express.

Dinuba Connection, also a Dinuba Area Regional Transit (DART) Route, runs in the vicinity of the Project site and operates at one-hour intervals on weekdays. The nearest transit stop is located at Reedley College. This route provides a direct connection to the Palm Village, Adventist Medical Center, Walmart and the Department Motor Vehicles in the City of Reedley and the Dinuba Vocational Center and Dinuba Library in the City of Dinuba.

Kingsburg-Reedley Inter-City Transit provides scheduled round-trip service between Kingsburg, Selma, Fowler, and Parlier to Reedley College Monday through Friday from 7:00 AM to 4:35 PM.

Orange Cove Inter-City Transit provides scheduled round trip inter-city service through Orange Cove, Reedley, Parlier, Sanger, and the Fresno-Clovis Metropolitan Area Monday through Friday from 7:00 AM to 5:28 PM. The stops within the City of Reedley are limited to the Reedley Shopping Center, the Reedley Community Center, and the Reedley College.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing plus Project Traffic Conditions scenario. These warrants are found in Appendix K. The effects of right-turning traffic from the minor approach onto the major approach were considered using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the study intersections are projected to satisfy the peak hour signal warrant during the weekday or weekend PM peak period. Based on the traffic signal warrants, operational analysis and engineering judgement, signalization of no study intersection is recommended.

Vehicle Miles Traveled Evaluation

Senate Bill (SB) 743 (Steinberg 2013) was approved by then Governor Brown on September 27, 2013. SB 743 created a path to revise the definition of transportation impacts according to California Environmental Quality Act (CEQA). The revised CEQA Guidelines requiring VMT analysis became effective December 28, 2018; however, agencies had until July 1, 2020 to finalize their local guidelines on VMT analysis. The intent of SB 743 is to align CEQA transportation study methodology with and promote the statewide goals and policies of reducing VMT and greenhouse gases (GHG). Three objectives of SB 743 related to development are to reduce GHG, diversify land uses, and focus on creating a multimodal environment. It is hoped that this will spur infill development.

The State of California Governor's Office of Planning and Research (OPR) published a Technical Advisory (TA) on Evaluating Transportation Impacts in CEQA (December 2018) to provide advice and recommendations, which agencies and other entities may use at their discretion. The TA acknowledges that lead agencies should set criteria and thresholds for VMT and transportation impacts. However, it provides guidance to residential, office and retail uses, citing these as the most common land uses. Beyond these three land uses, there is no guidance provided for any other land use type. The TA also notes that land uses may have a less than significant impact if located within low VMT areas of a region and suggests that screening maps be used for this determination.

A Draft Fresno County SB 743 Implementation Regional Guidelines (July 2020) published by the Fresno COG was available for use at the time of the preparation of this TIA. The Fresno County Guidelines acknowledge conditions may exist that would presume a land use development project has a less than significant impact. These may be size, location, proximity to transit, or trip-generating potential. Fresno COG also developed a VMT screening tool that identifies high, medium, and low VMT zones in the region. Per the VMT screening tool, the proposed Project is subject to VMT analysis.

For purposes of this TIA, Fresno COG was able to provide estimated VMT data for the proposed Project. Based on the Fresno COG model run, the Project is anticipated to generate an average trip length of 5.99 miles and thus a total VMT of 3,660 (5.99 miles per trip x 611 daily trips = 3,660 total VMT).

Results of Existing plus Project Level of Service Analysis

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 5 illustrates the Existing plus Project Traffic Conditions turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix F. Table III presents a summary of the Existing plus Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Reed Avenue and College Driveway and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane; and
  - Modify the intersection to accommodate the added lanes.
- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
  - Modify the traffic signal to accommodate the added lane.

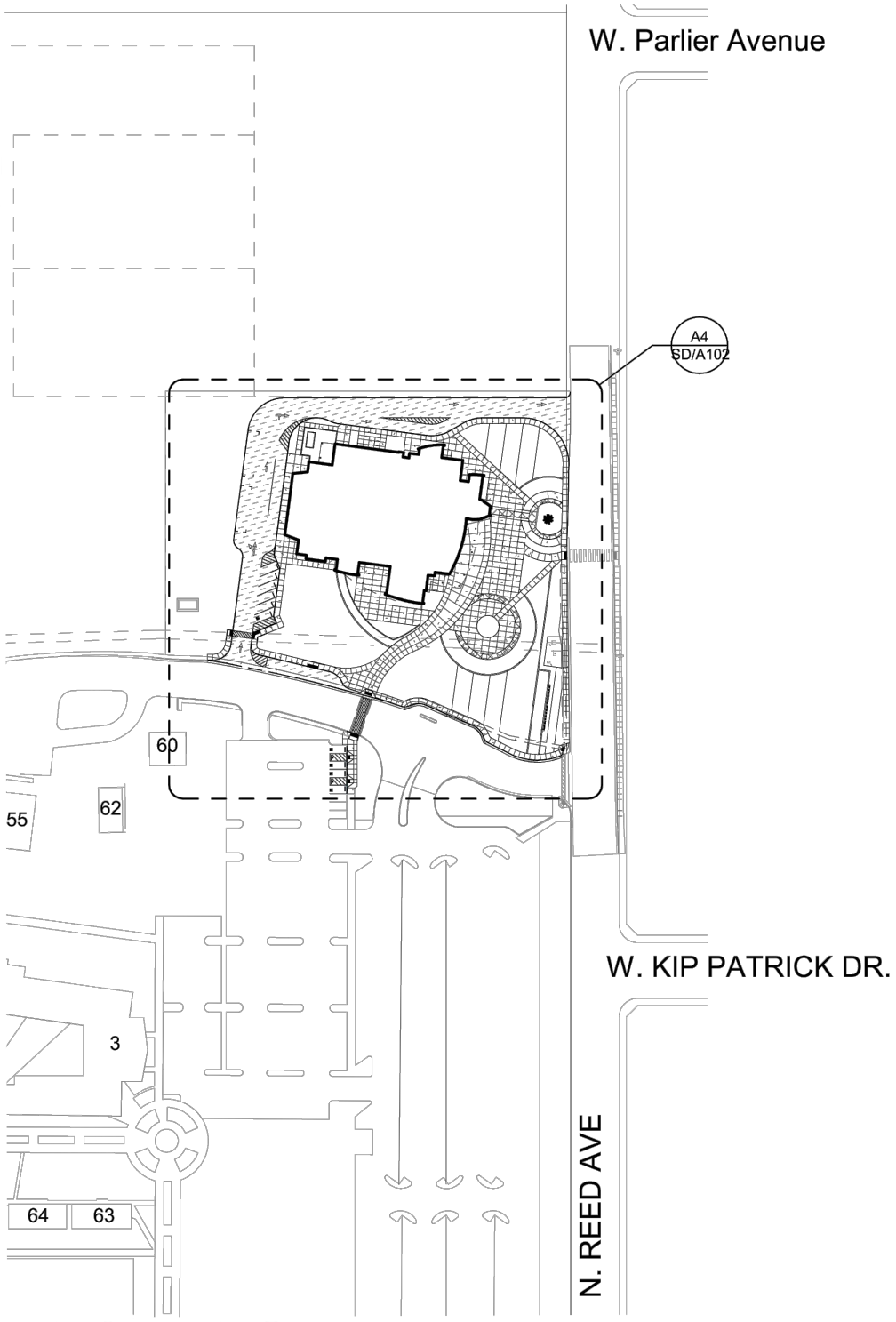
Table III: Existing plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*Weekday PM (4 - 6) Peak Hour*		*Weekend PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Reed Avenue / South Avenue	One-Way Stop	21.2	C	14.2	B
2	Reed Avenue / Parlier Avenue	One-Way Stop	21.5	C	16.5	C
3	Reed Avenue / College Driveway	One-Way Stop	**34.6**	**D**	14.4	B
		One-Way Stop (Mitigated)	24.2	C	13.5	B
4	Reed Avenue / Manning Avenue	Signalized	**59.5**	**E**	18.6	B
		Signalized (Mitigated)	23.9	C	17.2	B
5	Manning Avenue / "I" Street	Signalized	14.7	B	17.6	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Performing Arts Center - City of Reedley
Project Site Plan

Figure 3



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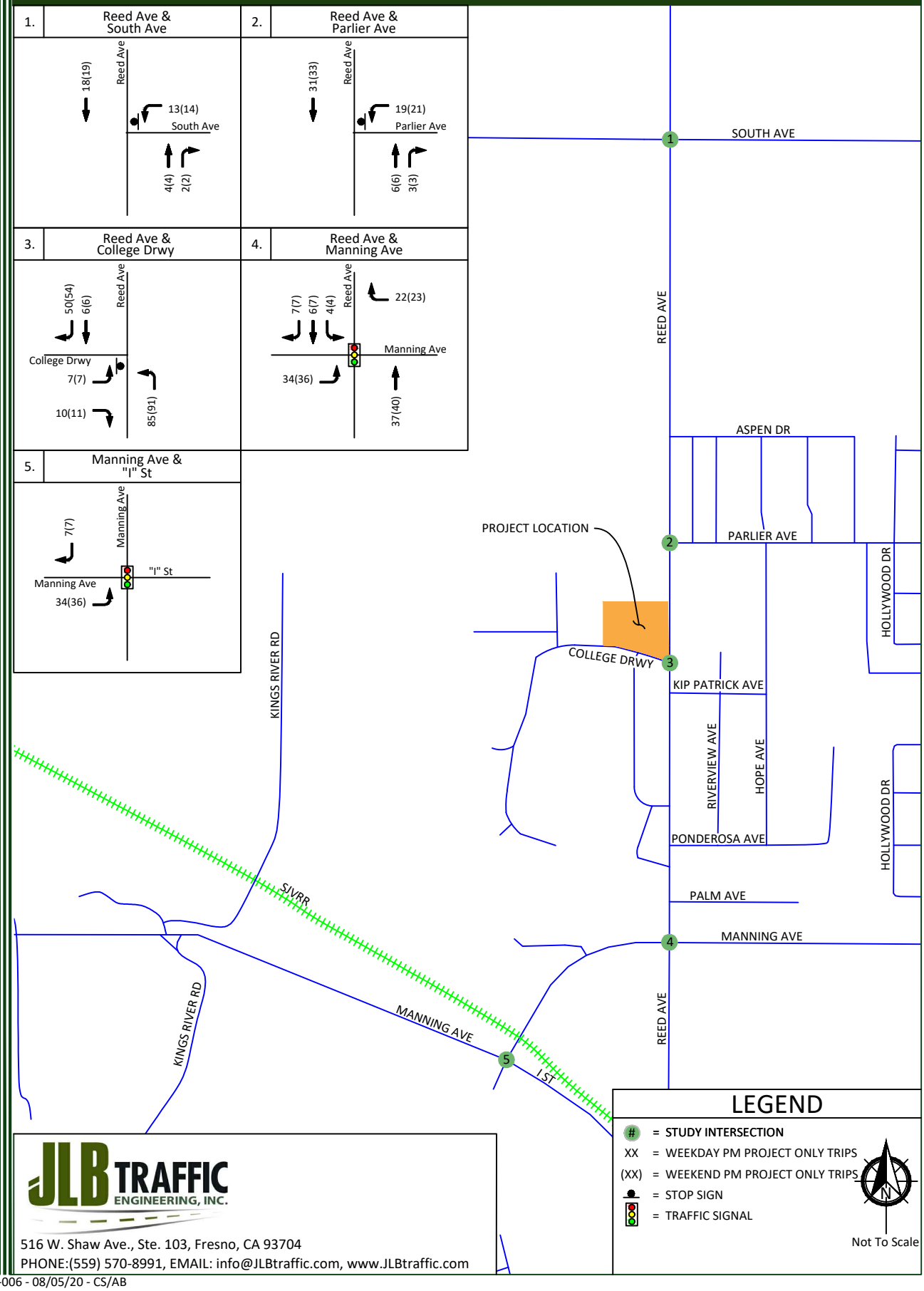
Not To Scale

Performing Arts Center - City of Reedley
Project Only Trips

Figure 4



LEGEND

- # = STUDY INTERSECTION
- XX = WEEKDAY PM PROJECT ONLY TRIPS
- (XX) = WEEKEND PM PROJECT ONLY TRIPS
- = STOP SIGN
- = TRAFFIC SIGNAL

N

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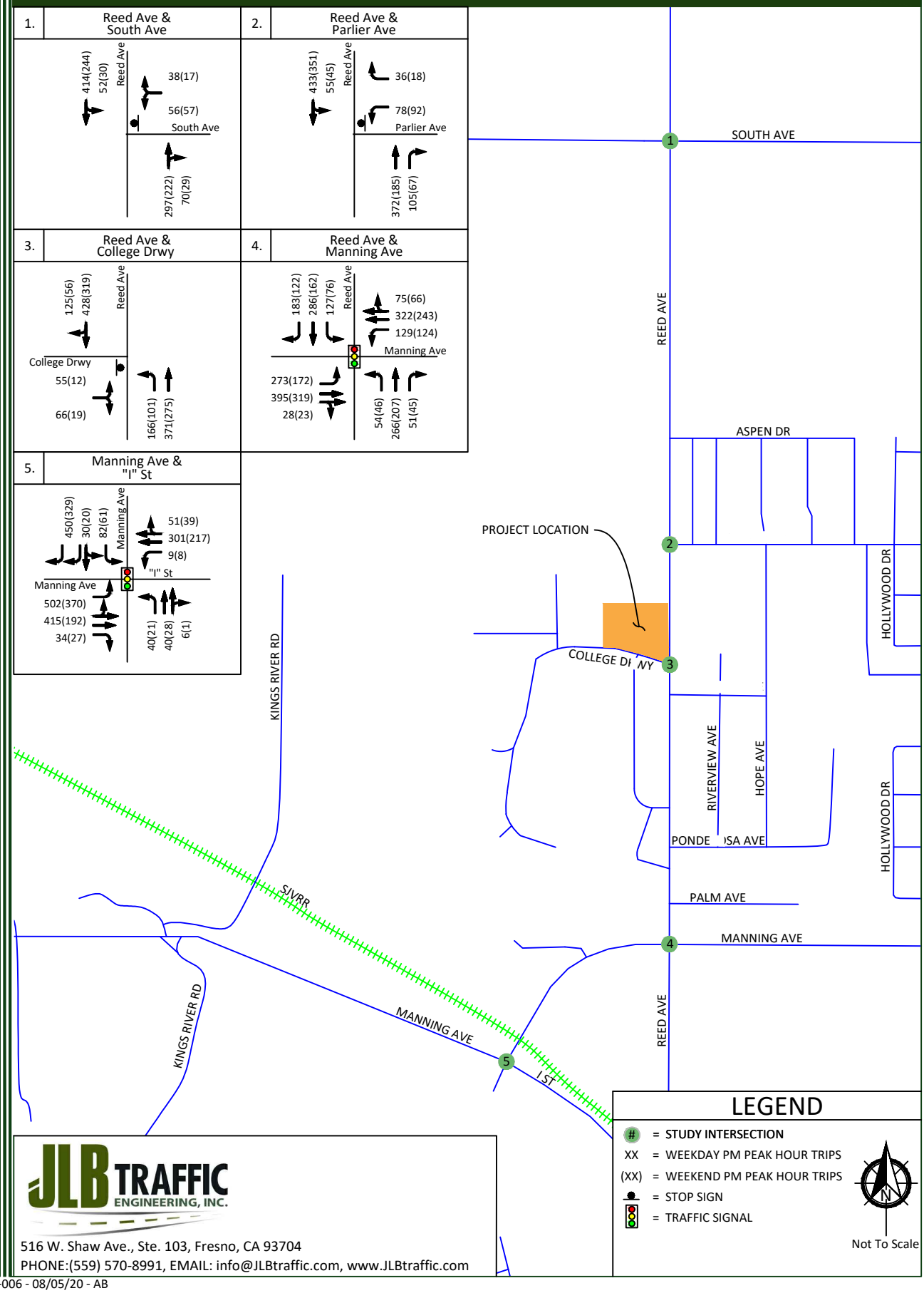
Performing Arts Center - City of Reedley
Existing plus Project - Traffic Volumes, Geometrics and Controls

Figure 5



LEGEND

- # = STUDY INTERSECTION
- XX = WEEKDAY PM PEAK HOUR TRIPS
- (XX) = WEEKEND PM PEAK HOUR TRIPS
- = STOP SIGN
- = TRAFFIC SIGNAL

N

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Near Term No Project Traffic Conditions

Description of Near Term Projects

Near Term Projects consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Reedley, County of Fresno and Caltrans staff were consulted throughout the preparation of this TIA regarding Near Term Projects that could potentially impact the study intersections. JLB staff conducted a reconnaissance of the surrounding area to confirm the Near Term Projects. Therefore, the Near Term Projects listed in Table IV were within the proximity of the proposed Project.

The trip generation listed in Table IV is that which is anticipated to be added to the streets and highways by Near Term Projects between the time of the preparation of this report and five years after buildout of the proposed Project. As shown in Table IV, the total trip generation for the Near Term Projects is 21,216 weekday daily trips, 2,131 weekday PM peak hour trips and 1,447 weekend PM peak hour trips. Figure 6 illustrates the location of the approved, near approval, or pipeline projects and their combined trip assignment to the study intersections under the Near Term No Project Traffic Conditions scenario.

Table IV: Near Term Projects' Trip Generation

Near Term Project ID	*Near Term Project Name*	*Weekday Daily Trips*	*Weekday PM (4-6) Peak Hour*	*Weekend PM (4-6) Peak Hour*
A	TT 5263[1]	151	16	14
B	TT 6206[1]	349	37	33
C	TT 6178[1]	2,649	273	279
D	TT 6196[2]	1,520	159	142
E	TT 6229[2]	1,756	184	164
F	Buttonwillow (Single-Family Residential)[2]	1,454	152	136
G	Kings River Village[1]	8,789	587	587
H	SRHS & SRES[1]	3,561	638	0
I	Fino Estates[1]	987	85	92
Total Near Term Project Trips		**21,216**	**2,131**	**1,447**

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
2 = Trip Generation based on JLB Traffic Engineering, Inc. Traffic Impact Analysis Report

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Near Term No Project Traffic Conditions scenario. These warrants are found in Appendix K. The effects of right-turning traffic from the minor approach onto the major approach were considered using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the study intersections are projected to satisfy the peak hour signal warrant during the weekday or weekend PM peak period. Based on the traffic signal warrants, operational analysis and engineering judgement, signalization of no unsignalized study intersection is recommended under this scenario.

Results of Near Term No Project Level of Service Analysis

The Near Term No Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 7 illustrates the Near Term No Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term No Project Traffic Conditions scenario are provided in Appendix G. Table V presents a summary of the Near Term No Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Reed Avenue / South Avenue
  - Implement all-way stop control.
- Reed Avenue / Parlier Avenue
  - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane; and
  - Modify the intersection to accommodate the added lanes.
- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
  - Modify the traffic signal to accommodate the added lane.

Table V: Near Term No Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*Weekday PM (4 - 6) Peak Hour*		*Weekend PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Reed Avenue / South Avenue	One-Way Stop	**29.7**	**D**	16.3	C
		All-Way Stop (Improved)	21.5	C	10.9	B
2	Reed Avenue / Parlier Avenue	One-Way Stop	**27.7**	**D**	19.9	C
		Roundabout (Improved)	7.9	A	6.2	A
3	Reed Avenue / College Driveway	One-Way Stop	**31.1**	**D**	14.7	B
		One-Way Stop (Improved)	24.0	C	14.4	B
4	Reed Avenue / Manning Avenue	Signalized	**67.8**	**E**	19.4	B
		Signalized (Improved)	25.3	C	17.2	B
5	Manning Avenue / "I" Street	Signalized	20.6	C	18.0	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

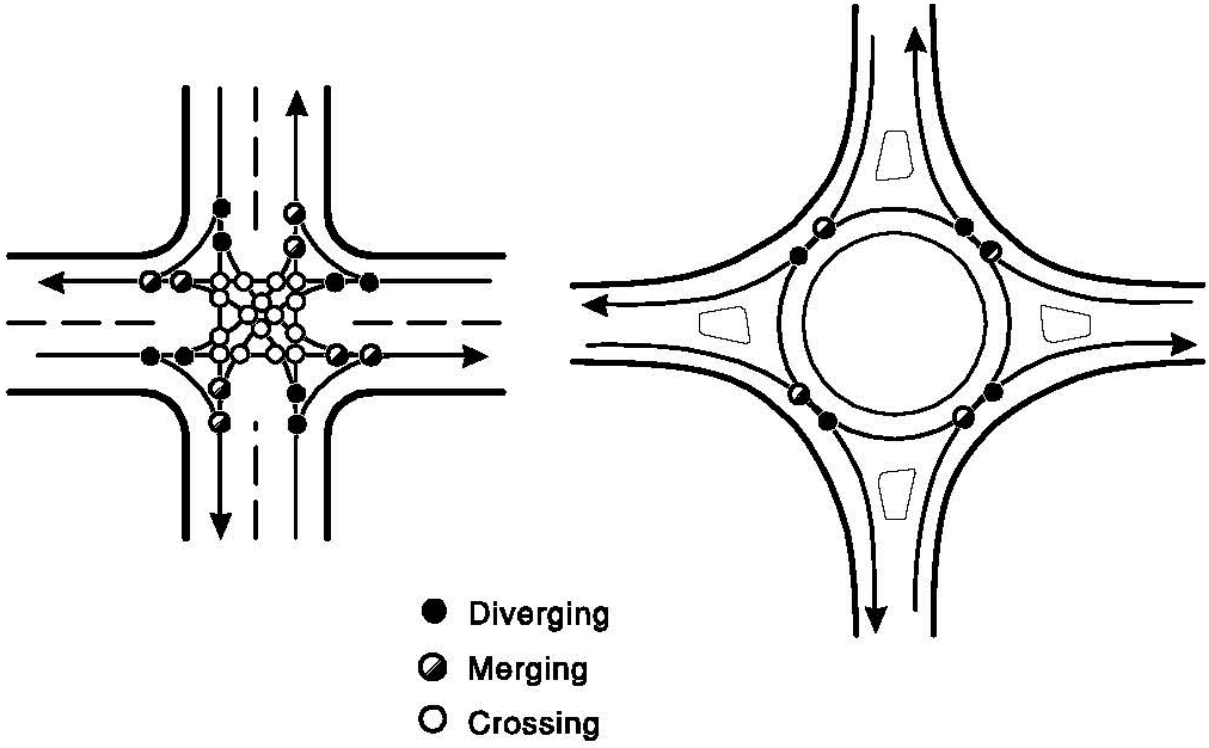
Roundabouts

At times, concerns are raised that roundabouts may be incongruent to pedestrian safety due to a variety of factors such as right of way confusion, sight distance and other components. However, research by the Federal Highway Administration (FHWA) have revealed that roundabouts can provide lasting benefits and value in many ways. They are often safer, more efficient, and more aesthetically appealing than conventional intersection designs. Furthermore, roundabouts are an excellent choice to complement other transportation objectives, including complete streets, multimodal networks, and corridor access management, without compromising the ability to keep people and freight moving through our towns, cities and regions, and across the Nation.

The FHWA Office of Safety identified roundabouts as a Proven Safety Countermeasure because of their ability to substantially reduce the types of crashes that result in injury or loss of life. Roundabouts are designed to improve safety for all users, including pedestrians and bicycles. Per the AASHTO Highway Safety Manual, roundabouts reduce the types of crashes where people are seriously hurt or killed by approximately 80 percent when compared to conventional stop-controlled and signalized intersections.

When compared to other forms of intersection controls, such as traffic signals and all-way stops, roundabouts offer a significantly safer alternative with their proven reduction in the number and severity of conflict points as a result of the lower traveling speeds of motorist through the intersection. Diagram 1 presented below illustrates the difference in conflict points between a conventional, four-legged, single-lane intersection and an equivalent single-lane roundabout (NCHRP Report 672). As can be seen from Diagram I, there are 32 conflict points associated with a conventional intersection – eight (8) merging, eight (8) diverging and 16 crossing. In contrast, there are only eight (8) total conflict points at an equivalent roundabout – four (4) merging and four (4) diverging. The NCHRP Report 672, Roundabouts: An Informational Guide, Second Edition, provides a wealth of resources on the benefits of roundabouts.

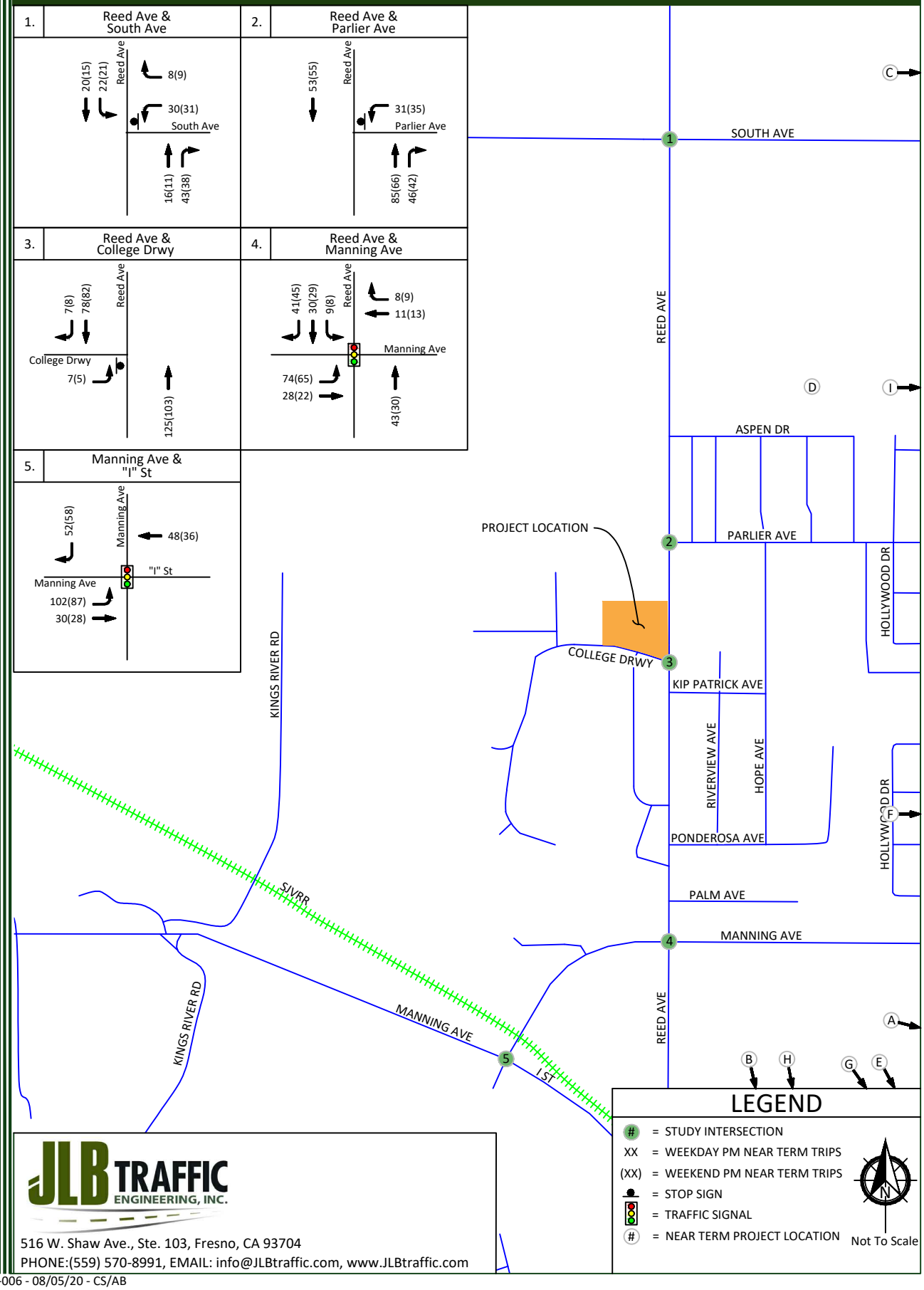
Diagram I: Vehicle Conflict Point Comparison for Intersections with Single-Lane Approaches



Source: NCHRP Report 672, Roundabouts: An Informational Guide, Second Edition

Performing Arts Center - City of Reedley
Near Term Projects' Trip Assignment

Figure 6



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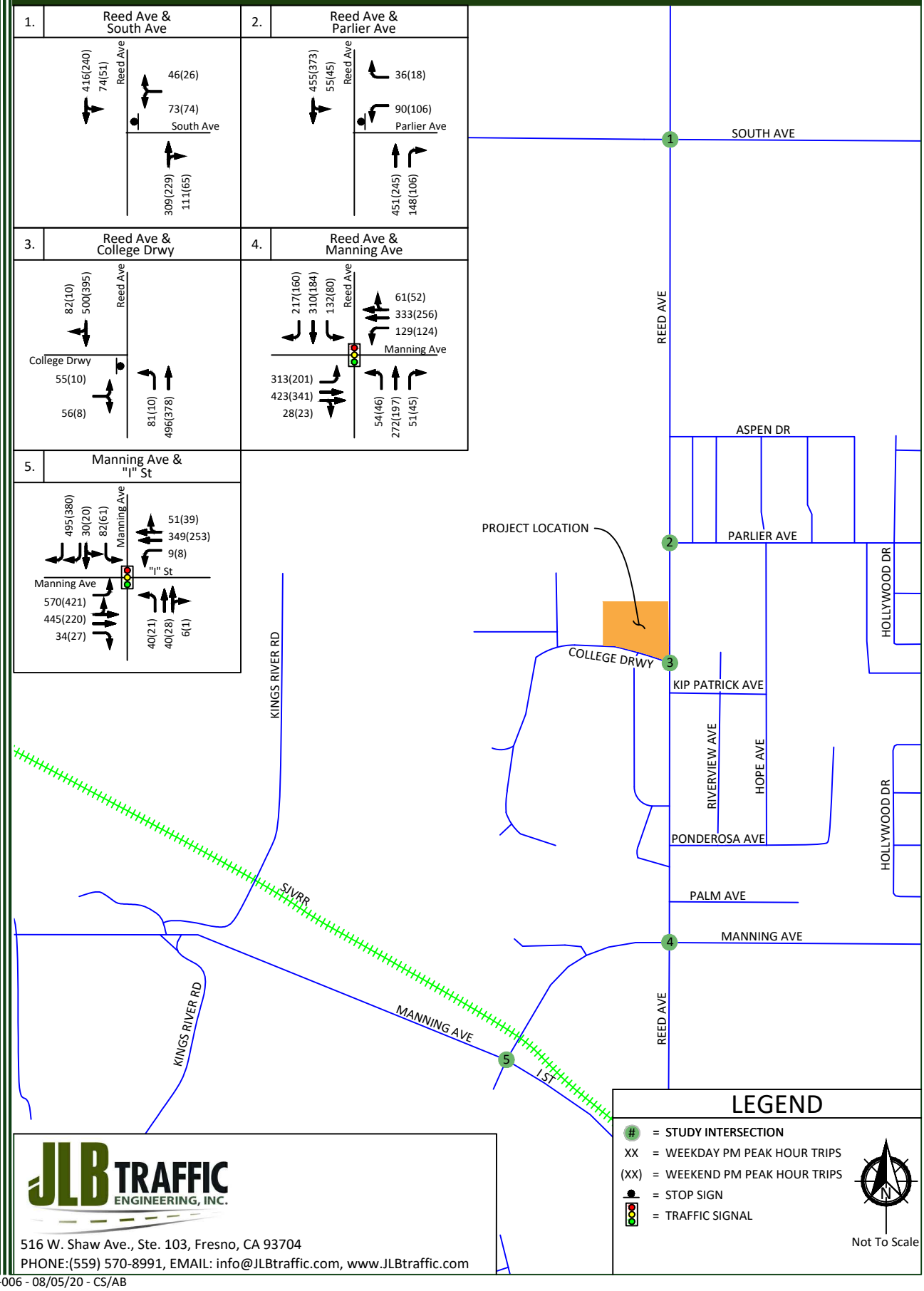
Performing Arts Center - City of Reedley
Near Term No Project - Traffic Volumes, Geometrics and Controls

Figure 7



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Near Term plus Project Traffic Conditions

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Near Term plus Project Traffic Conditions scenario. These warrants are found in Appendix K. The effects of right-turning traffic from the minor approach onto the major approach were considered using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Reed Avenue and South Avenue is projected to satisfy the peak hour signal warrant during the weekday PM peak period only. Based on the traffic signal warrants, operational analysis and engineering judgement, signalization of this study intersection is not recommended under this scenario. It is worth noting that the CA MUTCD states "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal." Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 4 and 7, as applicable, be conducted for this intersection.

Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 8 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix H. Table VI presents a summary of the Near Term plus Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Reed Avenue / South Avenue
  - Implement all-way stop control.
- Reed Avenue / Parlier Avenue
  - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the two-way left-turn lane on the south leg to a northbound left-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing in all directions;
  - Modify the intersection to accommodate the added lanes; and
  - Shift the center of the intersection approximately 50 to 100 feet north of its current location.

- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
  - Modify the traffic signal to accommodate the added lane.

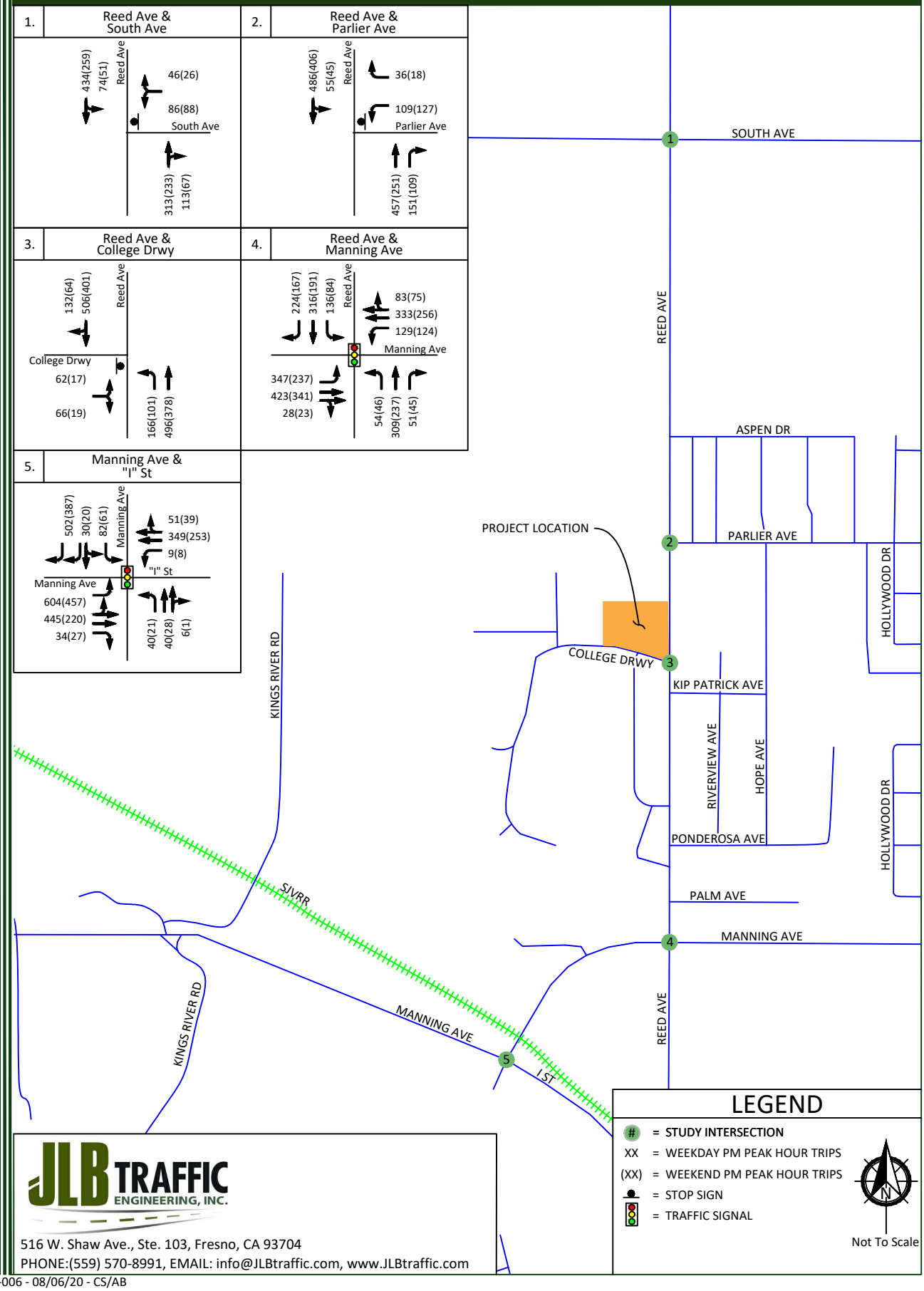
Table VI: Near Term plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*Weekday PM (4 - 6) Peak Hour*		*Weekend PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Reed Avenue / South Avenue	One-Way Stop	**36.7**	**E**	17.8	C
		All-Way Stop (Mitigated)	24.4	C	11.5	B
2	Reed Avenue / Parlier Avenue	One-Way Stop	**36.4**	**E**	23.7	C
		Roundabout (Mitigated)	8.2	A	6.6	A
3	Reed Avenue / College Driveway	One-Way Stop	**70.2**	**F**	18.7	C
		Signalized (Mitigated)	9.5	A	6.7	A
4	Reed Avenue / Manning Avenue	Signalized	**60.0**	**E**	21.0	C
		Signalized (Mitigated)	27.9	C	18.0	B
5	Manning Avenue / "I" Street	Signalized	20.7	C	17.9	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Performing Arts Center - City of Reedley
Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 8



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Cumulative Year 2040 No Project Traffic Conditions

Roadway Network

The Cumulative Year 2040 No Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place with one exception. This scenario assumes Parlier Avenue will extend west of Reed Avenue providing a direct connection to the Project site, resulting in changes in travel patterns and volumes along Reed Avenue between Parlier Avenue and the College Driveway. Figure 9 illustrates the assumed intersection geometrics and traffic controls for this intersection.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2040 No Project Traffic Conditions scenario. These warrants are found in Appendix K. The effects of right-turning traffic from the minor approach onto the major approach were considered using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Reed Avenue and South Avenue is projected to satisfy the traffic signal warrant during both peak periods, while the intersections of Reed Avenue and Parlier Avenue and Reed Avenue and College Driveway are projected to satisfy the peak hour signal warrant during the weekday PM peak period only. Based on the traffic signal warrants, operational analysis and engineering judgement, signalization of these study intersections should be considered under this scenario. However, a roundabout is also projected to provide an acceptable LOS at the intersections of Reed Avenue and South and Reed Avenue and Parlier Avenue.

Results of Cumulative Year 2040 No Project Level of Service Analysis

The Cumulative Year 2040 No Project Traffic Conditions scenario assumes that Parlier Avenue extends west of Reed Avenue. Figure 9 illustrates the Cumulative Year 2040 No Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2040 No Project Traffic Conditions scenario are provided in Appendix I. Table VII presents a summary of the Cumulative Year 2040 No Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during one or both PM peak periods. For the intersections of Reed Avenue and South Avenue and Reed Avenue and Parlier Avenue, two options for improvement were considered. One option consists of installing a roundabout, while the other option consists of installing a traffic signal. As can be seen from Table VII, both options provide for an acceptable LOS at the intersections. Roundabouts would provide for more aesthetic intersections but would require obtaining considerably more right-of-way and construction funds when compared to traffic signals. While traffic signals may be less costly, roundabouts offer a significantly safer alternative with their proven reduction in the number and severity of conflict points because of the lower traveling speeds of motorist through the intersection. The recommended improvements for each option along with the recommended improvements to improve the LOS at the intersections projected to exceed their LOS threshold are described below. It is recommended that the following improvements be considered for implementation by the City on a project by project assessment as cumulative impacts develop.

- Reed Avenue / South Avenue
  - Signalized Option
    - Modify the westbound left-right lane to a left-turn lane;
    - Add a westbound right-turn lane;
    - Modify the northbound through-right lane to a through lane;
    - Add a northbound right-turn lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through lane to a through lane;
    - Signalize the intersection with protective left-turn phasing in all directions; and
    - Modify the intersection to accommodate the added lanes.
  - Roundabout Option
    - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / Parlier Avenue
  - Signalized Option
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Modify the westbound left-through lane to a left-turn lane;
    - Modify the westbound right-turn lane to a through-right lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through lane to a through lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through lane to a through-right lane;
    - Signalize the intersection with protective left-turn phasing in all directions; and
    - Modify the intersection to accommodate the added lanes.

  - Roundabout Option
    - Modify the westbound left-through lane to a left-through-right lane;
    - Remove the westbound right-turn lane; and
    - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the two-way left-turn lane on the south leg to a northbound left-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing in all directions;
  - Modify the intersection to accommodate the added lanes; and
  - Shift the center of the intersection approximately 50 to 100 feet north of its current location.
- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
  - Add a second westbound left-turn lane;
  - Modify the northbound right-turn lane to a through-right lane;
  - Implement overlap phasing of the southbound right-turn with the eastbound left-turn phase and prohibit eastbound to westbound U-turns; and
  - Modify the traffic signal to accommodate the added lanes and phasing overlap.

While the City of Reedley is planning to construct Manning Avenue as a four-lane major arterial through the City's SOI, it is JLB's recommendation that the City reconsider its plan for Manning Avenue between Reed Avenue and Sunset Avenue and establish LOS D for this segment of Manning Avenue while retaining LOS C for the majority of its remaining major streets as part of its next general plan update. If the City established LOS D as the criteria of significance for Manning Avenue between Reed Avenue and Sunset Avenue, Manning Avenue could remain a two-lane major arterial divided by a two-way left-turn lane with 5-foot bike lanes and 8-foot on-street parking. By retaining the bike lanes and on-street parking, the City will provide its residents the opportunity to continue utilizing alternative modes of transportation, promote a healthier environment and provide residents along this segment of Manning Avenue to utilize on-street parking. Therefore, if LOS D is used as the criteria of significance for this intersection, it is recommended that the following improvements be implemented.

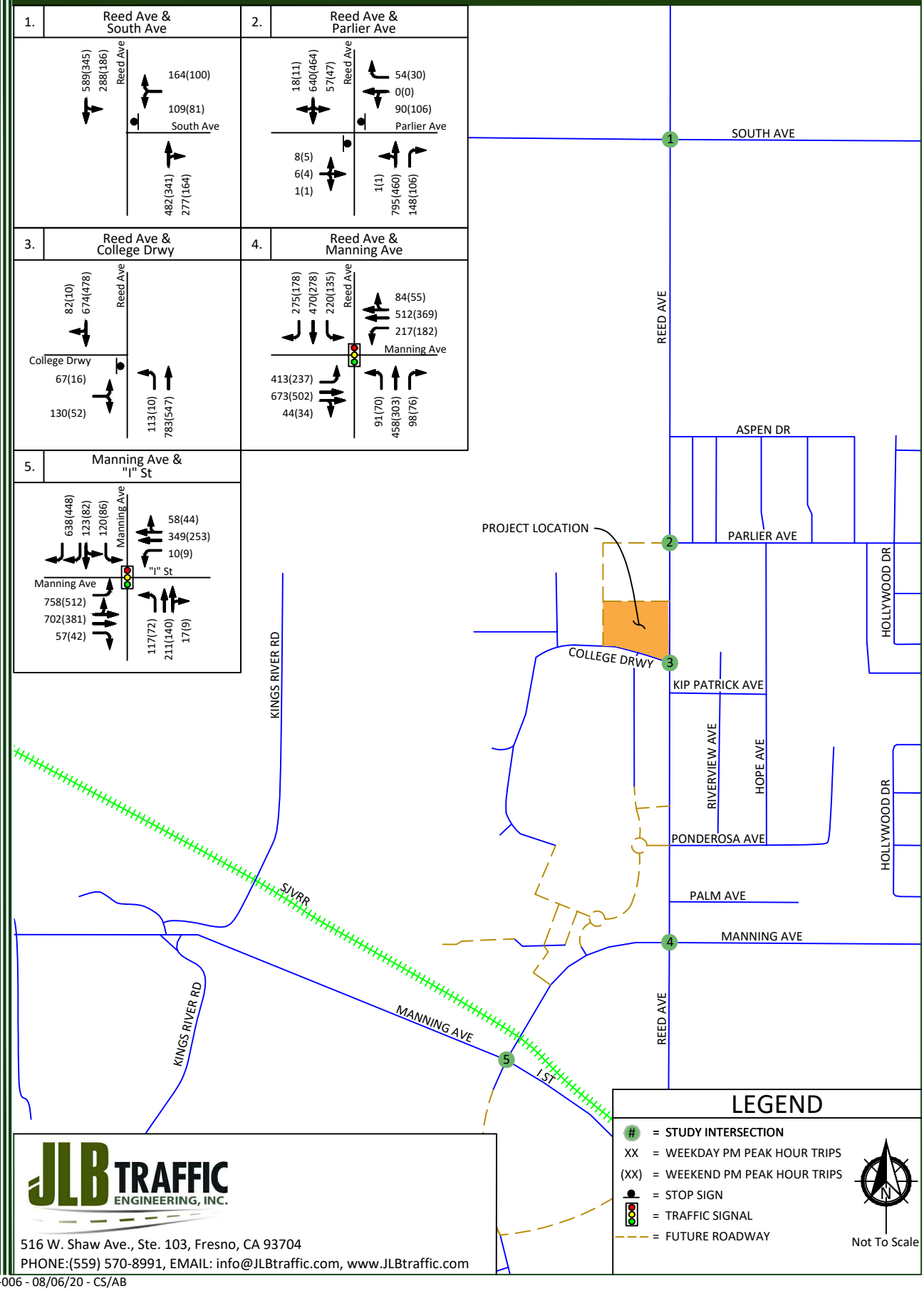
- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
  - Modify the northbound right-turn lane to a through-right lane; and
  - Modify the traffic signal to accommodate the added lanes.

Table VII: Cumulative Year 2040 No Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*Weekday PM (4 - 6) Peak Hour*		*Weekend PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Reed Avenue / South Avenue	One-Way Stop	**>120.0**	**F**	**58.1**	**F**
		Signalized (Improved)	22.9	C	13.0	B
		Roundabout (Improved)	19.8	C	8.2	A
2	Reed Avenue / Parlier Avenue	One-Way Stop	**>120.0**	**F**	**50.8**	**F**
		Signalized (Improved)	15.4	B	13.9	B
		Roundabout (Improved)	10.7	B	6.7	A
3	Reed Avenue / College Driveway	One-Way Stop	**>120.0**	**F**	15.9	C
		Signalized (Improved)	10.8	B	6.3	A
4	Reed Avenue / Manning Avenue	Signalized	**61.1**	**E**	**78.5**	**E**
		Signalized (Improved – LOS C)	34.8	C	19.0	B
		Signalized (Improved – LOS D)	**40.1**	**D**	**50.0**	**D**
5	Manning Avenue / "I" Street	Signalized	24.5	C	34.9	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Performing Arts Center - City of Reedley
Figure 9
Cumulative Year 2040 No Project - Traffic Volumes, Geometrics and Controls



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Cumulative Year 2040 plus Project Traffic Conditions

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2040 plus Project Traffic Conditions scenario. These warrants are found in Appendix K. The effects of right-turning traffic from the minor approach onto the major approach were considered using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Reed Avenue and South Avenue is projected to satisfy the traffic signal warrant during both peak periods, while the intersections of Reed Avenue and Parlier Avenue and Reed Avenue and College Driveway are projected to satisfy the peak hour traffic signal warrant during the weekday PM peak period only. Based on the traffic signal warrants, operational analysis and engineering judgement, signalization of these study intersections should be considered under this scenario. However, a roundabout is also projected to provide an acceptable LOS at the intersections of Reed Avenue and South and Reed Avenue and Parlier Avenue.

Results of Cumulative Year 2040 plus Project Level of Service Analysis

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes that the Cumulative Year 2040 No Project roadway geometrics and traffic controls will remain in place. It is projected that travel patterns and volumes may differ from what is anticipated for the immediate Project buildout with the extension of Parlier Avenue. Therefore, Figure 10 illustrates the 2040 Project Only Trips to the study intersections. Figure 11 illustrates the Cumulative Year 2040 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2040 plus Project Traffic Conditions scenario are provided in Appendix J. Table VIII presents a summary of the Cumulative Year 2040 plus Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during one or both PM peak periods. For the intersections of Reed Avenue and South Avenue and Reed Avenue and Parlier Avenue, two options for improvement were considered. One option consists of installing a roundabout, while the other option consists of installing a traffic signal. As can be seen from Table VIII, both options provide for an acceptable LOS at the intersections. Roundabouts would provide for more aesthetic intersections but would require obtaining considerably more right-of-way and construction funds when compared to traffic signals. While traffic signals may be less costly, roundabouts offer a significantly safer alternative with their proven reduction in the number and severity of conflict points because of the lower traveling speeds of motorist through the intersection. The recommended improvements for each option along with the recommended improvements to improve the LOS at the intersections projected to exceed their LOS threshold are described below. It is recommended that the following improvements be considered for implementation by the City on a project by project assessment as cumulative impacts develop.

- Reed Avenue / South Avenue
  - Signalized Option
    - Modify the westbound left-right lane to a left-turn lane;
    - Add a westbound right-turn lane;
    - Modify the northbound through-right lane to a through lane;
    - Add a northbound right-turn lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through lane to a through lane;
    - Signalize the intersection with protective left-turn phasing in all directions; and
    - Modify the intersection to accommodate the added lanes.
  - Roundabout Option
    - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / Parlier Avenue
  - Signalized Option
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Modify the westbound left-through lane to a left-turn lane;
    - Modify the westbound right-turn lane to a through-right lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through lane to a through lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through lane to a through-right lane;
    - Signalize the intersection with protective left-turn phasing in all directions; and
    - Modify the intersection to accommodate the added lanes.
  - Roundabout Option
    - Modify the westbound left-through lane to a left-through-right lane;
    - Remove the westbound right-turn lane; and
    - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the two-way left-turn lane on the south leg to a northbound left-turn lane;
  - Modify the northbound left-through lane to a through lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing in all directions;
  - Modify the intersection to accommodate the added lanes; and
  - Shift the center of the intersection approximately 50 to 100 feet north of its current location.

- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
  - Add a second westbound left-turn lane;
  - Modify the northbound right-turn lane to a through-right lane;
  - Add a second southbound through lane;
  - Implement overlap phasing of the southbound right-turn with the eastbound left-turn phase and prohibit eastbound to westbound U-turns; and
  - Modify the traffic signals to accommodate the added lanes and phasing overlap.

While the City of Reedley is planning to construct Manning Avenue as a four-lane major arterial through the City's SOI, it is JLB's recommendation that the City reconsider its plan for Manning Avenue between Reed Avenue and Sunset Avenue and establish LOS D for this segment of Manning Avenue while retaining LOS C for the majority of its remaining major streets as part of its next general plan update. If the City established LOS D as the criteria of significance for Manning Avenue between Reed Avenue and Sunset Avenue, Manning Avenue could remain a two-lane major arterial divided by a two-way left-turn lane with 5-foot bike lanes and 8-foot on-street parking. By retaining the bike lanes and on-street parking, the City will provide its residents the opportunity to continue utilizing alternative modes of transportation, promote a healthier environment and provide residents along this segment of Manning Avenue to utilize on-street parking. Therefore, if LOS D is used as the criteria of significance for this intersection, it is recommended that the following improvements be implemented.

- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
  - Modify the northbound right-turn lane to a through-right lane; and
  - Modify the traffic signal to accommodate the added lanes.

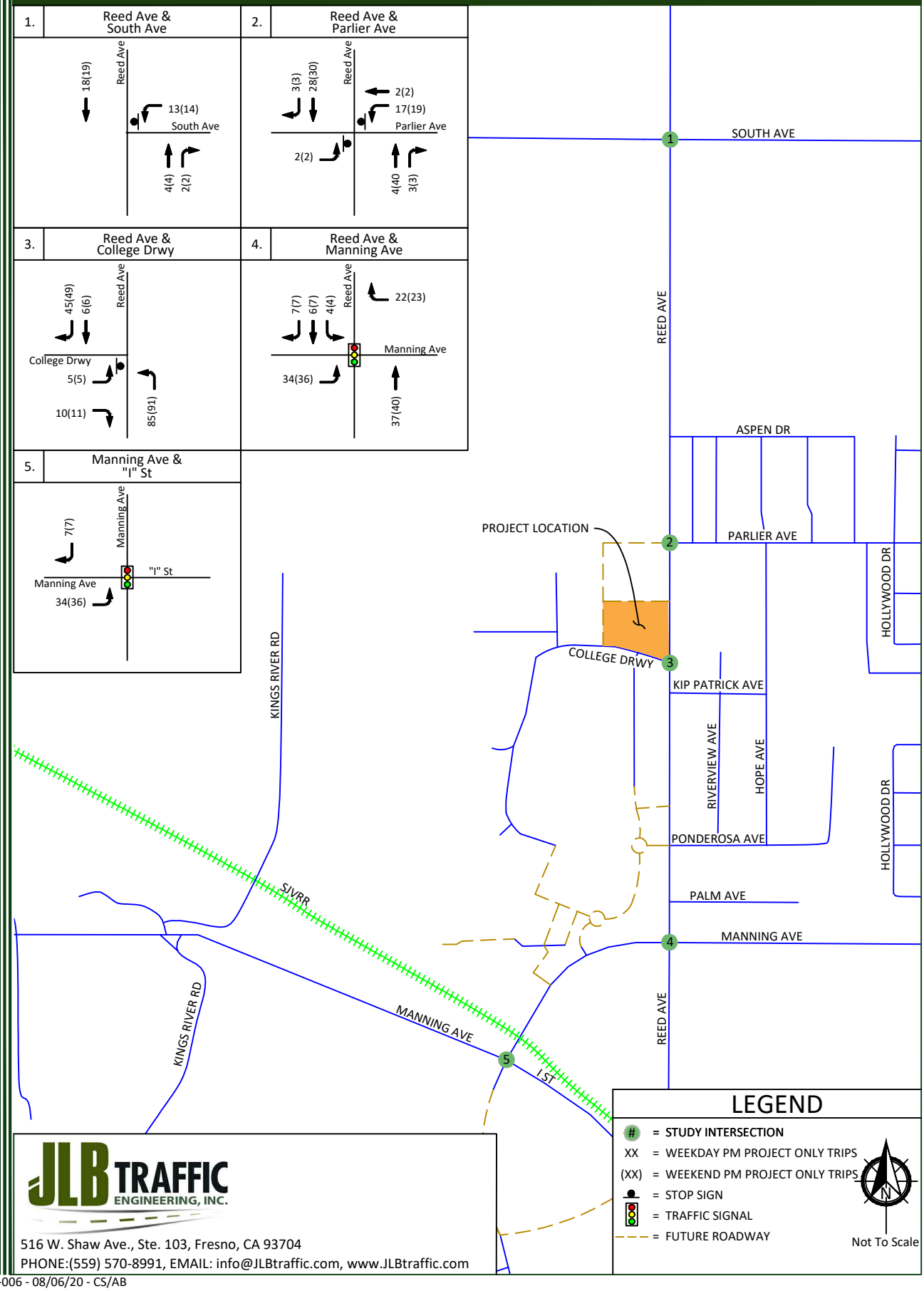
Table VIII: Cumulative Year 2040 plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*Weekday PM (4 - 6) Peak Hour*		*Weekend PM (4 - 6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Reed Avenue / South Avenue	One-Way Stop	**>120.0**	**F**	**87.8**	**F**
		Signalized (Mitigated)	34.3	C	12.1	B
		Roundabout (Mitigated)	21.1	C	8.5	A
2	Reed Avenue / Parlier Avenue	One-Way Stop	**>120.0**	**F**	**79.2**	**F**
		Signalized (Mitigated)	29.2	C	14.1	B
		Roundabout (Mitigated)	11.5	B	7.2	A
3	Reed Avenue / College Driveway	One-Way Stop	**>120.0**	**F**	21.1	C
		Signalized (Mitigated)	24.0	C	7.8	A
4	Reed Avenue / Manning Avenue	Signalized	**70.7**	**E**	**97.2**	**F**
		Signalized (Mitigated – LOS C)	34.9	C	20.3	C
		Signalized (Mitigated – LOS D)	**42.0**	**D**	23.6	C
5	Manning Avenue / "I" Street	Signalized	25.2	C	17.6	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Performing Arts Center - City of Reedley
2040 Project Only Trips

Figure 10



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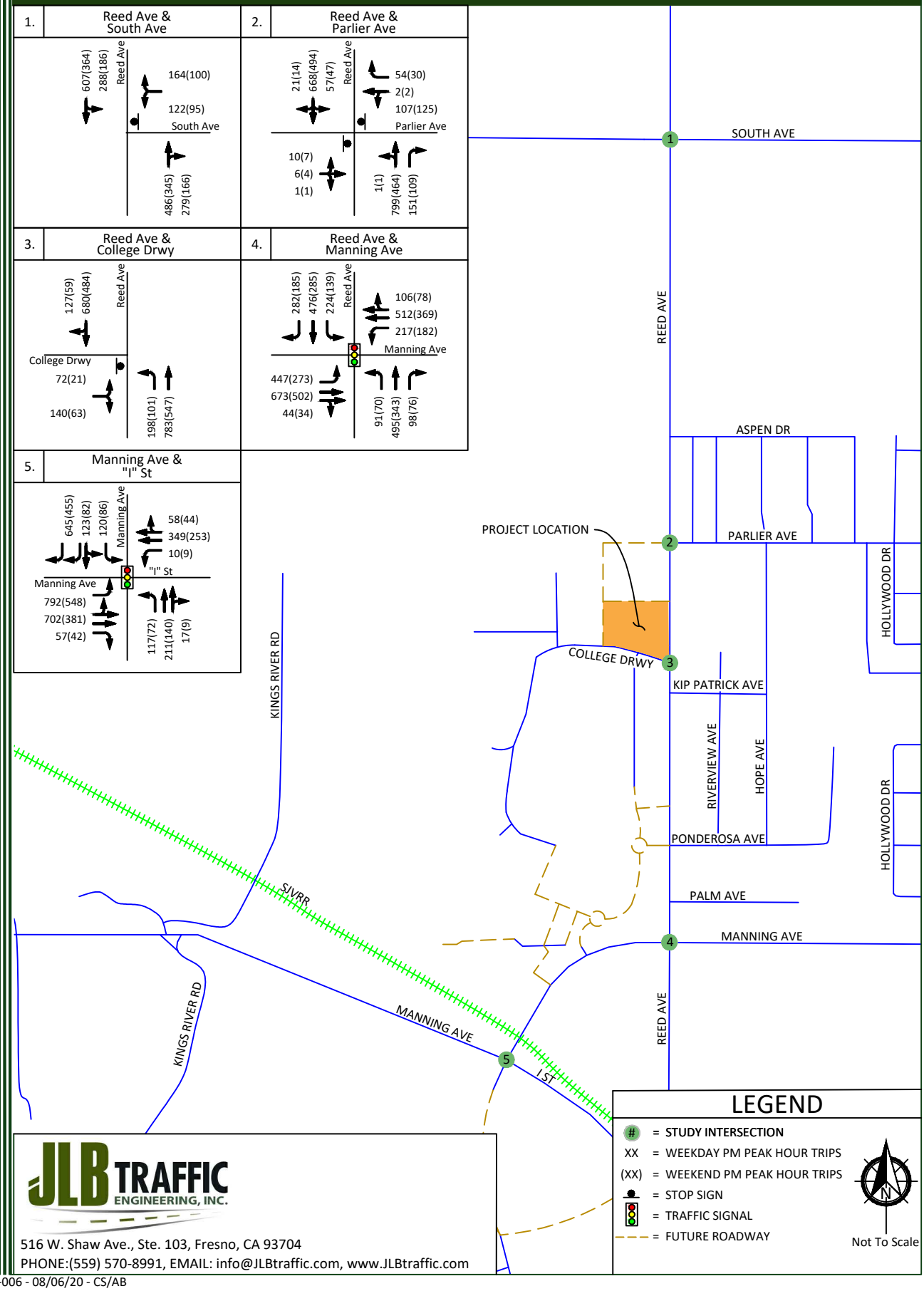
Performing Arts Center - City of Reedley
Cumulative Year 2040 plus Project - Traffic Volumes, Geometrics and Controls

Figure 11



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Queuing Analysis

Table IX provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections.

Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table IX are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift were needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table IX.

The storage capacity for Cumulative Year 2040 shall be based on the SimTraffic output files and engineering judgement. The values in bold presented in Table IX are the projected queue lengths that will likely need to be accommodated by Cumulative Year 2040. The existing storage capacity at the remaining approaches will be sufficient to accommodate the maximum queue.

Table IX: Queuing Analysis

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term No Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
1	Reed Avenue / South Avenue (Stop)	WB L-R	>500	58	54	58	47	60	46
		NB T-R	>500	0	0	0	0	72	76
		SB L-T	>500	40	19	61	32	94	75
1	Reed Avenue / South Avenue (Signal)	WB L	*	*	*	*	*	*	*
		WB R	*	*	*	*	*	*	*
		NB T	*	*	*	*	*	*	*
		NB R	*	*	*	*	*	*	*
		SB L	*	*	*	*	*	*	*
		SB T	*	*	*	*	*	*	*
1	Reed Avenue / South Avenue (Roundabout)	WB L-R	>500	*	*	*	*	*	*
		NB T-R	>500	*	*	*	*	*	*
		SB L-T	>500	*	*	*	*	*	*
1	Reed Avenue / South Avenue (Signal – LOS D)	WB L	*	*	*	*	*	*	*
		WB R	*	*	*	*	*	*	*
		NB T	*	*	*	*	*	*	*
		NB R	*	*	*	*	*	*	*
		SB L	*	*	*	*	*	*	*
		SB T	*	*	*	*	*	*	*

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Near Term plus Project		Cumulative Year 2040 No Project		Cumulative Year 2040 plus Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
1	Reed Avenue / South Avenue (Stop)	WB L-R	>500	55	56	*	*	*	*
		NB T-R	>500	98	76	*	*	*	*
		SB L-T	>500	119	71	*	*	*	*
1	Reed Avenue / South Avenue (Signal)	WB L	*	*	*	**136**	65	132	72
		WB R	*	*	*	87	47	**109**	52
		NB T	*	*	*	262	150	316	154
		NB R	*	*	*	**134**	79	113	81
		SB L	*	*	*	263	125	**307**	130
		SB T	*	*	*	226	101	247	85
1	Reed Avenue / South Avenue (Roundabout)	WB L-R	>500	*	*	70	42	61	57
		NB T-R	>500	*	*	251	87	202	80
		SB L-T	>500	*	*	142	60	366	53
1	Reed Avenue / South Avenue (Signal – LOS D)	WB L	*	*	*	124	97	**170**	77
		WB R	*	*	*	**85**	62	67	54
		NB T	*	*	*	241	153	245	153
		NB R	*	*	*	125	69	**147**	71
		SB L	*	*	*	234	252	**270**	133
		SB T	*	*	*	175	149	228	88

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term No Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
2	Reed Avenue / Parlier Avenue (Stop)	WB L	>500	62	55	78	68	*	*
		WB R	160	46	48	44	49	*	*
		NB T	>500	0	0	14	0	*	*
		NB R	150	0	0	0	0	*	*
		SB L-T	>500	57	46	71	38	*	*
2	Reed Avenue / Parlier Avenue (Signal)	EB L	*	*	*	*	*	*	*
		EB T-R	*	*	*	*	*	*	*
		WB L	>500	*	*	*	*	*	*
		WB T-R	*	*	*	*	*	*	*
		NB L	*	*	*	*	*	*	*
		NB T	>500	*	*	*	*	*	*
		NB R	150	*	*	*	*	*	*
		SB L	*	*	*	*	*	*	*
		SB T-R	*	*	*	*	*	*	*
2	Reed Avenue / Parlier Avenue (Roundabout)	EB L-T-R	*	*	*	*	*	*	*
		WB L-R	*	*	*	*	*	60	34
		WB L-T-R	*	*	*	*	*	*	*
		NB L-T	*	*	*	*	*	*	*
		NB T-R	*	*	*	*	*	77	52
		NB R	150	*	*	*	*	*	*
		SB L-T	>500	*	*	*	*	62	52
		SB L-T-R	*	*	*	*	*	*	*
2	Reed Avenue / Parlier Avenue (Signal – LOS D)	EB L	*	*	*	*	*	*	*
		EB T-R	*	*	*	*	*	*	*
		WB L	>500	*	*	*	*	*	*
		WB T-R	*	*	*	*	*	*	*
		NB L	*	*	*	*	*	*	*
		NB T	>500	*	*	*	*	*	*
		NB R	150	*	*	*	*	*	*
		SB L	*	*	*	*	*	*	*
		SB T-R	*	*	*	*	*	*	*

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Near Term plus Project		Cumulative Year 2040 No Project		Cumulative Year 2040 plus Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
2	Reed Avenue / Parlier Avenue (Stop)	WB L	>500	*	*	*	*	*	*
		WB R	160	*	*	*	*	*	*
		NB T	>500	*	*	*	*	*	*
		NB R	150	*	*	*	*	*	*
		SB L-T	>500	*	*	*	*	*	*
2	Reed Avenue / Parlier Avenue (Signal)	EB L	*	*	*	**39**	25	36	27
		EB T-R	*	*	*	24	18	31	30
		WB L	>500	*	*	134	101	161	135
		WB T-R	*	*	*	62	44	68	48
		NB L	*	*	*	0	**8**	8	8
		NB T	>500	*	*	627	200	624	203
		NB R	150	*	*	249	0	**263**	0
		SB L	*	*	*	**161**	52	69	76
		SB T-R	*	*	*	334	143	340	248
2	Reed Avenue / Parlier Avenue (Roundabout)	EB L-T-R	*	*	*	30	26	31	18
		WB L-R	*	73	47	*	*	*	*
		WB L-T-R	*	*	*	80	46	85	60
		NB L-T	*	*	*	513	53	221	61
		NB T-R	*	138	49	*	*	*	*
		NB R	150	*	*	**297**	17	121	0
		SB L-T	>500	96	54	*	*	*	*
		SB L-T-R	*	*	*	106	72	100	84
2	Reed Avenue / Parlier Avenue (Signal – LOS D)	EB L	*	*	*	22	27	**30**	21
		EB T-R	*	*	*	33	15	30	25
		WB L	>500	*	*	110	162	151	122
		WB T-R	*	*	*	45	37	68	49
		NB L	*	*	*	8	0	0	**13**
		NB T	>500	*	*	573	354	489	274
		NB R	150	*	*	215	214	**275**	82
		SB L	*	*	*	**87**	75	87	57
		SB T-R	*	*	*	269	218	351	179

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term No Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
3	Reed Avenue / College Driveway (Stop)	EB L-R	>300	78	24	*	*	*	*
		EB L	*	*	*	45	25	62	27
		EB R	*	*	*	44	23	43	18
		NB L	160	53	14	72	59	59	13
		NB T	>500	0	0	0	0	0	0
		SB T-R	>500	8	0	*	*	*	*
		SB T	*	*	*	0	0	0	0
		SB R	*	*	*	21	8	36	0
3	Reed Avenue / College Driveway (Signal)	EB L	*	*	*	*	*	*	*
		EB R	*	*	*	*	*	*	*
		NB L	*	*	*	*	*	*	*
		NB T	*	*	*	*	*	*	*
		SB T	*	*	*	*	*	*	*
		SB R	*	*	*	*	*	*	*
3	Reed Avenue / College Driveway (Signal – LOS D)	EB L	*	*	*	*	*	*	*
		EB R	*	*	*	*	*	*	*
		NB L	*	*	*	*	*	*	*
		NB T	*	*	*	*	*	*	*
		SB T	*	*	*	*	*	*	*
		SB R	*	*	*	*	*	*	*

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Near Term plus Project		Cumulative Year 2040 No Project		Cumulative Year 2040 plus Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
3	Reed Avenue / College Driveway (Stop)	EB L-R	>300	*	*	*	*	*	*
		EB L	*	*	*	*	*	*	*
		EB R	*	*	*	*	*	*	*
		NB L	160	*	*	*	*	*	*
		NB T	>500	*	*	*	*	*	*
		SB T-R	>500	*	*	*	*	*	*
		SB T	*	*	*	*	*	*	*
		SB R	*	*	*	*	*	*	*
3	Reed Avenue / College Driveway (Signal)	EB L	*	60	33	91	23	**139**	32
		EB R	*	50	35	**106**	43	83	40
		NB L	*	157	89	116	39	**196**	100
		NB T	*	162	96	245	97	243	131
		SB T	*	284	119	403	127	408	190
		SB R	*	152	51	142	17	**156**	52
3	Reed Avenue / College Driveway (Signal – LOS D)	EB L	*	*	*	80	38	**112**	40
		EB R	*	*	*	57	36	**111**	51
		NB L	*	*	*	109	29	**231**	104
		NB T	*	*	*	200	132	269	181
		SB T	*	*	*	310	122	311	204
		SB R	*	*	*	**131**	0	67	42

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term No Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
4	Reed Avenue / Manning Avenue (Stop/Roundabout/Signal)	EB L-L	*	128	79	145	96	188	103
		EB T	>500	233	197	245	200	272	213
		EB T-R	>500	161	142	163	114	220	119
		WB L	160	169	111	176	145	221	99
		WB L-L	*	*	*	*	*	*	*
		WB T	>500	133	106	164	105	175	89
		WB T-R	>500	200	131	198	142	197	136
		NB L	100	100	80	97	105	127	92
		NB T	>500	180	136	222	163	209	171
		NB T-R	*	*	*	*	*	*	*
		NB R	100	94	78	90	70	93	91
		SB L	100	178	97	155	87	171	124
		SB T	>500	388	107	276	125	324	204
		SB T	*	*	*	*	*	*	*
		SB R	100	156	83	153	93	160	124
4	Reed Avenue / Manning Avenue (Signal – LOS D)	EB L-L	*	*	*	*	*	*	*
		EB T	>500	*	*	*	*	*	*
		EB T-R	>500	*	*	*	*	*	*
		WB L	160	*	*	*	*	*	*
		WB T	>500	*	*	*	*	*	*
		WB T-R	>500	*	*	*	*	*	*
		NB L	100	*	*	*	*	*	*
		NB T	>500	*	*	*	*	*	*
		NB T-R	*	*	*	*	*	*	*
		SB L	100	*	*	*	*	*	*
		SB T	>500	*	*	*	*	*	*
		SB R	100	*	*	*	*	*	*

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Near Term plus Project		Cumulative Year 2040 No Project		Cumulative Year 2040 plus Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
4	Reed Avenue / Manning Avenue (Stop/Roundabout/Signal)	EB L-L	*	307	142	**369**	169	327	146
		EB T	>500	319	220	546	155	338	195
		EB T-R	>500	236	138	409	173	307	214
		WB L	160	180	142	*	*	*	*
		WB L-L	*	*	*	128	117	**178**	94
		WB T	>500	145	111	232	120	304	155
		WB T-R	>500	181	153	256	187	327	202
		NB L	100	118	124	193	124	**202**	125
		NB T	>500	308	167	308	173	391	216
		NB T-R	*	*	*	253	154	365	198
		NB R	100	144	78	*	*	*	*
		SB L	100	164	111	**346**	159	299	181
		SB T	>500	348	187	604	199	213	107
		SB T	*	*	*	*	*	229	112
		SB R	100	168	125	**343**	92	119	92
4	Reed Avenue / Manning Avenue (Signal – LOS D)	EB L-L	*	*	*	257	129	**342**	214
		EB T	>500	*	*	289	201	377	168
		EB T-R	>500	*	*	289	210	295	168
		WB L	160	*	*	260	197	235	**270**
		WB T	>500	*	*	335	232	370	421
		WB T-R	>500	*	*	298	232	361	273
		NB L	100	*	*	**200**	101	180	108
		NB T	>500	*	*	264	208	272	183
		NB T-R	*	*	*	246	172	261	161
		SB L	100	*	*	363	159	**452**	157
		SB T	>500	*	*	419	240	776	229
		SB R	100	*	*	293	95	**401**	95

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term No Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
5	Manning Avenue / I Street (Stop/Roundabout/Signal)	EB L	370	136	103	135	108	211	119
		EB L-T	>500	143	94	141	106	177	102
		EB T	>500	124	27	94	75	137	40
		EB R	>500	15	15	9	15	13	8
		WB L	150	36	28	27	37	40	35
		WB T	>500	123	99	130	118	165	129
		WB T-R	>500	89	68	114	112	166	91
		NB L	250	81	41	65	40	64	46
		NB T	>500	49	36	45	42	44	38
		NB T-R	>500	17	16	24	26	18	6
		SB L	200	49	23	41	24	46	20
		SB L-T	>500	86	69	69	62	78	71
		SB R	>500	85	67	81	63	86	66
		SB R	200	98	77	100	93	110	91
5	Manning Avenue / I Street (Signal – LOS D Option)	EB L	370	*	*	*	*	*	*
		EB L-T	>500	*	*	*	*	*	*
		EB T	>500	*	*	*	*	*	*
		EB R	>500	*	*	*	*	*	*
		WB L	150	*	*	*	*	*	*
		WB T	>500	*	*	*	*	*	*
		WB T-R	>500	*	*	*	*	*	*
		NB L	250	*	*	*	*	*	*
		NB T	>500	*	*	*	*	*	*
		NB T-R	>500	*	*	*	*	*	*
		SB L	200	*	*	*	*	*	*
		SB L-T	>500	*	*	*	*	*	*
		SB R	>500	*	*	*	*	*	*
		SB R	200	*	*	*	*	*	*

Note: * = Does not exist or is not projected to exist

Table IX: Queuing Analysis (cont.)

ID	Intersection	Existing Queue Storage Length (ft.)		Near Term plus Project		Cumulative Year 2040 No Project		Cumulative Year 2040 plus Project	
				Weekday PM	Weekend PM	Weekday PM	Weekend PM	Weekday PM	Weekend PM
5	Manning Avenue / I Street (Stop/Roundabout/Signal)	EB L	370	262	156	339	165	344	188
		EB L-T	>500	240	129	385	187	389	204
		EB T	>500	145	50	359	158	324	162
		EB R	>500	14	11	19	20	17	11
		WB L	150	24	33	48	30	46	34
		WB T	>500	156	143	198	106	207	143
		WB T-R	>500	143	117	187	73	183	122
		NB L	250	59	37	244	90	132	94
		NB T	>500	45	46	114	72	151	73
		NB T-R	>500	23	0	65	37	107	48
		SB L	200	48	25	52	62	106	50
		SB L-T	>500	70	66	158	101	182	107
		SB R	>500	75	71	139	74	144	81
		SB R	200	112	89	159	98	161	95
5	Manning Avenue / I Street (Signal – LOS D Option)	EB L	370	*	*	320	157	319	204
		EB L-T	>500	*	*	332	191	346	207
		EB T	>500	*	*	273	154	312	121
		EB R	>500	*	*	11	15	15	18
		WB L	150	*	*	41	25	35	20
		WB T	>500	*	*	182	141	211	125
		WB T-R	>500	*	*	152	118	187	97
		NB L	250	*	*	190	97	160	81
		NB T	>500	*	*	98	91	130	80
		NB T-R	>500	*	*	87	41	95	35
		SB L	200	*	*	89	70	91	49
		SB L-T	>500	*	*	152	133	167	114
		SB R	>500	*	*	125	78	145	78
		SB R	200	*	*	162	106	172	107

Note: * = Does not exist or is not projected to exist

Project's Pro-Rata Fair Share of Future Transportation Improvements

The Project's fair share percentage impact to study intersections projected to fall below their LOS threshold and which are not covered by an existing impact fee program is provided in Table X. The Project's fair share percentage impacts were calculated pursuant to the Caltrans Guide for the Preparation of Traffic Impact Studies. The Project's pro-rata fair shares were calculated utilizing the Existing volumes, Project Only Trips, and Cumulative Year 2040 plus Project volumes. Figure 2 presents the Existing traffic volumes, Figure 10 illustrates the 2040 Project Only Trips, and Figure 11 illustrates the Cumulative Year 2040 plus Project traffic volumes. Since the critical peak period for the study facilities was determined to be during the weekday PM peak, the weekday PM peak volumes are utilized to determine the Project's pro-rata fair share.

It is recommended that the Project contribute its equitable fair share as listed in Table X for the future improvements necessary to maintain an acceptable LOS. However, fair share contributions should only be made for those facilities, or portion thereof, currently not funded by the responsible agencies roadway impact fee program(s) or grant funded projects, as appropriate. For those improvements not presently covered by local and regional roadway impact fee programs or grant funding, it is recommended that the Project contribute its equitable fair share. Payment of the Project's equitable fair share in addition to the local and regional impact fee programs would satisfy the Project's traffic mitigation measures.

This TIA does not provide construction costs for the recommended mitigation measures. Therefore, if the recommended mitigation measures are implemented, it is recommended that the District work with the City of Reedley to develop the estimated construction costs.

Table X: Project's Fair Share of Future Roadway Improvements

ID	*Intersection*	*Existing Traffic Volumes (Weekday PM Peak)*	*Cumulative Year 2040 plus Project Traffic Volumes (Weekday PM Peak)*	*2040 Project Only Trips (PM Peak)*	*Project's Fair Share (%)*
1	Reed Avenue / South Avenue	890	1,946	37	3.50
2	Reed Avenue / Parlier Avenue	1,020	1,877	59	6.88
3	Reed Avenue / College Driveway	1,053	2,000	151	15.95
4	Reed Avenue / Manning Avenue	2,079	3,665	110	6.94

Note: Project Fair Share = ((2040 Project Only Trips) / (Cumulative Year 2040 + Project Traffic Volumes - Existing Traffic Volumes)) x 100

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, the intersection of Reed Avenue and Manning Avenue exceeds its LOS threshold during the weekday PM peak period. To improve the LOS at this intersection, it is recommended that the following improvements be considered for implementation.
  - Reed Avenue / Manning Avenue
    - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
    - Modify the traffic signal to accommodate the added lane.

Existing plus Project Traffic Conditions

- Considering forecasted increases in traffic volumes along Reed Avenue and the need for future improvements at Reed Avenue and the College Driveway, it is recommended that the College Driveway connection to Reed Avenue be shifted approximately 50 to 100 feet north of its current location. The relocation of this intersection will provide separation from Kip Patrick Drive and minimize traffic operational impacts to the existing roadway network.
- At buildout, the proposed Project is estimated to generate a maximum of 611 weekday daily trips, 182 weekday PM peak hour trips, and 182 weekend PM peak hour trips.
- It is recommended that the Project implement walkways that are ADA compliant along its frontages to Reed Avenue and College Driveway.
- It is recommended that the Project implement a Class II Bike Lane along its frontage to Reed Avenue.
- Based on the Fresno COG model run, the Project is anticipated to generate an average trip length of 5.99 miles and thus a total VMT of 3,660 (5.99 miles per trip x 611 daily trips = 3,660 total VMT).
- Under this scenario, the intersections of Reed Avenue and College Driveway and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.
  - Reed Avenue / College Driveway
    - Modify the eastbound left-right lane to a left-turn lane;
    - Add an eastbound right-turn lane;
    - Modify the southbound through-right lane to a through lane;
    - Add a southbound right-turn lane; and
    - Modify the intersection to accommodate the added lanes.
  - Reed Avenue / Manning Avenue
    - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
    - Modify the traffic signal to accommodate the added lane.

Near Term No Project Traffic Conditions

- The total trip generation for the Near Term Projects is 21,216 weekday daily trips, 2,131 weekday PM peak hour trips and 1,447 weekend PM peak hour trips.
- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.
  - Reed Avenue / South Avenue
    - Implement all-way stop control.
  - Reed Avenue / Parlier Avenue
    - Modify the intersection to accommodate a single-lane roundabout.
  - Reed Avenue / College Driveway
    - Modify the eastbound left-right lane to a left-turn lane;
    - Add an eastbound right-turn lane;
    - Modify the southbound through-right lane to a through lane;
    - Add a southbound right-turn lane; and
    - Modify the intersection to accommodate the added lanes.
  - Reed Avenue / Manning Avenue
    - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
    - Modify the traffic signal to accommodate the added lane.

Near Term plus Project Traffic Conditions

- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during the weekday PM peak period. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.
  - Reed Avenue / South Avenue
    - Implement all-way stop control.
  - Reed Avenue / Parlier Avenue
    - Modify the intersection to accommodate a single-lane roundabout.
  - Reed Avenue / College Driveway
    - Modify the eastbound left-right lane to a left-turn lane;
    - Add an eastbound right-turn lane;
    - Modify the two-way left-turn lane on the south leg to a northbound left-turn lane;
    - Modify the southbound through-right lane to a through lane;
    - Add a southbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing in all directions;
    - Modify the intersection to accommodate the added lanes; and
    - Shift the center of the intersection approximately 50 to 100 feet north of its current location.
  - Reed Avenue / Manning Avenue
    - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue and
    - Modify the traffic signal to accommodate the added lane.

Cumulative Year 2040 No Project Traffic Conditions

- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during one or both PM peak periods. For the intersections of Reed Avenue and South Avenue and Reed Avenue and Parlier Avenue, two options for improvement were considered. The recommended improvements for each option along with the recommended improvements to improve the LOS at the intersections projected to exceed their LOS threshold are described below. It is recommended that the following improvements be considered for implementation by the City on a project by project assessment as cumulative impacts develop.
  - Reed Avenue / South Avenue
    - Signalized Option
      - Modify the westbound left-right lane to a left-turn lane;
      - Add a westbound right-turn lane;
      - Modify the northbound through-right lane to a through lane;
      - Add a northbound right-turn lane;
      - Add a southbound left-turn lane;
      - Modify the southbound left-through lane to a through lane;
      - Signalize the intersection with protective left-turn phasing in all directions; and Modify the intersection to accommodate the added lanes.
    - Roundabout Option
      - Modify the intersection to accommodate a single-lane roundabout.
  - Reed Avenue / Parlier Avenue
    - Signalized Option
      - Add an eastbound left-turn lane;
      - Modify the eastbound left-through-right lane to a through-right lane;
      - Modify the westbound left-through lane to a left-turn lane;
      - Modify the westbound right-turn lane to a through-right lane;
      - Add a northbound left-turn lane;
      - Modify the northbound left-through lane to a through lane;
      - Add a southbound left-turn lane;
      - Modify the southbound left-through lane to a through-right lane;
      - Signalize the intersection with protective left-turn phasing in all directions; and
      - Modify the intersection to accommodate the added lanes.
    - Roundabout Option
      - Modify the westbound left-through lane to a left-through-right lane;
      - Remove the westbound right-turn lane; and
      - Modify the intersection to accommodate a single-lane roundabout.

- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the two-way left-turn lane on the south leg to a northbound left-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing in all directions;
  - Modify the intersection to accommodate the added lanes; and
  - Shift the center of the intersection approximately 50 to 100 feet north of its current location.
- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
  - Add a second westbound left-turn lane;
  - Modify the northbound right-turn lane to a through-right lane;
  - Implement overlap phasing of the southbound right-turn with the eastbound left-turn phase and prohibit eastbound to westbound U-turns; and
  - Modify the traffic signal to accommodate the added lanes and phasing overlap.

- If the City established LOS D as the criteria of significance for Manning Avenue between Reed Avenue and Sunset Avenue, Manning Avenue could remain a two-lane major arterial divided by a two-way left-turn lane with 5-foot bike lanes and 8-foot on-street parking. By retaining the bike lanes and on-street parking, the City will provide its residents the opportunity to continue utilizing alternative modes of transportation, promote a healthier environment and provide residents along this segment of Manning Avenue to utilize on-street parking. Therefore, if LOS D is used as the criteria of significance for this intersection, it is recommended that the following improvements be implemented.
  - Reed Avenue / Manning Avenue
    - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
    - Modify the northbound right-turn lane to a through-right lane; and
    - Modify the traffic signal to accommodate the added lanes.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersections of Reed Avenue and South Avenue, Reed Avenue and Parlier Avenue, Reed Avenue and College Driveway, and Reed Avenue and Manning Avenue are projected to exceed their LOS threshold during one or both PM peak periods. For the intersections of Reed Avenue and South Avenue and Reed Avenue and Parlier Avenue, two options for improvement were considered. The recommended improvements for each option along with the recommended improvements to improve the LOS at the intersections projected to exceed their LOS threshold are described below. It is recommended that the following improvements be considered for implementation by the City on a project by project assessment as cumulative impacts develop.

- Reed Avenue / South Avenue
  - Signalized Option
    - Modify the westbound left-right lane to a left-turn lane;
    - Add a westbound right-turn lane;
    - Modify the northbound through-right lane to a through lane;
    - Add a northbound right-turn lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through lane to a through lane;
    - Signalize the intersection with protective left-turn phasing in all directions; and
    - Modify the intersection to accommodate the added lanes.
  - Roundabout Option
    - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / Parlier Avenue
  - Signalized Option
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Modify the westbound left-through lane to a left-turn lane;
    - Modify the westbound right-turn lane to a through-right lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through lane to a through lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through lane to a through-right lane;
    - Signalize the intersection with protective left-turn phasing in all directions; and
    - Modify the intersection to accommodate the added lanes.
  - Roundabout Option
    - Modify the westbound left-through lane to a left-through-right lane;
    - Remove the westbound right-turn lane; and
    - Modify the intersection to accommodate a single-lane roundabout.
- Reed Avenue / College Driveway
  - Modify the eastbound left-right lane to a left-turn lane;
  - Add an eastbound right-turn lane;
  - Modify the two-way left-turn lane on the south leg to a northbound left-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing in all directions;
  - Modify the intersection to accommodate the added lanes; and
  - Shift the center of the intersection approximately 50 to 100 feet north of its current location.

- Reed Avenue / Manning Avenue
  - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
  - Add a second westbound left-turn lane;
  - Modify the northbound right-turn lane to a through-right lane;
  - Add a second southbound through lane;
  - Implement overlap phasing of the southbound right-turn with the eastbound left-turn phase and prohibit eastbound to westbound U-turns; and
  - Modify the traffic signal to accommodate the added lanes and phasing overlap.

- If the City established LOS D as the criteria of significance for Manning Avenue between Reed Avenue and Sunset Avenue, Manning Avenue could remain a two-lane major arterial divided by a two-way left-turn lane with 5-foot bike lanes and 8-foot on-street parking. By retaining the bike lanes and on-street parking, the City will provide its residents the opportunity to continue utilizing alternative modes of transportation, promote a healthier environment and provide residents along this segment of Manning Avenue to utilize on-street parking. Therefore, if LOS D is used as the criteria of significance for this intersection, it is recommended that the following improvements be implemented.
  - Reed Avenue / Manning Avenue
    - Add a second eastbound left-turn lane with a receiving lane north of Manning Avenue;
    - Modify the northbound right-turn lane to a through-right lane; and
    - Modify the traffic signal to accommodate the added lanes.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Project's Equitable Fair Share

- It is recommended that the Project contribute its equitable fair share as listed in Table X for the future improvements necessary to maintain an acceptable LOS.

Study Participants

JLB Traffic Engineering, Inc. Personnel:

Jose Luis Benavides, PE, TE	Project Manager
Susana Maciel, EIT	Project Engineer
Matthew Arndt, EIT	Engineer I/II
Jove Alcazar, EIT	Engineer I/II
Carlos Ayala-Magana	Engineer I/II
Javier Rios	Engineer I/II
Jesus Garcia	Engineer I/II
Dennis Wynn	Sr. Engineering Technician
Adrian Benavides	Engineering Aide
Justin Barnett	Engineering Aide
Michael McConnell	Engineering Aide
Christian Sanchez	Engineering Aide

Persons Consulted:

Scott B. Odell	Odell Planning & Research, Inc.
Marilu Morales	City of Reedley
Brian Spaunhurst	County of Fresno
David Padilla	Caltrans
Kai Han	Fresno COG
Lang Yu	Fresno COG

References

1. City of Reedley, *2030 General Plan*.
2. County of Fresno, 2000 General Plan.
3. Fresno Council of Governments, *Fresno County SB 743 Implementation Regional Guidelines*, July 2020.
4. *Guide for the Preparation of Traffic Impact Studies*, Caltrans, dated December 2002.
5. *Trip Generation,* 10th Edition, Washington D.C., Institute of Transportation Engineers, 2017.
6. *2014 California Manual on Uniform Traffic Control Devices*, Caltrans, March 27, 2020.
7. *Roundabouts: An Informational Guide*. Transportation Research Board, *Roundabouts: An Informational Guide*, *Second Edition*, NCHRP Report 672.
8. State Center Community College District, *2019-2030 Districtwide Facilities Master Plan Update*, November 5, 2019.

Appendix A: Scope of Work

January 6, 2020

Marilu Morales
City Engineer
City of Reedley
1717 9th Street
Reedley, CA 93654

Via E-mail Only: marilu.morales@reedley.ca.gov

Subject: ***Draft Scope of Work for the Preparation of a Traffic Impact Analysis for the proposed State Center Community College District Reedley College Performing Arts Center Project in the City of Reedley (JLB Project 014-006)***

Dear Mrs. Morales,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a Traffic Impact Analysis (TIA) for the State Center Community College District (District) Reedley College Performing Arts Center (Project) located on the northwest quadrant of Reed Avenue and Kip Patrick Drive in the City of Reedley. An aerial of the Project site is presented in Exhibit A, while the latest Project Site Plan is presented in Exhibit B.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. In order to evaluate the on-site and off-site traffic impacts of the proposed Project, JLB proposes the following Draft Scope of Work.

Scope of Work

- JLB will request from the Fresno Council of Governments (Fresno COG) traffic forecast model runs for the Project (Select Zone Analysis) which will include the Project and the streets to be analyzed. The Fresno COG traffic models will be used to forecast traffic volumes for the Base Year 2019 and Cumulative Year 2040 scenarios.
- JLB will evaluate onsite circulation and provide recommendations as necessary to improve circulation to and within the Project site. Particular attention will be paid to conflicting traffic movements, location of local roadways to major streets, and onsite vehicular ingress and egress routes.
- JLB will prepare California Manual on Uniform Traffic Control Devices (CA MUTCD) Warrant 3 “Peak Hour” under all study scenarios.
- JLB will evaluate existing and forecast future levels of service (LOS) at the study intersections and/or segment(s). JLB will use HCM 6th Edition or HCM 2000 methodologies, as appropriate, within Synchro software to perform this analysis for the PM peak hour. JLB will identify the cause(s) of poor LOS and propose improvement measures (if any).
- As necessary, JLB will obtain recent traffic counts or schedule and conduct new traffic counts at the study facility(ies).

- JLB will perform a site visit to observe existing traffic conditions, especially during the PM peak hours. Existing roadway conditions including geometrics and traffic controls will be verified.
- JLB will forecast trip distribution based on turn count information, the Fresno COG Project Select Zone, population densities and knowledge of the existing and planned circulation network in the vicinity of the Project.
- JLB will conduct an evaluation of the existing and planned circulation network to include, the study intersections, roadway segments as well as any other facilities agreed upon after review of the Scope of Work.
- JLB will qualitatively analyze existing and planned transit routes in the vicinity of the Project.
- JLB will qualitatively analyze existing and planned bikeways in the vicinity of the Project.
- JLB will qualitatively analyze existing and planned walkways in the vicinity of the Project.
- JLB will provide a table with the Project's pro-rata fair share allocation to improvement measures identified (if any) that are not currently funded by an existing funding source.

Study Scenarios:

1. Existing Traffic Conditions with proposed improvement measures (if any);
2. Near Term No Project Traffic Conditions with proposed Improvement measures (if any);
3. Near Term plus Project Traffic Conditions with proposed mitigation measures (if any);
4. Cumulative Year 2040 No Project Traffic Conditions with proposed improvement measure (if any); and
5. Cumulative Year 2040 plus Project Traffic Conditions with proposed mitigation measures (if any).

Weekday peak hours to be analyzed (Monday, Tuesday or Wednesday Only):

1. 4 - 6 PM peak hour

Weekend peak hours to be analyzed (Saturday Only):

1. 4 - 6 PM peak hour

Study Intersections:

1. Reed Avenue / South Avenue
2. Reed Avenue / Parlier Avenue
3. Reed Avenue / Reedley College Northern Driveway (180 feet north of Kip Patrick Drive)

Queuing analysis is included in the proposed scope of work for the study intersections listed above under all study scenarios. This analysis will be utilized to recommend minimum storage lengths for left-turn and right-turn lanes at all study intersections.

Study Segments:

1. None

Project Only Trip Assignment to the following State Facilities:

1. None

Project Trip Generation

Trip generation rates for the proposed Project were obtained from the Transportation Study for the Ford Theaters Project prepared by Gibson Transportation Consulting, Inc. dated June 2014. The Study presents a PM peak hour trip generation rate of 0.33 with an 85/15 inbound and outbound split. The Daily rate was derived based on information provided by the District that the Project would serve as a venue for up to three (3) events during a day. Table I presents the trip generation for the proposed Project with trip generation rates for a Performing Arts Center. At buildout, the proposed Project is estimated to generate a maximum of 611 daily trips, 0 AM peak hour trips and 182 PM peak hour driveway trips.

Table I: Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*
Performing Arts Center	550	seats	1.11**	611	0.00	50	50	0	0	0	0.33*	85*	15*	155	27	182
Total Driveway Trips				**611**				**0**	**0**	**0**				**155**	**27**	**182**

Note: * = Trip Generation rate and inbound and outbound split based on the Transportation Study for the Ford Theaters Project prepared by Gibson Transportation Consulting, Inc. dated June 2014
** = Trip Generation rate based on information provided by the District.

Near Term Projects to be Included

Based on our local knowledge of the study area, JLB proposes to include projects in the vicinity of the proposed Project under the Near Term plus Project Analysis. The projects proposed to be included in the Near Term Scenario are:

Project Name	General Location
1. TT 5263	NWQ of North Avenue and Buttonwillow Avenue
2. TT 6206	NWQ of Olson Avenue and Frankwood Avenue
3. TT 6178	NEQ of South Avenue and Frankwood Avenue
4. TT 6196	NEQ of Reed Avenue and Parlier Avenue
5. TT 6229	SEQ of Springfield Avenue and Buttonwillow Avenue
6. El Valle Apartments	NWQ of Dinuba Avenue and Hemlock Avenue
7. Kings River Village	SEQ of Dinuba Avenue and Buttonwillow Avenue
8. Reedley Family Apartments	SEQ of Dinuba Avenue and Frankwood Avenue
9. SRHS & SRES	NEQ of Floral Avenue and Frankwood Avenue
10. United Health Centers Medical Clinic	NEQ of Manning Avenue and Buttonwillow Avenue
11. Trailside Terrace	SEQ of North Avenue and Reed Avenue
12. Fino Estates	NEQ of Frankwood Avenue and Parlier Avenue

Other Near Term Projects the City, County or Caltrans has knowledge of and for which it is anticipated that said project(s) is/are projected to be whole or partially built by the Near Term Project Year 2025, the City, County or Caltrans, as appropriate, would provide JLB with project details. Near term project details include project description, location, proposed land uses with breakdowns and type of residential units and amount of square footages for non-residential uses.

The Scope of Work is based on our understanding of this Project and our experience with similar TIAs. We kindly ask that responsible agencies submit comments to the Scope of Work by January 27, 2020. If you have any questions or require additional information, please contact me by phone at (559) 664-3159 or by email at jgarcia@JLBtraffic.com.

Sincerely,

Jesus Garcia

Jesus Garcia
Engineer I/II

cc: David Padilla, Caltrans District 6
Brian Spaunhurst, County of Fresno
Susana Maciel, JLB Traffic Engineering, Inc.

JLB TRAFFIC ENGINEERING, INC.
www.JLBtraffic.com
info@JLBtraffic.com
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991

Exhibit A – Project Site Aerial

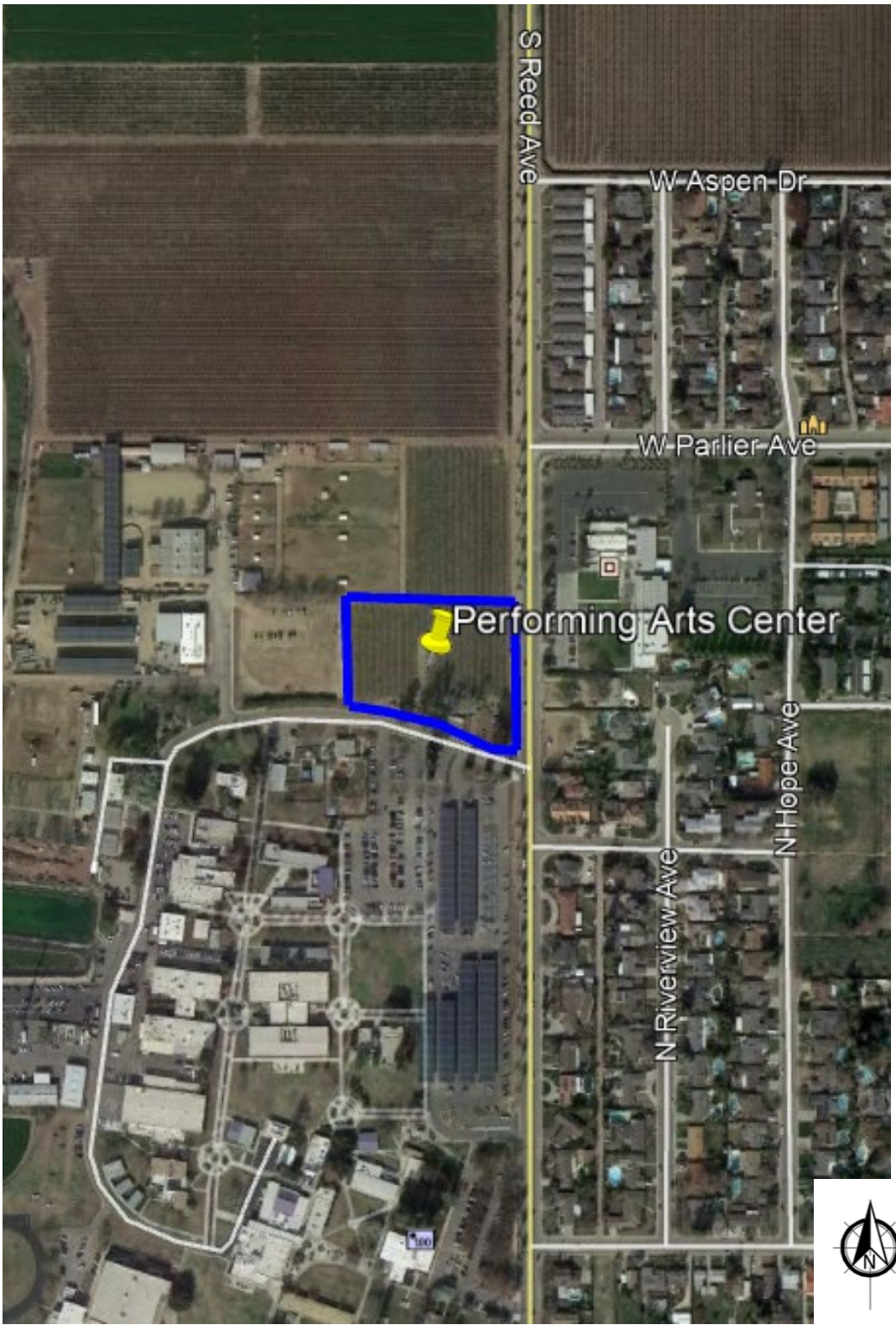
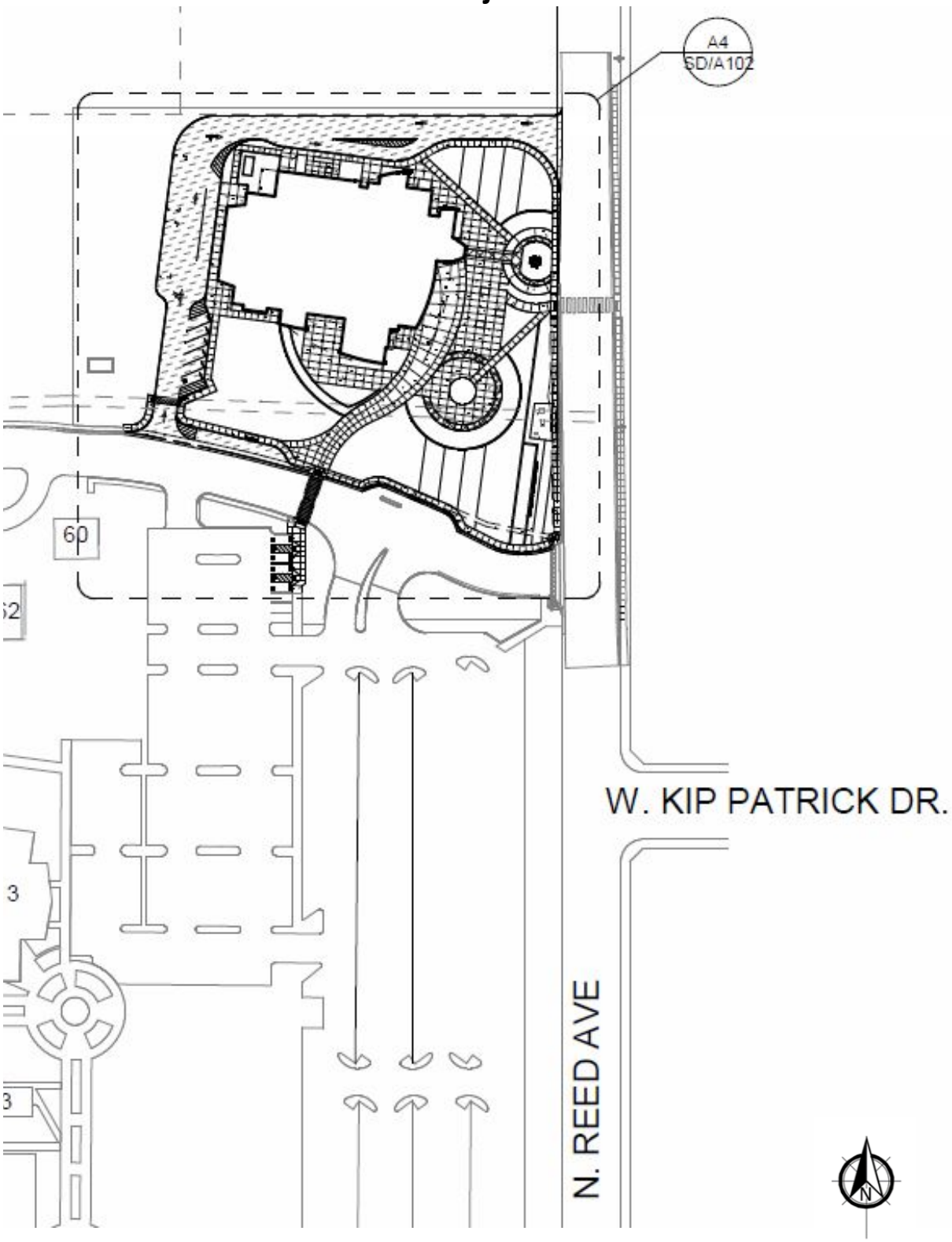


Exhibit B – Project Site Plan



Susana Maciel

From: Morales, Marilu <Marilu.Morales@reedley.ca.gov>
Sent: Thursday, January 23, 2020 9:25 AM
To: Susana Maciel
Cc: david.padilla@dot.ca.gov; Spaunhurst, Brian (bspaunhurst@fresnocountyca.gov); Jesus Garcia
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Hi Susana,

After reviewing the Draft Scope of Work we have the following comments:

- Scope of work (first bullet point): For the traffic forecast models which Fresno COG will be requested to run, will they be completed as LOS/Trip Generation or VMT (or both)? The fourth bullet point would seem to indicate that just LOS/Trip Gen will be analyzed, but VMT is very applicable to a regional institution of this nature and could be very helpful.
- Scope of Work (second and third to last bullet points): Analysis should also include the Reedley Parkway which serves as a/the major active transportation corridor adjacent to the college.
- Peak Hours: Should also include AM Peaks (7-9) for both Weekday and Weekend.
- Study Intersections: Should include (1) Reed Avenue/Manning Avenue and (2) Manning Ave/I Street.

Thank you for allowing us to have input on the scope of work!

Thanks,
Marilu S. Morales, PE
City Engineer
City of Reedley
1733 Ninth Street
Reedley, CA 93654
Phone: (559) 637-4200 Ext. 221
Fax: (559) 637-2139
www.reedley.com
marilu.morales@reedley.ca.gov

From: Susana Maciel [mailto:smaciel@jlbtraffic.com]
Sent: Tuesday, January 21, 2020 4:54 PM
To: Morales, Marilu <Marilu.Morales@reedley.ca.gov>
Cc: david.padilla@dot.ca.gov; Spaunhurst, Brian (bspaunhurst@fresnocountyca.gov) <bspaunhurst@fresnocountyca.gov>; Jesus Garcia <jgarcia@jlbtraffic.com>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good afternoon, Ms. Morales,

I hope you are doing well.

I simply wanted to touch base with you regarding this Draft Scope of Work review. Please feel welcome to contact me if I can help answer any questions.

I look forward to hearing from you soon.

Best,

Susana Maciel

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

From: Susana Maciel
Sent: Monday, January 06, 2020 4:52 PM
To: marilu.morales@reedley.ca.gov
Cc: David Padilla (dave_padilla@dot.ca.gov) <dave_padilla@dot.ca.gov>; Spaunhurst, Brian (bspaunhurst@fresnocountyca.gov) <bspaunhurst@fresnocountyca.gov>; Jesus Garcia <jgarcia@jlbtraffic.com>
Subject: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good afternoon, Ms. Morales,

I hope your week is off to a great start.

JLB has prepared a Draft Scope of Work for the preparation of a Traffic Impact Analysis for the State Center Community College District's proposed Reedley College Performing Arts Center Project located in the City of Reedley.

I kindly ask that you and other responsible agencies take some time to review the letter attached to this email and provide any comments by January 27, 2020. If you have no comments, please let me know as well.

If you have any questions or require any additional information, please feel welcome to contact me by phone at 559.317.6273 or by email at smaciel@jlbtraffic.com. I sincerely appreciate your time and attention to this matter and look forward to hearing from you soon.

Best,

Susana Maciel

Jesus Garcia

From: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Sent: Friday, January 24, 2020 11:03 AM
To: Susana Maciel; marilu.morales@reedley.ca.gov
Cc: Spaunhurst, Brian (bspaunhurst@fresnocountyca.gov); Jesus Garcia
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Hello Susana,

We no concerns with the SOW.

Thank you,

DAVID PADILLA
Associate Transportation Planner
Caltrans
Office of Planning & Local Assistance
1352 W. Olive Avenue
Fresno, CA 93778-2616
Office: (559) 444-2493, Fax: (559) 445-5875

From: Susana Maciel <smaciel@jlbtraffic.com>
Sent: Monday, January 6, 2020 4:52 PM
To: marilu.morales@reedley.ca.gov
Cc: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Spaunhurst, Brian (bspaunhurst@fresnocountyca.gov) <bspaunhurst@fresnocountyca.gov>; Jesus Garcia <jgarcia@jlbtraffic.com>
Subject: Reedley College Performing Arts Center TIA: Draft Scope of Work

---

Good afternoon, Ms. Morales,

I hope your week is off to a great start.

JLB has prepared a Draft Scope of Work for the preparation of a Traffic Impact Analysis for the State Center Community College District's proposed Reedley College Performing Arts Center Project located in the City of Reedley.

I kindly ask that you and other responsible agencies take some time to review the letter attached to this email and provide any comments by January 27, 2020. If you have no comments, please let me know as well.

If you have any questions or require any additional information, please feel welcome to contact me by phone at 559.317.6273 or by email at smaciel@jlbtraffic.com. I sincerely appreciate your time and attention to this matter and look forward to hearing from you soon.

Susana Maciel

From: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Sent: Wednesday, February 05, 2020 10:07 AM
To: Susana Maciel
Cc: Hensley, Gloria; Nakagawa, Wendy
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good Morning Susie,

Since the maps you provided did not yield any intersections that were on the fence as far as exceeding our thresholds, your proposal to incorporate the expanded language in the TIA is acceptable.

Respectfully,

Brian Spaunhurst | **Senior Planner**
Department of Public Works and Planning | Design Division
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

From: Susana Maciel <smaciel@jlbtraffic.com>
Sent: Wednesday, February 5, 2020 9:52 AM
To: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Hi Brian,

I appreciate your comments.

Would it be acceptable to the County if the comment to expand on the Project description to incorporate information from the operational statement was incorporated in to the TIA Report?

Best,

Susana Maciel

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

From: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Sent: Wednesday, February 05, 2020 7:37 AM

To: Susana Maciel <smaciel@jlbtraffic.com>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Susie,

I am following up after reading Dirk's comments for the FPU project. Please disregard my comment pertaining to the "Existing Plus Project". I will review the maps you provided to ensure there are no additional intersections or segments we would like to add. In the meantime, please update the language in your project description to incorporate information from the operational statement.

Respectfully,

Brian Spaunhurst | **Senior Planner**
Department of Public Works and Planning | **Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

From: Spaunhurst, Brian
Sent: Wednesday, February 5, 2020 7:21 AM
To: Susana Maciel <smaciel@jlbtraffic.com>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good Morning Susie,

If I am to understand your statement correctly, are you indicating that there is no anticipated difference between "existing" and "existing plus project" trips?

My original comments were:

County Transportation Planning has reviewed the DSOW and we have the following comments:

- Please provide an updated DSOW that includes:
  - Trip Distribution Percentages (map)
  - Addition of "Existing Plus Project" Study Scenario
  - Project Description that incorporates information from the project's operational statement

County Roads Maintenance and Operations may have additional comments to provide. In order to limit requested revisions, please defer your DSOW resubmittal until confirmation is received from County RMO.

I was asking if you could provide an updated draft scope of work that reflects the language highlighted above.

Respectfully,

Brian Spaunhurst | **Senior Planner**
Department of Public Works and Planning | **Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721

Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

From: Susana Maciel <smaciel@jlbtraffic.com>
Sent: Tuesday, February 4, 2020 2:31 PM
To: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Hi Brian,

JLB did not request a Base Year 2020 plus Project Select Zone model run from Fresno COG since we do not anticipate any changes to the existing roadway network between scenarios. As such, the Project Select Zone model runs under both scenarios would be the same.

Can you please clarify the second part of your email?

Best,

Susana Maciel

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

From: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Sent: Monday, February 03, 2020 8:21 AM
To: Susana Maciel <smaciel@jlbtraffic.com>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good Morning Susie,

Do you have the model plots for the existing plus project scenario? Also please provide the updated DSOW that includes the language requested in my original comments.

Respectfully,

Brian Spaunhurst | **Senior Planner**
Department of Public Works and Planning | Design Division
2220 Tulare St. 7th Floor Fresno, CA 93721

Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

From: Susana Maciel <smaciel@jlbtraffic.com>
Sent: Thursday, January 30, 2020 9:59 AM
To: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good morning, Brian,

Attached are the Fresno COG Project Select Zone model plots for this Project. Please let me know if I can provide you with anything else.

Best,

Susana Maciel

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

From: Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
Sent: Monday, January 27, 2020 11:31 AM
To: Susana Maciel <smaciel@jlbtraffic.com>
Cc: Hensley, Gloria <ghensley@fresnocountyca.gov>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
Subject: RE: Reedley College Performing Arts Center TIA: Draft Scope of Work

Good Morning Susie,

County Transportation Planning has reviewed the DSOW and we have the following comments:

- Please provide an updated DSOW that includes:
  - Trip Distribution Percentages (map)
  - Addition of "Existing Plus Project" Study Scenario
  - Project Description that incorporates information from the project's operational statement

County Roads Maintenance and Operations may have additional comments to provide. In order to limit requested revisions, please defer your DSOW resubmittal until confirmation is received from County RMO.

Respectfully,

Brian Spaunhurst | **Senior Planner**

Department of Public Works and Planning | Design Division
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

From: Susana Maciel <smaciel@jlbtraffic.com>
Sent: Monday, January 6, 2020 4:52 PM
To: marilu.morales@reedley.ca.gov
Cc: David Padilla (dave_padilla@dot.ca.gov) <dave_padilla@dot.ca.gov>; Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>; Jesus Garcia <jgarcia@jlbtraffic.com>
Subject: Reedley College Performing Arts Center TIA: Draft Scope of Work

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Good afternoon, Ms. Morales,

I hope your week is off to a great start.

JLB has prepared a Draft Scope of Work for the preparation of a Traffic Impact Analysis for the State Center Community College District's proposed Reedley College Performing Arts Center Project located in the City of Reedley.

I kindly ask that you and other responsible agencies take some time to review the letter attached to this email and provide any comments by January 27, 2020. If you have no comments, please let me know as well.

If you have any questions or require any additional information, please feel welcome to contact me by phone at 559.317.6273 or by email at smaciel@jlbtraffic.com. I sincerely appreciate your time and attention to this matter and look forward to hearing from you soon.

Best,

Susana Maciel

JLB TRAFFIC ENGINEERING, INC.

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Direct: (559) 317-6273
Office: (559) 570-8991
Cell: (559) 232-9474
www.JLBtraffic.com

Appendix B: Traffic Counts

JLB Traffic Engineering, Inc.

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991
Traffic Engineering, Transportation Planning & Parking Solutions
www.JLBtraffic.com

File Name : Reed Ave at South Ave
Site Code : 00000000
Start Date : 1/14/2020
Page No : 1

Groups Printed- Unshifted

	REED Southbound		SOUTH Westbound		REED Northbound		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	7	56	16	8	72	6	165
07:15 AM	10	102	19	8	60	9	208
07:30 AM	11	151	30	10	62	12	276
07:45 AM	16	154	42	20	61	3	296
Total	44	463	107	46	255	30	945
08:00 AM	7	81	18	11	73	13	203
08:15 AM	4	65	14	1	43	6	133
08:30 AM	8	63	13	5	34	4	127
08:45 AM	7	79	15	6	55	7	169
Total	26	288	60	23	205	30	632
******							
04:00 PM	6	82	8	6	81	14	197
04:15 PM	18	130	12	8	74	20	262
04:30 PM	16	93	12	9	67	16	213
04:45 PM	10	86	6	16	83	15	216
Total	50	391	38	39	305	65	888
05:00 PM	8	87	13	5	69	17	199
05:15 PM	11	92	19	3	88	12	225
05:30 PM	13	101	14	9	41	10	188
05:45 PM	13	95	23	6	45	12	194
Total	45	375	69	23	243	51	806
Grand Total	165	1517	274	131	1008	176	3271
Apprch %	9.8	90.2	67.7	32.3	85.1	14.9	
Total %	5	46.4	8.4	4	30.8	5.4	

JLB Traffic Engineering, Inc.

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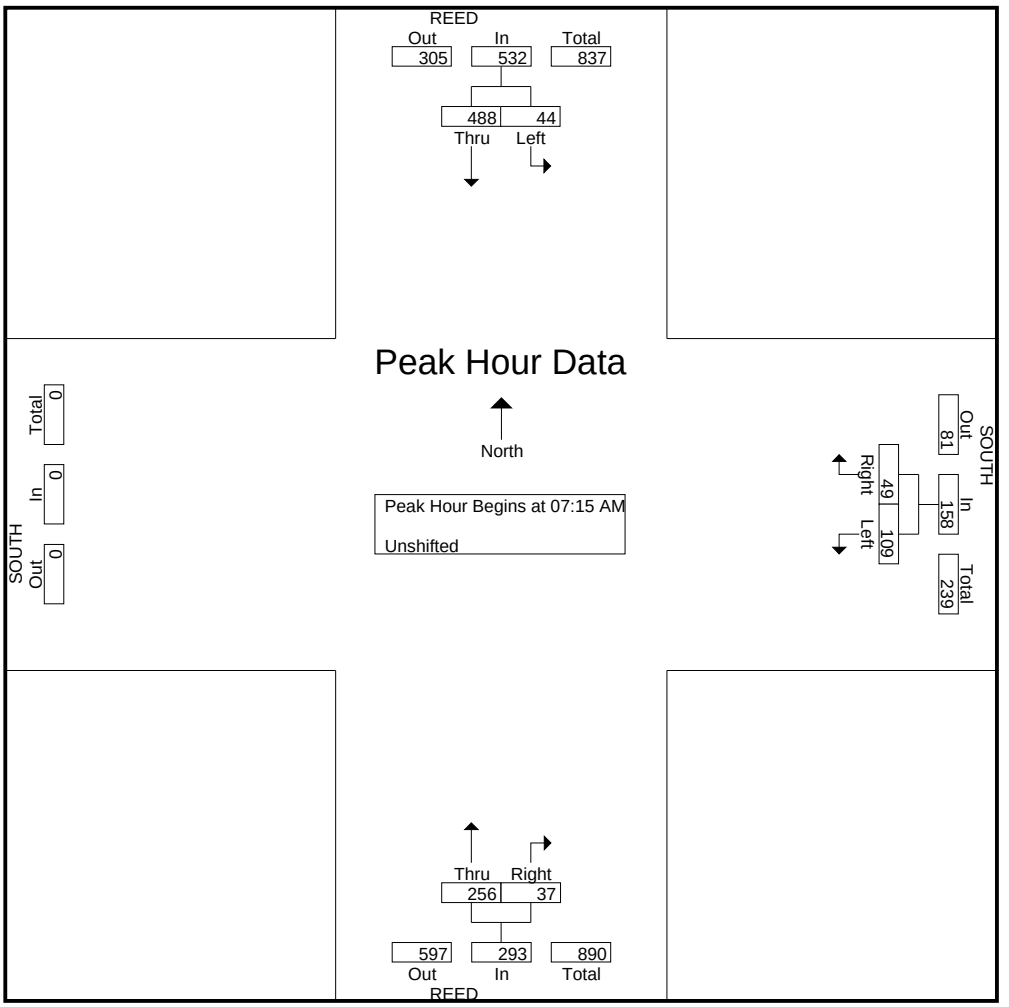
File Name : Reed Ave at South Ave
Site Code : 00000000
Start Date : 1/14/2020
Page No : 2

	REED Southbound			SOUTH Westbound			REED Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	10	102	112	19	8	27	60	9	69	208
07:30 AM	11	151	162	30	10	40	62	12	74	276
07:45 AM	**16**	**154**	**170**	**42**	**20**	**62**	61	3	64	**296**
08:00 AM	7	81	88	18	11	29	**73**	**13**	**86**	203
Total Volume	44	488	532	109	49	158	256	37	293	983
% App. Total	8.3	91.7		69	31		87.4	12.6		
PHF	.688	.792	.782	.649	.613	.637	.877	.712	.852	.830



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(559) 570-8991
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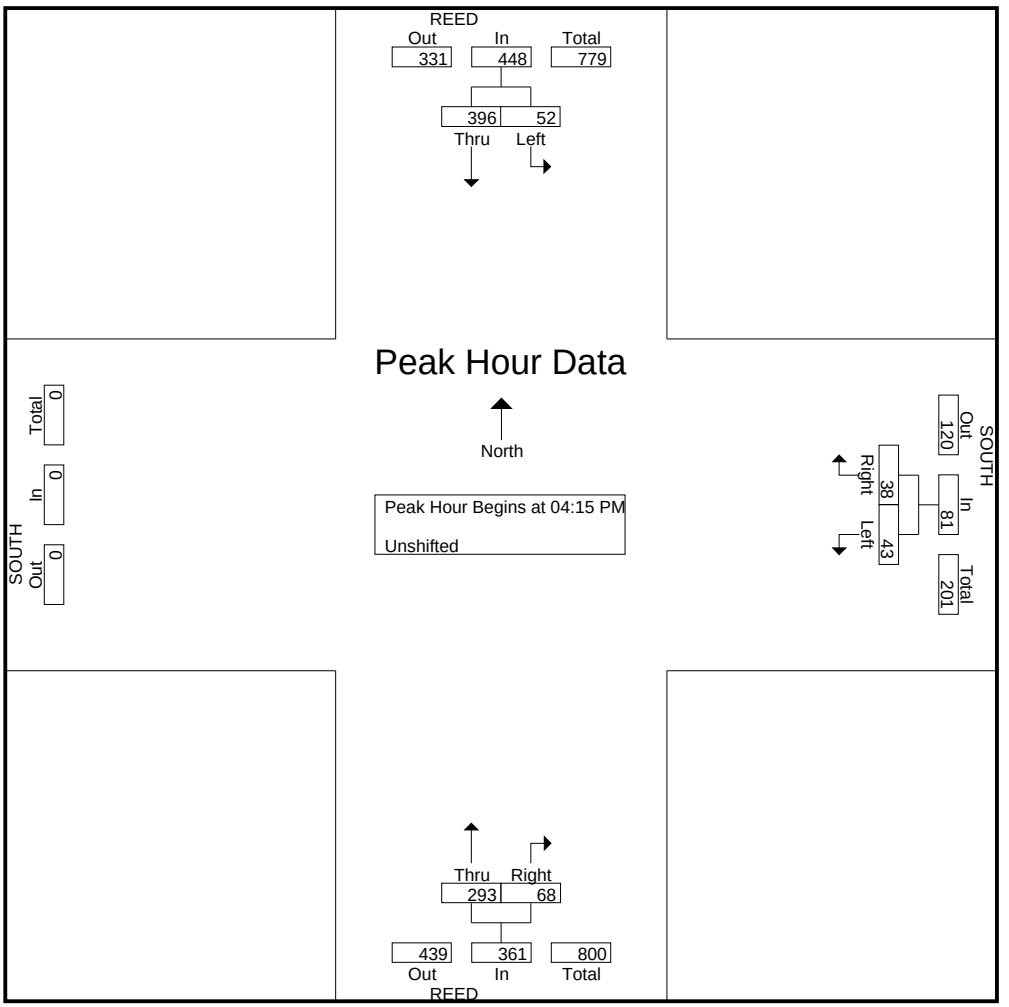
File Name : Reed Ave at South Ave
Site Code : 00000000
Start Date : 1/14/2020
Page No : 3

	REED Southbound			SOUTH Westbound			REED Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	**18**	**130**	**148**	12	8	20	74	**20**	94	**262**
04:30 PM	16	93	109	12	9	21	67	16	83	213
04:45 PM	10	86	96	6	**16**	**22**	**83**	15	**98**	216
05:00 PM	8	87	95	**13**	5	18	69	17	86	199
Total Volume	52	396	448	43	38	81	293	68	361	890
% App. Total	11.6	88.4		53.1	46.9		81.2	18.8		
PHF	.722	.762	.757	.827	.594	.920	.883	.850	.921	.849



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File Name : Reed at South 02.22.2020
Site Code : 00000000
Start Date : 2/22/2020
Page No : 1

Groups Printed- Unshifted

	REED Southbound				SOUTH Westbound				REED Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	49	6	0	55	7	8	0	15	2	50	0	52	122
04:15 PM	47	6	0	53	6	7	0	13	8	51	0	59	125
04:30 PM	72	9	0	81	3	10	0	13	9	60	0	69	163
04:45 PM	57	9	0	66	1	18	0	19	8	57	0	65	150
Total	225	30	0	255	17	43	0	60	27	218	0	245	560
05:00 PM	49	15	0	64	5	8	0	13	6	38	0	44	121
05:15 PM	53	8	0	61	1	10	0	11	3	32	0	35	107
05:30 PM	41	9	0	50	1	18	0	19	6	47	0	53	122
05:45 PM	46	7	0	53	10	11	0	21	9	39	0	48	122
Total	189	39	0	228	17	47	0	64	24	156	0	180	472
Grand Total	414	69	0	483	34	90	0	124	51	374	0	425	1032
Apprch %	85.7	14.3	0		27.4	72.6	0		12	88	0		
Total %	40.1	6.7	0	46.8	3.3	8.7	0	12	4.9	36.2	0	41.2	

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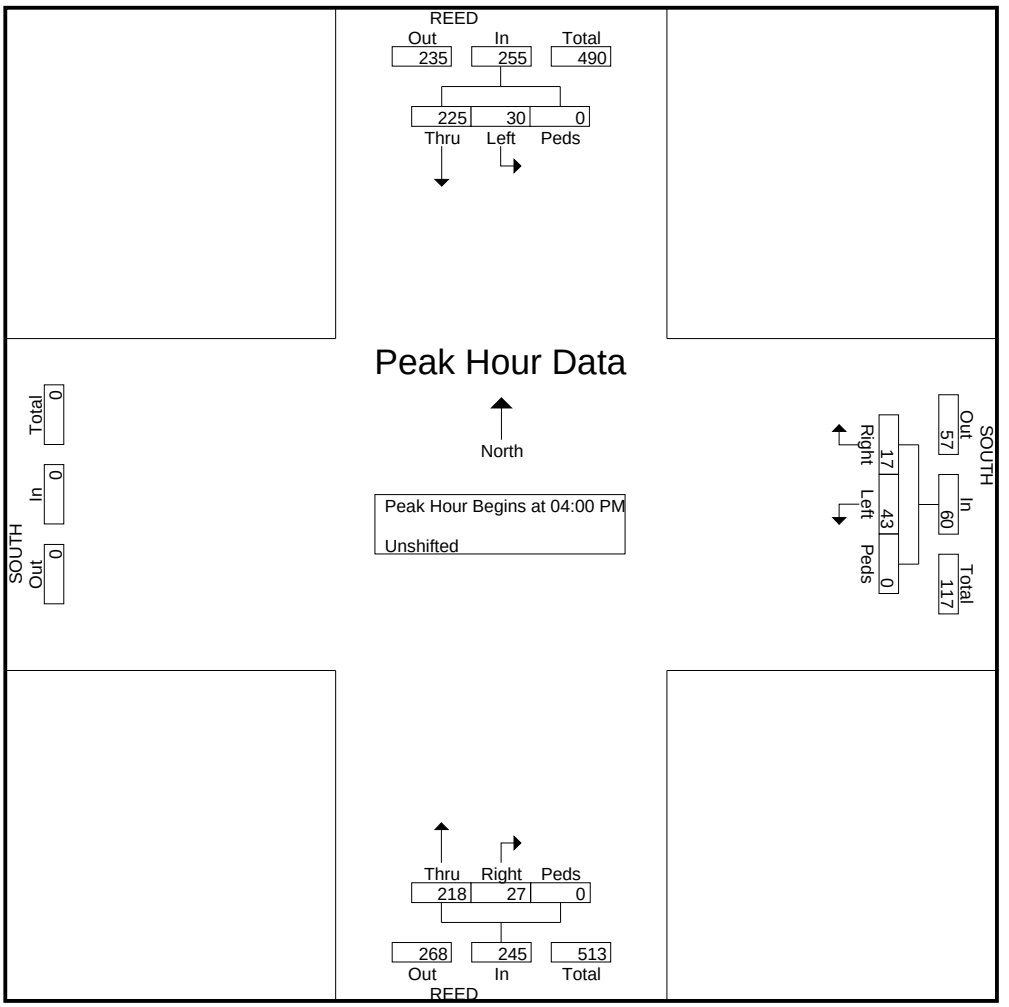
File Name : Reed at South 02.22.2020
Site Code : 00000000
Start Date : 2/22/2020
Page No : 2

	REED Southbound				SOUTH Westbound				REED Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	49	6	0	55	7	8	0	15	2	50	0	52	122
04:15 PM	47	6	0	53	6	7	0	13	8	51	0	59	125
04:30 PM	72	9	0	81	3	10	0	13	9	60	0	69	163
04:45 PM	57	9	0	66	1	18	0	19	8	57	0	65	150
Total Volume	225	30	0	255	17	43	0	60	27	218	0	245	560
% App. Total	88.2	11.8	0		28.3	71.7	0		11	89	0		
PHF	.781	.833	.000	.787	.607	.597	.000	.789	.750	.908	.000	.888	.859



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File Name : Reed Ave at Parlier Ave
Site Code : 00000000
Start Date : 1/15/2020
Page No : 1

Groups Printed- Unshifted

	REED Southbound		PARLIER Westbound			REED Northbound			
Start Time	Left	Thru	Left	Right	Peds	Thru	Right	Peds	Int. Total
07:00 AM	13	77	18	13	0	56	8	1	186
07:15 AM	3	112	22	10	0	66	10	0	223
07:30 AM	11	166	49	4	1	58	17	0	306
07:45 AM	19	184	44	12	0	51	15	2	327
Total	46	539	133	39	1	231	50	3	1042
08:00 AM	9	89	33	12	0	81	15	1	240
08:15 AM	4	80	13	2	0	61	5	0	165
08:30 AM	4	61	18	8	0	33	9	0	133
08:45 AM	6	96	23	3	0	51	16	1	196
Total	23	326	87	25	0	226	45	2	734
******									
04:00 PM	11	101	12	8	0	121	22	0	275
04:15 PM	16	98	14	10	0	76	24	4	242
04:30 PM	17	106	17	6	0	83	29	0	258
04:45 PM	11	97	16	12	0	86	27	1	250
Total	55	402	59	36	0	366	102	5	1025
05:00 PM	15	94	23	7	0	91	32	0	262
05:15 PM	21	86	22	11	0	72	20	0	232
05:30 PM	20	112	28	6	0	64	21	0	251
05:45 PM	18	120	14	8	0	72	22	0	254
Total	74	412	87	32	0	299	95	0	999
Grand Total	198	1679	366	132	1	1122	292	10	3800
Apprch %	10.5	89.5	73.3	26.5	0.2	78.8	20.5	0.7	
Total %	5.2	44.2	9.6	3.5	0	29.5	7.7	0.3	

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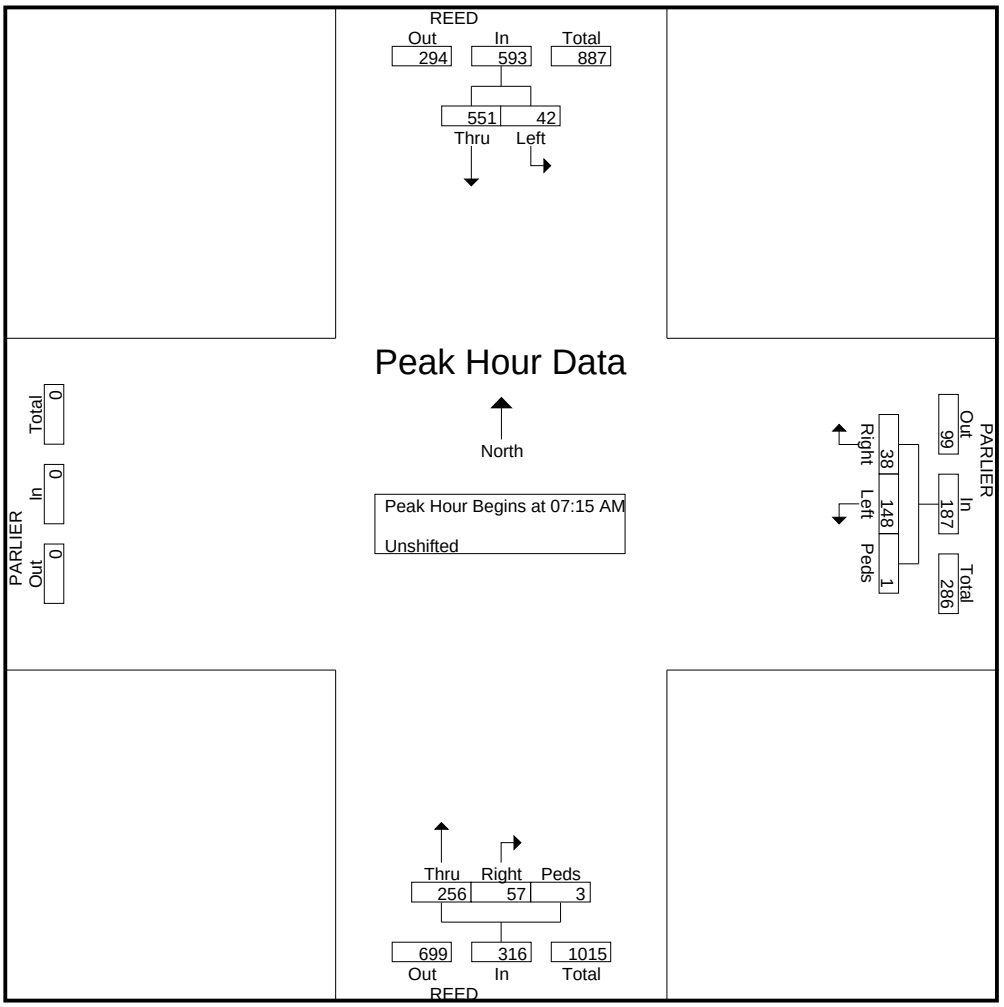
	REED Southbound			PARLIER Westbound				REED Northbound				
Start Time	Left	Thru	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 07:15 AM												
07:15 AM	3	112	115	22	10	0	32	66	10	0	76	223
07:30 AM	11	166	177	**49**	4	**1**	54	58	**17**	0	75	306
07:45 AM	**19**	**184**	**203**	44	**12**	0	**56**	51	15	**2**	68	**327**
08:00 AM	9	89	98	33	12	0	45	**81**	15	1	**97**	240
Total Volume	42	551	593	148	38	1	187	256	57	3	316	1096
% App. Total	7.1	92.9		79.1	20.3	0.5		81	18	0.9		
PHF	.553	.749	.730	.755	.792	.250	.835	.790	.838	.375	.814	.838



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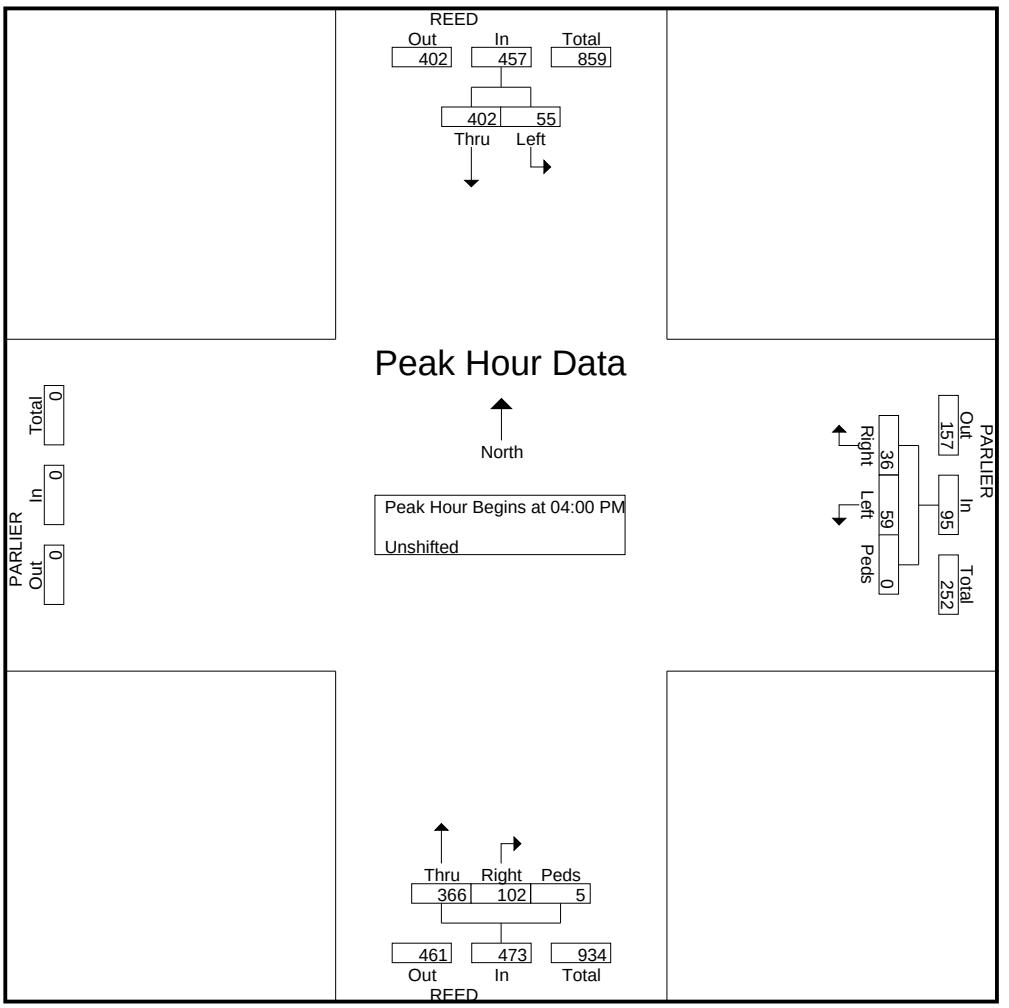
	REED Southbound			PARLIER Westbound				REED Northbound				
Start Time	Left	Thru	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 04:00 PM												
04:00 PM	11	101	112	12	8	0	20	**121**	22	0	**143**	**275**
04:15 PM	16	98	114	14	10	0	24	76	24	**4**	104	242
04:30 PM	**17**	**106**	**123**	**17**	6	0	23	83	**29**	0	112	258
04:45 PM	11	97	108	16	**12**	0	**28**	86	27	1	114	250
Total Volume	55	402	457	59	36	0	95	366	102	5	473	1025
% App. Total	12	88		62.1	37.9	0		77.4	21.6	1.1		
PHF	.809	.948	.929	.868	.750	.000	.848	.756	.879	.313	.827	.932



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File Name : Reed at Parlier
Site Code : 00000000
Start Date : 2/29/2020
Page No : 1

Groups Printed- Unshifted - Bank 1

	REED Southbound				PARLIER Westbound				REED Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	62	3	0	65	6	11	2	19	17	59	0	76	160
04:15 PM	73	10	0	83	4	13	0	17	13	52	0	65	165
04:30 PM	77	16	0	93	2	14	0	16	13	43	0	56	165
04:45 PM	71	11	0	82	3	16	0	19	20	44	2	66	167
Total	283	40	0	323	15	54	2	71	63	198	2	263	657
05:00 PM	92	10	0	102	10	20	0	30	20	44	0	64	196
05:15 PM	78	8	0	86	3	21	0	24	11	48	0	59	169
05:30 PM	56	6	0	62	2	18	0	20	18	40	0	58	140
05:45 PM	63	10	0	73	3	22	0	25	21	47	0	68	166
Total	289	34	0	323	18	81	0	99	70	179	0	249	671
Grand Total	572	74	0	646	33	135	2	170	133	377	2	512	1328
Apprch %	88.5	11.5	0		19.4	79.4	1.2		26	73.6	0.4		
Total %	43.1	5.6	0	48.6	2.5	10.2	0.2	12.8	10	28.4	0.2	38.6	
Unshifted	572	74	0	646	33	135	2	170	133	377	2	512	1328
% Unshifted	100	100	0	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0

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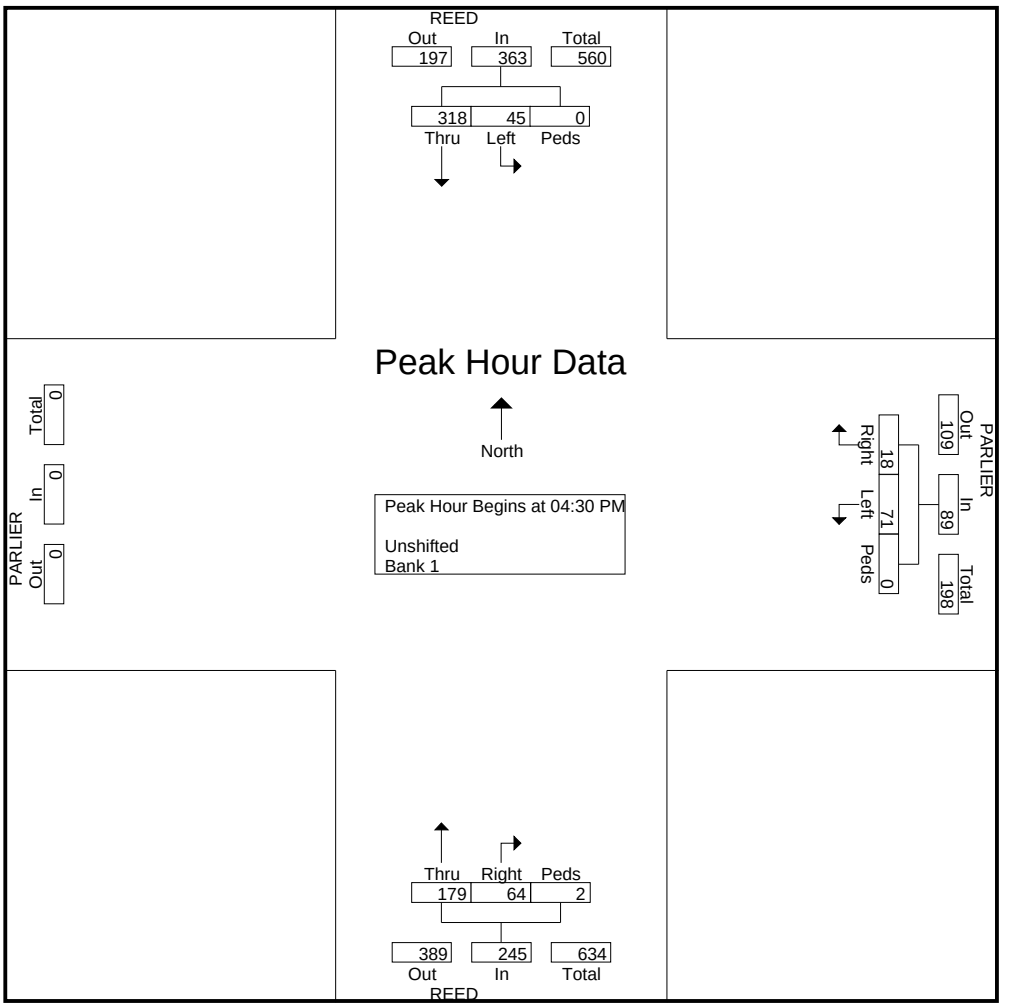
File Name : Reed at Parlier
Site Code : 00000000
Start Date : 2/29/2020
Page No : 2

	REED Southbound				PARLIER Westbound				REED Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	77	**16**	0	93	2	14	0	16	13	43	0	56	165
04:45 PM	71	11	0	82	3	16	0	19	**20**	44	**2**	**66**	167
05:00 PM	**92**	10	0	**102**	**10**	20	0	**30**	20	44	0	64	**196**
05:15 PM	78	8	0	86	3	**21**	0	24	11	**48**	0	59	169
Total Volume	318	45	0	363	18	71	0	89	64	179	2	245	697
% App. Total	87.6	12.4	0		20.2	79.8	0		26.1	73.1	0.8		
PHF	.864	.703	.000	.890	.450	.845	.000	.742	.800	.932	.250	.928	.889



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File Name : Reed Ave at Reedley College N Driveway
Site Code : 00000000
Start Date : 1/28/2020
Page No : 1

Groups Printed- Unshifted

	REED Southbound			REED Northbound		REEDLEY COLLEGE N DR Eastbound			
Start Time	Thru	Right	Peds	Left	Thru	Left	Right	Peds	Int. Total
07:00 AM	72	22	0	29	72	1	4	0	200
07:15 AM	110	39	0	51	77	0	7	0	284
07:30 AM	115	44	2	58	78	1	15	0	313
07:45 AM	111	99	1	84	85	2	43	0	425
Total	408	204	3	222	312	4	69	0	1222
08:00 AM	89	35	2	30	87	10	16	0	269
08:15 AM	77	22	0	19	71	4	5	0	198
08:30 AM	52	23	0	24	57	1	4	0	161
08:45 AM	84	30	1	22	49	11	18	1	216
Total	302	110	3	95	264	26	43	1	844
******									
04:00 PM	111	3	0	11	95	19	30	2	271
04:15 PM	114	4	1	3	110	20	13	0	265
04:30 PM	101	12	0	9	96	16	27	0	261
04:45 PM	82	4	1	10	102	14	17	0	230
Total	408	23	2	33	403	69	87	2	1027
05:00 PM	105	8	1	12	110	20	22	0	278
05:15 PM	111	9	0	10	103	12	16	0	261
05:30 PM	93	16	2	19	85	10	11	0	236
05:45 PM	113	42	2	40	73	6	7	0	283
Total	422	75	5	81	371	48	56	0	1058
Grand Total	1540	412	13	431	1350	147	255	3	4151
Apprch %	78.4	21	0.7	24.2	75.8	36.3	63	0.7	
Total %	37.1	9.9	0.3	10.4	32.5	3.5	6.1	0.1	

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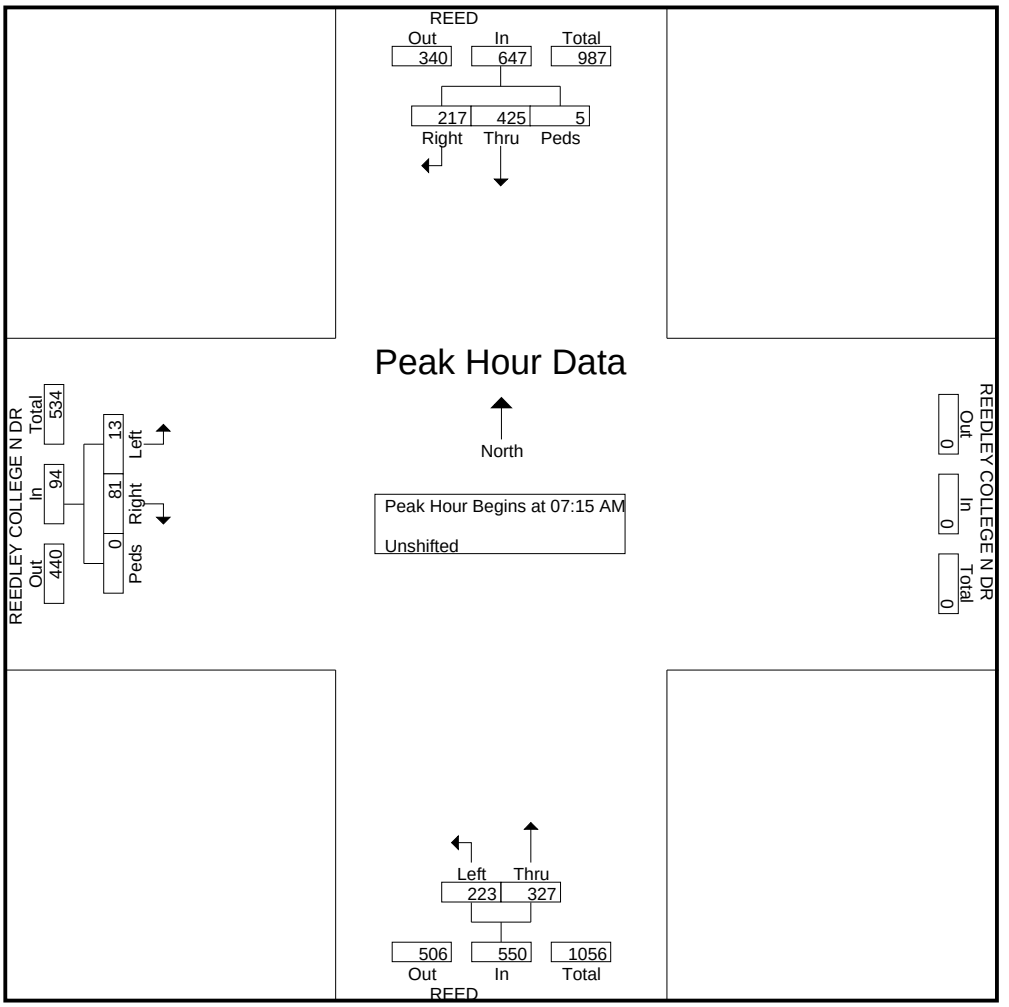
File Name : Reed Ave at Reedley College N Driveway
Site Code : 00000000
Start Date : 1/28/2020
Page No : 2

	REED Southbound				REED Northbound			REEDLEY COLLEGE N DR Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 07:15 AM												
07:15 AM	110	39	0	149	51	77	128	0	7	0	7	284
07:30 AM	**115**	44	**2**	161	58	78	136	1	15	0	16	313
07:45 AM	111	**99**	1	**211**	**84**	85	**169**	2	**43**	0	**45**	**425**
08:00 AM	89	35	2	126	30	**87**	117	**10**	16	0	26	269
Total Volume	425	217	5	647	223	327	550	13	81	0	94	1291
% App. Total	65.7	33.5	0.8		40.5	59.5		13.8	86.2	0		
PHF	.924	.548	.625	.767	.664	.940	.814	.325	.471	.000	.522	.759



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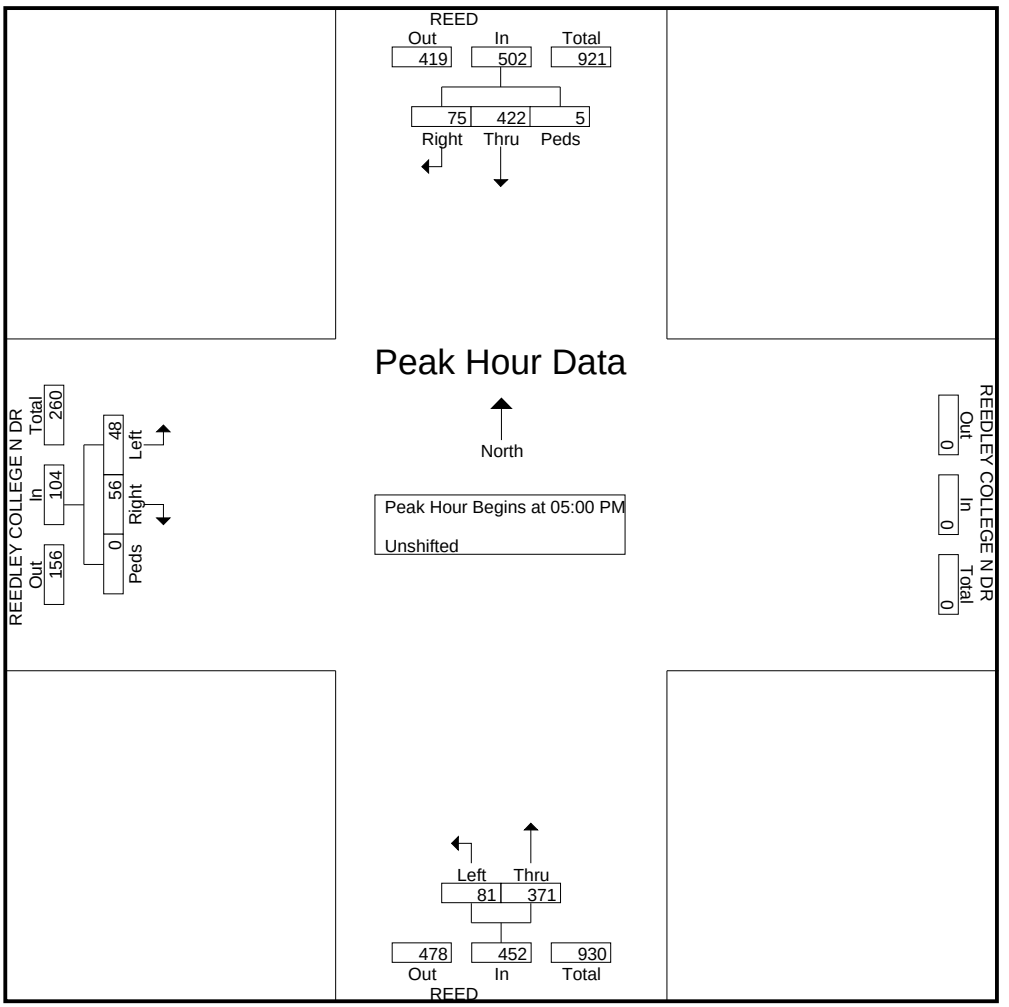
File Name : Reed Ave at Reedley College N Driveway
Site Code : 00000000
Start Date : 1/28/2020
Page No : 3

	REED Southbound				REED Northbound			REEDLEY COLLEGE N DR Eastbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 05:00 PM												
05:00 PM	105	8	1	114	12	**110**	**122**	**20**	**22**	0	**42**	278
05:15 PM	111	9	0	120	10	103	113	12	16	0	28	261
05:30 PM	93	16	**2**	111	19	85	104	10	11	0	21	236
05:45 PM	**113**	**42**	2	**157**	**40**	73	113	6	7	0	13	**283**
Total Volume	422	75	5	502	81	371	452	48	56	0	104	1058
% App. Total	84.1	14.9	1		17.9	82.1		46.2	53.8	0		
PHF	.934	.446	.625	.799	.506	.843	.926	.600	.636	.000	.619	.935



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File Name : Reedley College N Dr at Reed
Site Code : 00000000
Start Date : 3/7/2020
Page No : 1

Groups Printed- Unshifted - Bank 1

	REED Southbound				REED Northbound				REEDLEY COLLEGE N DR Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
04:00 PM	1	84	0	85	82	2	0	84	2	1	0	3	172
04:15 PM	0	91	0	91	74	3	0	77	2	3	0	5	173
04:30 PM	1	63	0	64	58	0	0	58	3	1	0	4	126
04:45 PM	0	75	0	75	61	5	0	66	1	0	0	1	142
Total	2	313	0	315	275	10	0	285	8	5	0	13	613
05:00 PM	0	80	2	82	75	4	0	79	1	1	0	2	163
05:15 PM	1	73	0	74	69	3	0	72	2	1	0	3	149
05:30 PM	0	71	0	71	66	7	0	73	0	0	0	0	144
05:45 PM	1	71	0	72	64	2	0	66	4	1	0	5	143
Total	2	295	2	299	274	16	0	290	7	3	0	10	599
Grand Total	4	608	2	614	549	26	0	575	15	8	0	23	1212
Apprch %	0.7	99	0.3		95.5	4.5	0		65.2	34.8	0		
Total %	0.3	50.2	0.2	50.7	45.3	2.1	0	47.4	1.2	0.7	0	1.9	
Unshifted	4	608	2	614	549	26	0	575	15	8	0	23	1212
% Unshifted	100	100	100	100	100	100	0	100	100	100	0	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0

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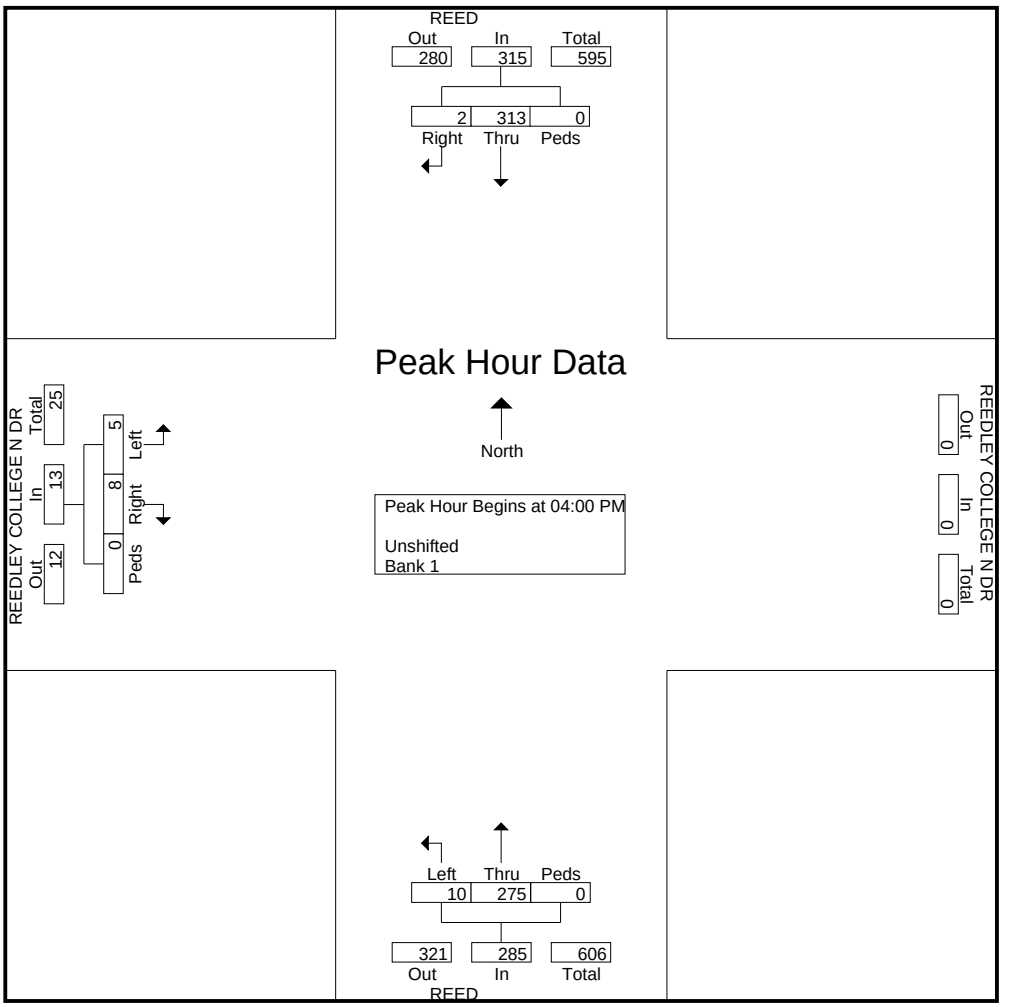
File Name : Reedley College N Dr at Reed
Site Code : 00000000
Start Date : 3/7/2020
Page No : 2

	REED Southbound				REED Northbound				REEDLEY COLLEGE N DR Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**1**	84	0	85	**82**	2	0	**84**	2	1	0	3	172
04:15 PM	0	**91**	0	**91**	74	3	0	77	2	**3**	0	**5**	**173**
04:30 PM	1	63	0	64	58	0	0	58	**3**	1	0	4	126
04:45 PM	0	75	0	75	61	**5**	0	66	1	0	0	1	142
Total Volume	2	313	0	315	275	10	0	285	8	5	0	13	613
% App. Total	0.6	99.4	0		96.5	3.5	0		61.5	38.5	0		
PHF	.500	.860	.000	.865	.838	.500	.000	.848	.667	.417	.000	.650	.886



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File Name : Reedley College N Dr at Reed
Site Code : 00000000
Start Date : 3/7/2020
Page No : 1

Groups Printed- Bank 2

	REED Southbound				REED Northbound				REEDLEY COLLEGE N DR Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
******													
Total	0	1	0	1	1	0	0	1	0	0	0	0	2
******													
Grand Total	0	1	0	1	1	0	0	1	0	0	0	0	2
Apprch %	0	100	0		100	0	0		0	0	0		
Total %	0	50	0	50	50	0	0	50	0	0	0	0	

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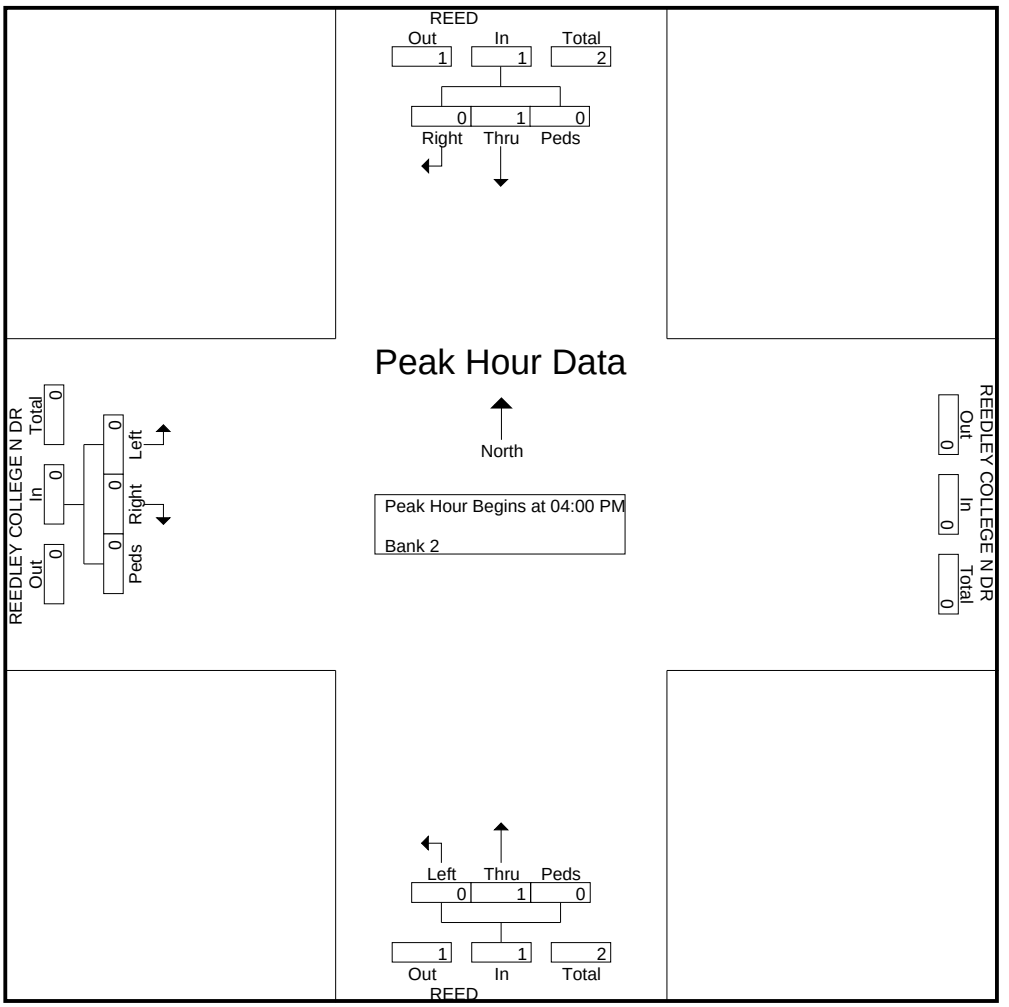
File Name : Reedley College N Dr at Reed
Site Code : 00000000
Start Date : 3/7/2020
Page No : 2

	REED Southbound				REED Northbound				REEDLEY COLLEGE N DR Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**
04:15 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	2
% App. Total	0	100	0		100	0	0		0	0	0		
PHF	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.000	.000	.500



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

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

Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Manning Ave @ Reed Ave
LATITUDE 36.6042
COUNTY Fresno
LONGITUDE -119.4577
COLLECTION DATE Thursday, March 12, 2020
WEATHER Clear

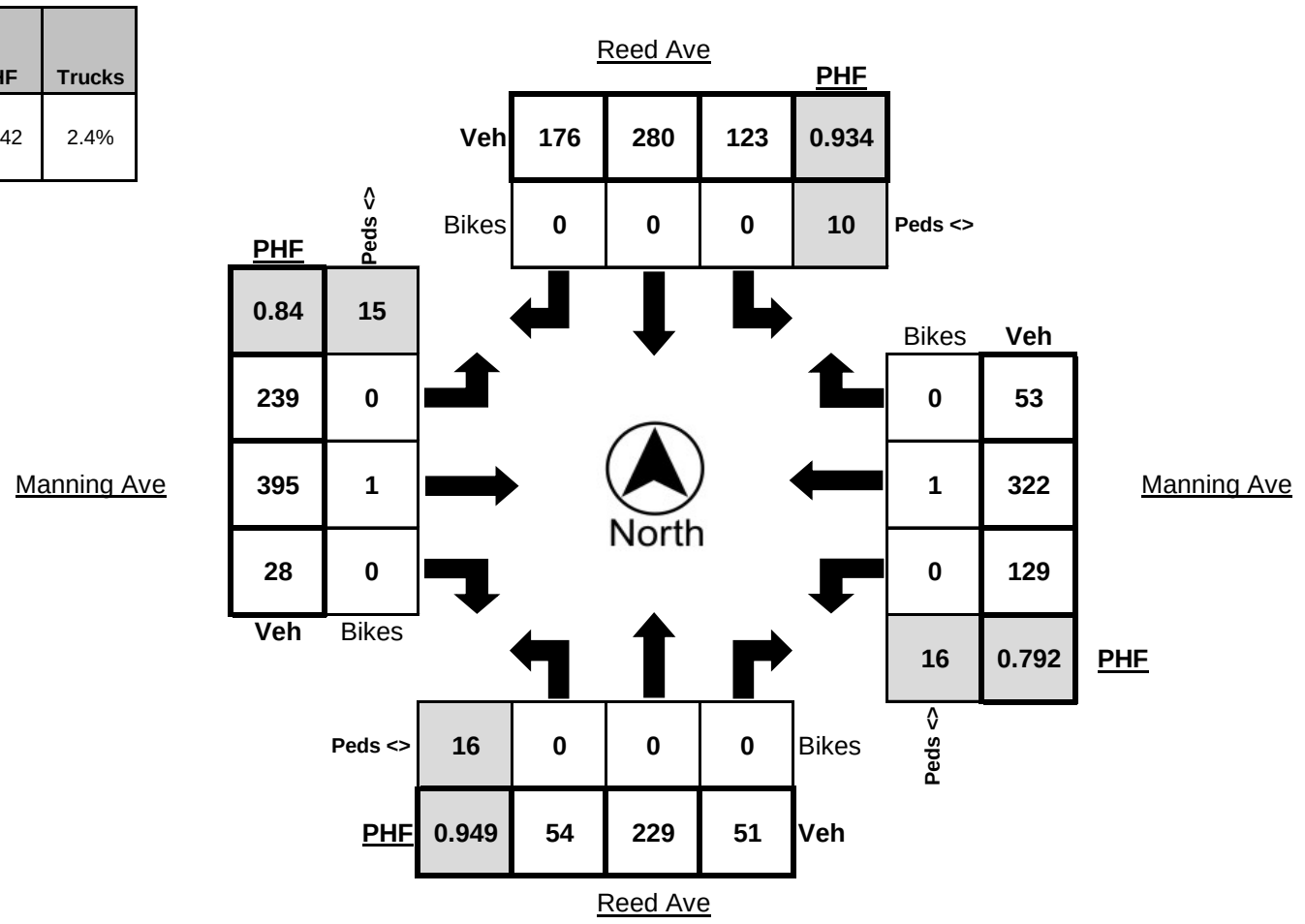
	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	16	67	5	3	23	58	42	2	56	89	5	6	36	67	11	4
4:15 PM - 4:30 PM	9	57	16	1	32	58	38	2	56	102	4	2	38	71	12	4
4:30 PM - 4:45 PM	12	55	15	0	27	71	52	3	51	98	8	3	34	69	13	2
4:45 PM - 5:00 PM	15	62	7	2	16	70	44	4	63	94	5	6	28	61	9	4
5:00 PM - 5:15 PM	11	60	17	2	37	72	46	7	56	81	9	3	41	103	15	4
5:15 PM - 5:30 PM	16	52	12	3	43	67	34	2	69	122	6	4	26	89	16	1
5:30 PM - 5:45 PM	9	61	15	5	27	59	35	2	54	99	4	2	40	68	14	2
5:45 PM - 6:00 PM	18	67	20	3	20	70	38	2	53	91	4	5	35	58	16	2
TOTAL	**106**	**481**	**107**	**19**	**225**	**525**	**329**	**24**	**458**	**776**	**45**	**31**	**278**	**586**	**106**	**23**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	2	0	1	0	6	0	0	0	1	0	0	0	4
4:15 PM - 4:30 PM	0	0	0	17	0	0	0	4	0	0	0	21	0	0	0	4
4:30 PM - 4:45 PM	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	5	0	0	0	1	0	1	0	3
5:00 PM - 5:15 PM	0	0	0	7	0	0	0	7	0	1	0	10	0	0	0	9
5:15 PM - 5:30 PM	0	0	0	2	0	0	0	4	0	0	0	2	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	1	0	0	0	4	0	0	0	1	0	0	0	2
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0
TOTAL	**0**	**0**	**0**	**30**	**0**	**1**	**0**	**33**	**0**	**1**	**0**	**40**	**0**	**1**	**0**	**25**

	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:30 PM - 5:30 PM	54	229	51	7	123	280	176	16	239	395	28	16	129	322	53	11

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:30 PM - 5:30 PM	0	0	0	10	0	0	0	16	0	1	0	16	0	1	0	15

	PHF	Trucks
PM	0.942	2.4%



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Manning Ave @ Reed Ave
LATITUDE 36.6042
COUNTY Fresno
LONGITUDE -119.4577
COLLECTION DATE Saturday, March 07, 2020
WEATHER Clear

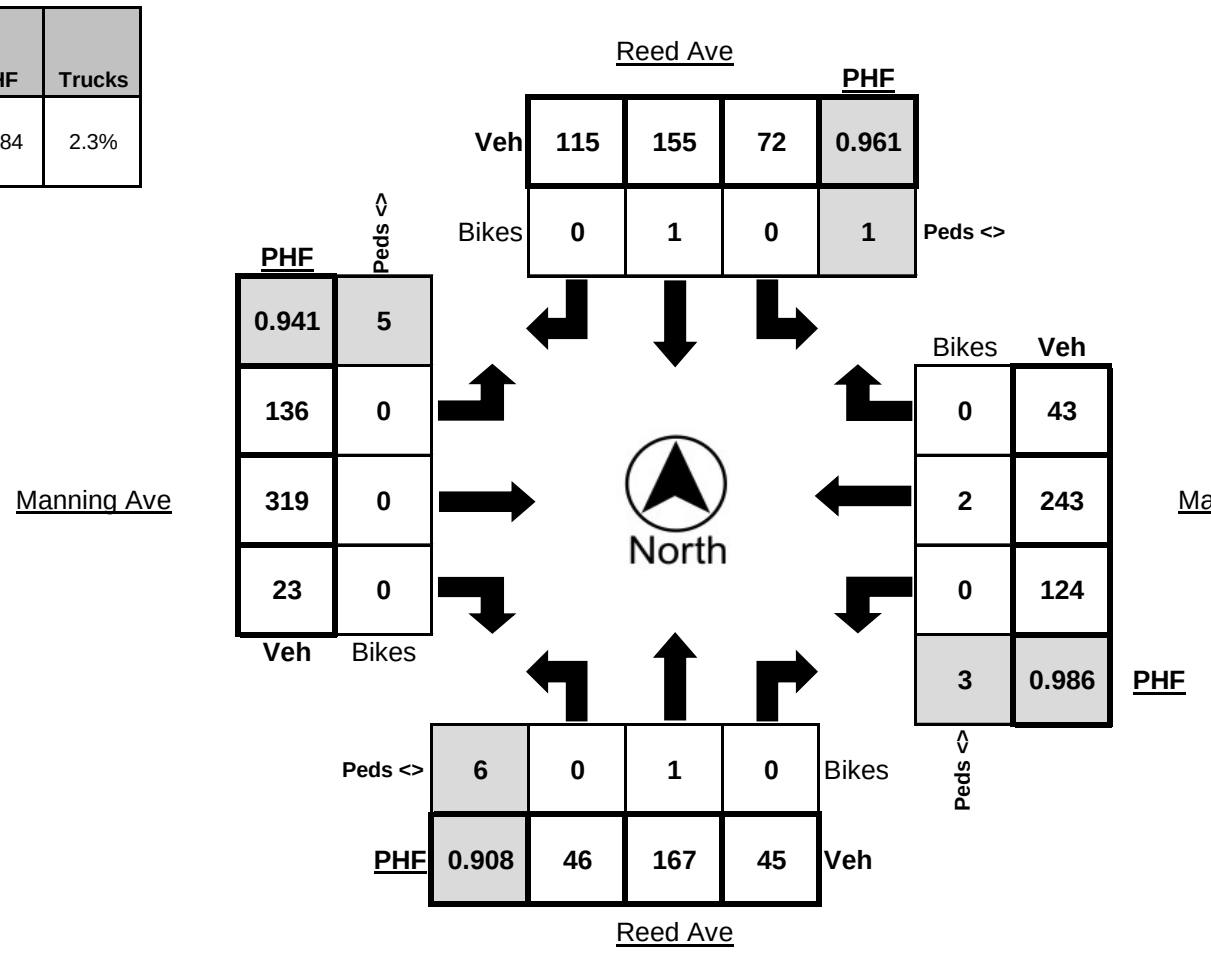
	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	15	37	4	2	11	58	33	3	47	71	4	5	38	49	9	4
4:15 PM - 4:30 PM	13	31	7	1	16	51	26	2	45	68	6	4	27	50	8	3
4:30 PM - 4:45 PM	11	27	7	1	16	44	25	1	36	57	3	3	29	56	6	0
4:45 PM - 5:00 PM	6	38	10	3	19	45	25	2	30	90	4	3	30	63	11	2
5:00 PM - 5:15 PM	16	41	10	1	13	39	30	5	40	82	5	3	33	57	12	2
5:15 PM - 5:30 PM	15	39	12	1	16	40	30	1	32	79	5	3	31	57	12	0
5:30 PM - 5:45 PM	9	49	13	0	24	31	30	2	34	68	9	4	30	66	8	2
5:45 PM - 6:00 PM	11	26	9	1	21	41	30	3	29	60	6	4	29	45	15	2
TOTAL	**96**	**288**	**72**	**10**	**136**	**349**	**229**	**19**	**293**	**575**	**42**	**29**	**247**	**443**	**81**	**15**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	1	0	1	0	6	0	0	0	0	0	1	0	3
5:00 PM - 5:15 PM	0	1	0	0	0	0	0	0	0	0	0	3	0	1	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**2**	**0**	**1**	**0**	**2**	**0**	**13**	**0**	**0**	**0**	**3**	**0**	**2**	**0**	**6**

	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:45 PM - 5:45 PM	46	167	45	5	72	155	115	10	136	319	23	13	124	243	43	6

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:45 PM - 5:45 PM	0	1	0	1	0	1	0	6	0	0	0	3	0	2	0	5

	PHF	Trucks
PM	0.984	2.3%



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

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

Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Manning Ave @ I St
LATITUDE 36.6021
COUNTY Fresno
LONGITUDE -119.4613
COLLECTION DATE Thursday, March 12, 2020
WEATHER Clear

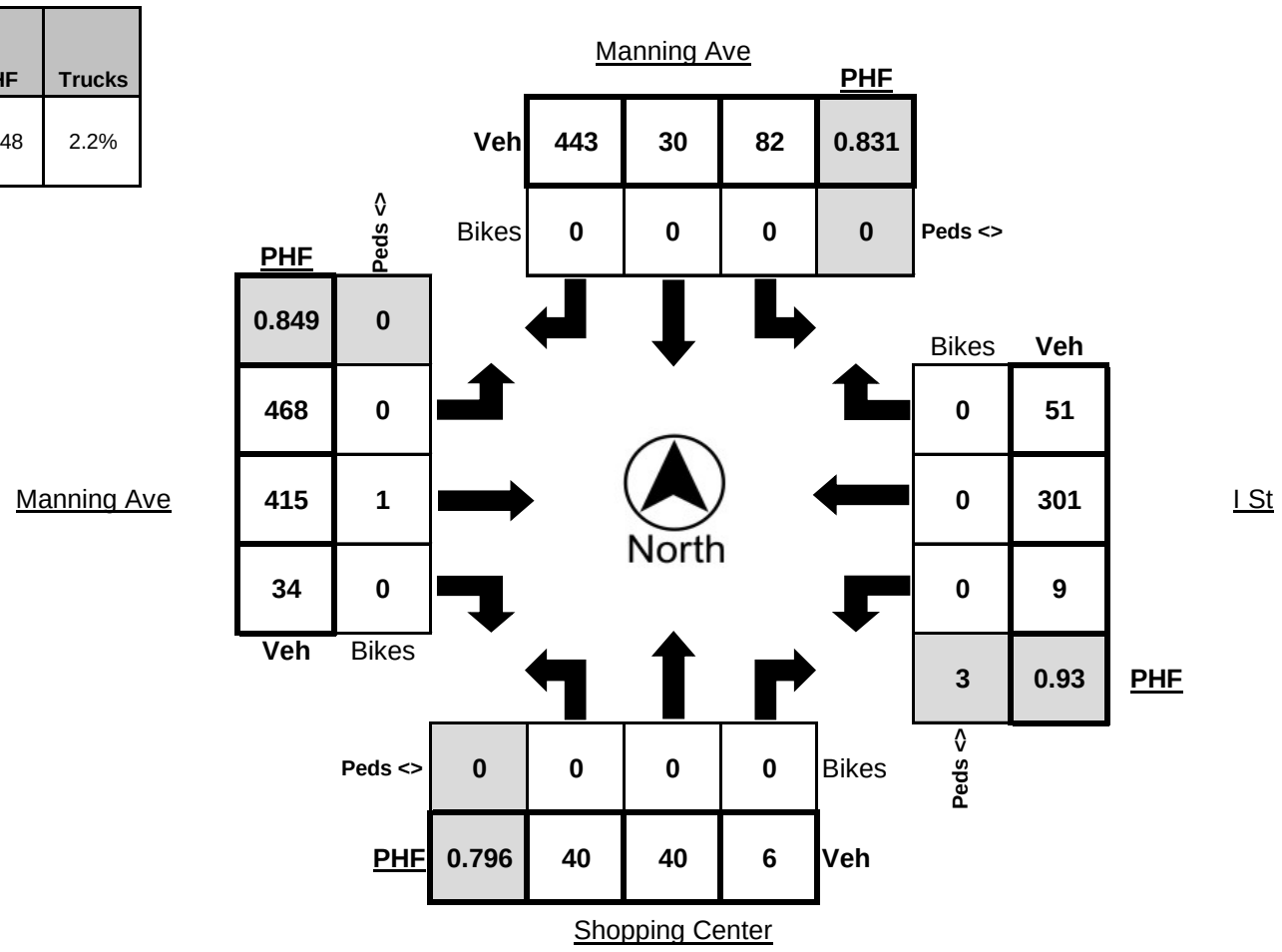
	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	9	14	1	0	18	6	128	6	107	117	5	11	2	71	10	1
4:15 PM - 4:30 PM	8	12	0	0	17	6	106	6	95	110	10	1	1	88	4	3
4:30 PM - 4:45 PM	6	5	3	0	25	9	104	5	95	117	8	5	1	84	12	0
4:45 PM - 5:00 PM	14	7	1	1	15	7	105	5	111	87	9	6	2	71	14	2
5:00 PM - 5:15 PM	11	11	1	0	25	6	136	2	121	90	9	7	4	85	7	1
5:15 PM - 5:30 PM	9	17	1	1	17	8	98	0	141	121	8	5	2	61	18	2
5:30 PM - 5:45 PM	16	7	1	0	20	10	74	3	104	88	9	6	2	68	15	1
5:45 PM - 6:00 PM	8	8	1	0	17	7	80	2	141	111	11	5	1	51	11	1
TOTAL	**81**	**81**	**9**	**2**	**154**	**59**	**831**	**29**	**915**	**841**	**69**	**46**	**15**	**579**	**91**	**11**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	1	0	0	0	1	0	0	0	1	0	4	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	1	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**0**	**12**	**0**	**1**	**0**	**0**

	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:30 PM - 5:30 PM	40	40	6	2	82	30	443	12	468	415	34	23	9	301	51	5

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0

	PHF	Trucks
PM	0.948	2.2%



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Manning Ave @ I St
LATITUDE 36.6021
COUNTY Fresno
LONGITUDE -119.4613
COLLECTION DATE Saturday, March 07, 2020
WEATHER Clear

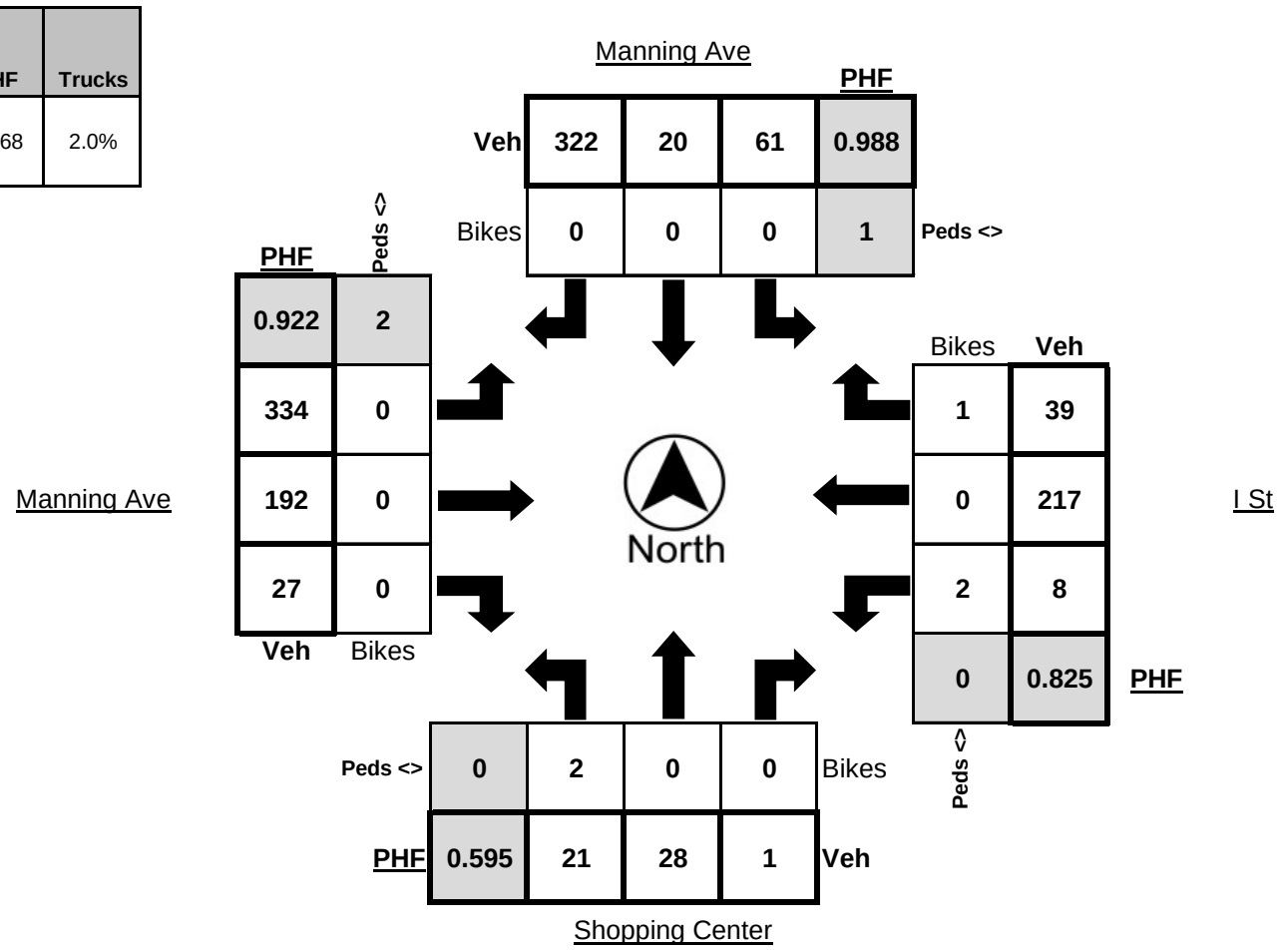
	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	11	6	1	1	21	6	87	6	80	45	8	6	1	46	13	2
4:15 PM - 4:30 PM	17	10	3	0	11	5	73	3	75	45	7	3	0	36	7	1
4:30 PM - 4:45 PM	6	5	0	0	21	3	78	0	80	60	7	3	0	54	14	3
4:45 PM - 5:00 PM	3	5	1	0	19	5	77	4	100	43	7	1	4	47	7	0
5:00 PM - 5:15 PM	9	12	0	0	12	5	85	4	70	39	7	6	0	47	11	0
5:15 PM - 5:30 PM	3	6	0	0	9	7	82	1	84	50	6	2	4	69	7	2
5:30 PM - 5:45 PM	4	9	0	0	8	9	90	4	65	46	7	5	0	70	12	0
5:45 PM - 6:00 PM	12	14	1	0	9	12	71	3	61	51	4	4	3	29	5	1
TOTAL	**65**	**67**	**6**	**1**	**110**	**52**	**643**	**25**	**615**	**379**	**53**	**30**	**12**	**398**	**76**	**9**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	2	0	0	1	0	0	0	0	0	0	0	0	2	0	1	2
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**3**	**2**

	Northbound Vehicles				Southbound Vehicles				Eastbound Vehicles				Westbound Vehicles			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:30 PM - 5:30 PM	21	28	1	0	61	20	322	9	334	192	27	12	8	217	39	5

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:30 PM - 5:30 PM	2	0	0	1	0	0	0	0	0	0	0	0	2	0	1	2

	PHF	Trucks
PM	0.968	2.0%



Appendix C: Traffic Modeling

January 7, 2020

Kai Han, TE
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Via E-mail Only: khan@fresnocog.org

Subject: ***Traffic Modeling Request for the Preparation of a Traffic Impact Analysis for the State Center Community College District Reedley College Performing Arts Center (Project) located in the City of Reedley (JLB Project No. 014-006)***

Dear Mr. Han,

JLB Traffic Engineering, Inc. (JLB) hereby requests traffic modeling for the State Center Community College District (District) Reedley College Performing Arts Center (Project) located on the northwest quadrant of Reed Avenue and Kip Patrick Drive in the City of Reedley. An aerial of the Project site is presented in Exhibit A, while the latest Project Site Plan is presented in Exhibit B.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process.

Scenarios:

The following scenarios are requested:

1. Base Year 2020 (with Link and TAZ modifications)
2. Cumulative Year 2035 plus Project Select Zone (with Link and TAZ modifications)
3. Differences between model runs 2 and 1 above.

Changes and/or additions to the Model Network or TAZ's

JLB reviewed the Fresno COG model network for the Base Year 2020 and Cumulative Year 2035. Based on this review, JLB requests the following Link and TAZ Network modifications. Details on the requested Link and TAZ modifications for Base Year 2020 and Cumulative Year 2035 are illustrated in Exhibit C.

LINK and TAZ MODIFICATIONS (For Base Year 2020):

1. Modify Reed Avenue as follows:
   a. Reduce lanes between South Avenue and Manning Avenue to one lane in each direction.
   b. Reduce northbound lanes between Manning Avenue and Node 4016 to one lane.
   c. Reduce lanes between Node 4016 and North Avenue to one lane in each direction.
2. Modify Frankwood Avenue to reduce lanes between South Avenue and North Avenue to one lane in each direction.
3. Modify Manning Avenue to reduce lanes between Reed Avenue and Columbia Avenue to one lane in each direction.

4. Modify 11th Street to increase lanes between Manning Avenue and North Avenue to two lanes in each direction.
5. Modify "I" Street to increase lanes between Reed Avenue and Dinuba Avenue to two lanes in each direction.
6. Modify North Avenue to reduce lanes between Reed Avenue and 11th Street to one lane in each direction.

LINK and TAZ MODIFICATIONS (For Base Year 2020 and Cumulative Year 2035 plus Project Select Zone Scenarios):

1. Modify "I" Street to increase lanes between Manning Avenue and Reed Avenue to two lanes in each direction.
2. Modify TAZ 575 to add a TAZ connector to Manning Avenue (Node 5374).
3. Modify TAZ 576 to add a TAZ connector to Manning Avenue.
4. Modify TAZ 580 to add a TAZ connector to Manning Avenue (Node 5374).

LINK and TAZ MODIFICATIONS (For Cumulative Year 2035 plus Project Select Zone only):

1. Modify Frankwood Avenue to increase lanes between Sumner Avenue and South Avenue to two lanes in each direction.
2. Modify South Avenue to increase lanes between Reed Avenue and Buttonwillow Avenue to two lanes in each direction.
3. Create Project (TAZ A) generally located along the west side of Reed Avenue approximately 500 feet south of Parlier Avenue (see Exhibit C). TAZ A shall have one TAZ connector to Reed Avenue.
4. Modify Reed Avenue to increase lanes between "I" Street and Floral Avenue to two lanes in each direction.

Project (TAZ A) Trip Generation

Trip generation rates for the proposed Project were obtained from the Transportation Study for the Ford Theaters Project prepared by Gibson Transportation Consulting, Inc. dated June 2014. The Study presents a PM peak hour trip generation rate of 0.33 with an 85/15 inbound and outbound split. The Daily rate was derived based on information provided by the District that the Project would serve as a venue for up to three (3) events during a day. Table I presents the trip generation for the proposed Project (TAZ A) with trip generation rates for a Performing Arts Center. At buildout, the proposed Project (TAZ A) is estimated to generate a maximum of 611 daily trips, 0 AM peak hour trips and 182 PM peak hour driveway trips.

Table I: Project (TAZ A) Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*
Performing Arts Center	550	seats	1.11**	611	0.00	50	50	0	0	0	0.33*	85*	15*	155	27	182
Total Driveway Trips				**611**				**0**	**0**	**0**				**155**	**27**	**182**

Note: * = Trip Generation rate and inbound and outbound split based on the Transportation Study for the Ford Theaters Project prepared by Gibson Transportation Consulting, Inc. dated June 2014
** = Trip Generation rate based on information provided by the District.

If you have any questions or require additional information, please do not hesitate to contact me by phone at 559.664.3159 or by email at jgarcia@JLBtraffic.com.

Sincerely,

Jesus Garcia

Jesus Garcia
Engineer I/II

CC: Susana Maciel, JLB Traffic Engineering, Inc.

JLB TRAFFIC ENGINEERING, INC.
www.JLBtraffic.com
info@JLBtraffic.com
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991

Exhibit A – Project Site Aerial

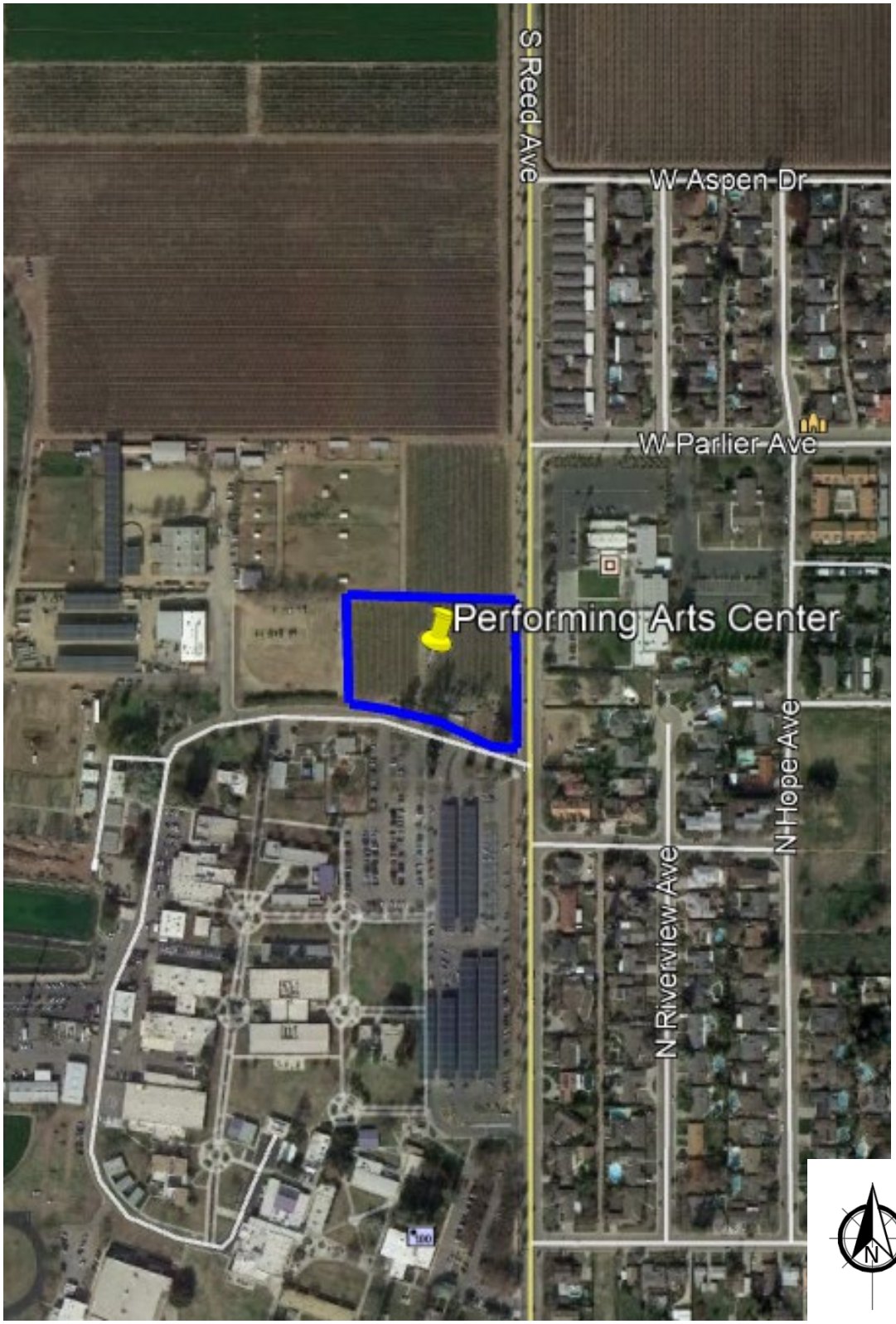


Exhibit B – Project Site Plan

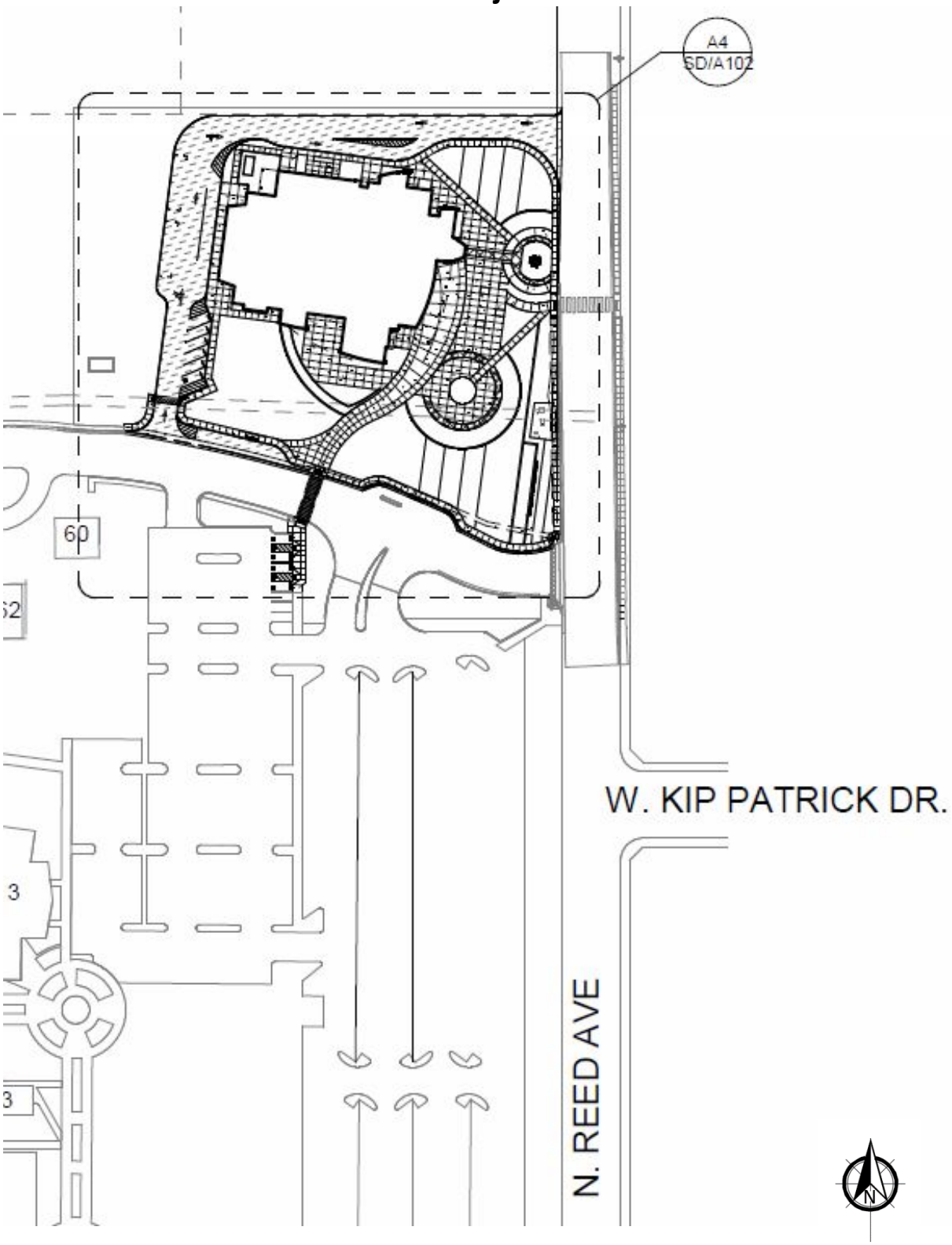
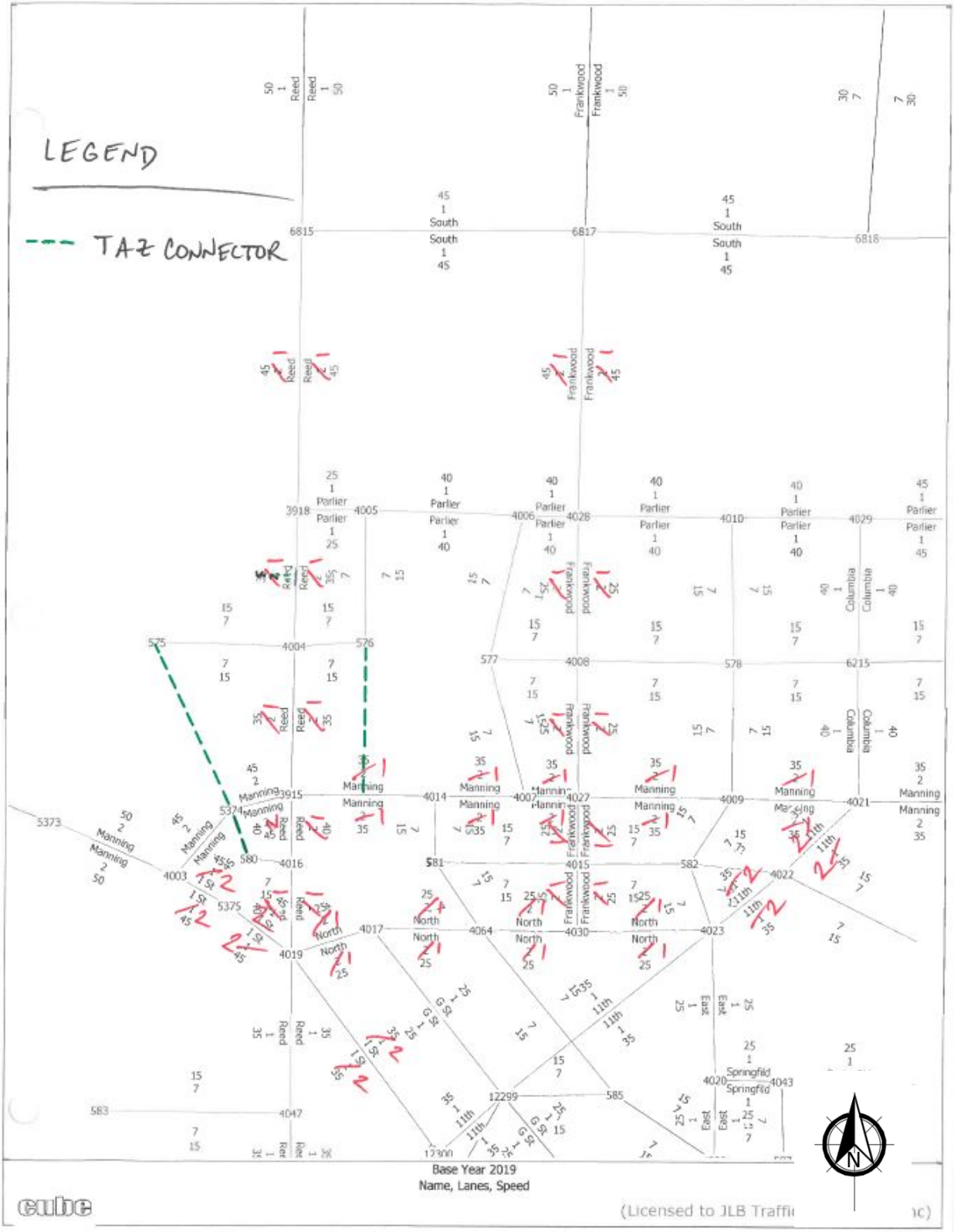
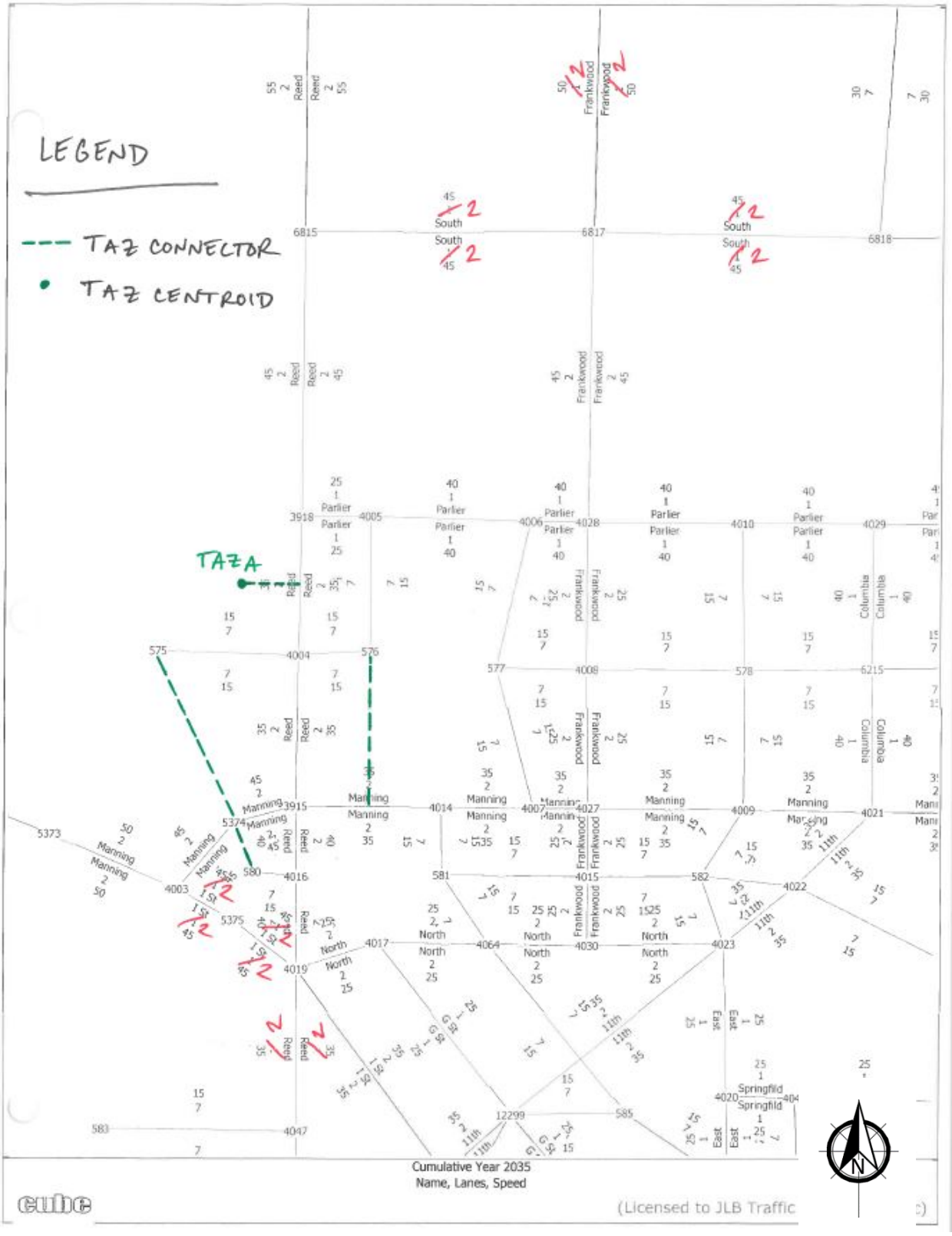
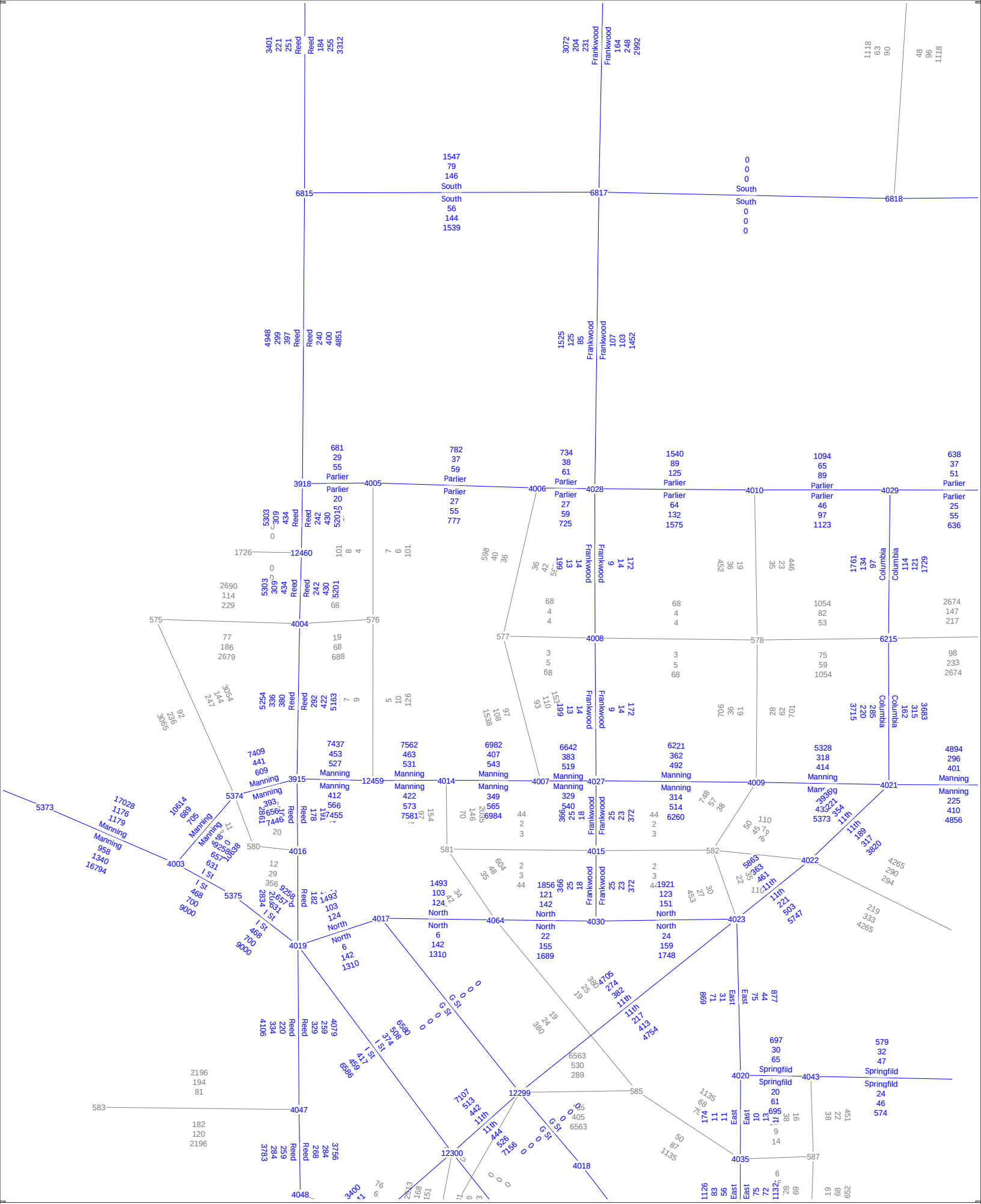


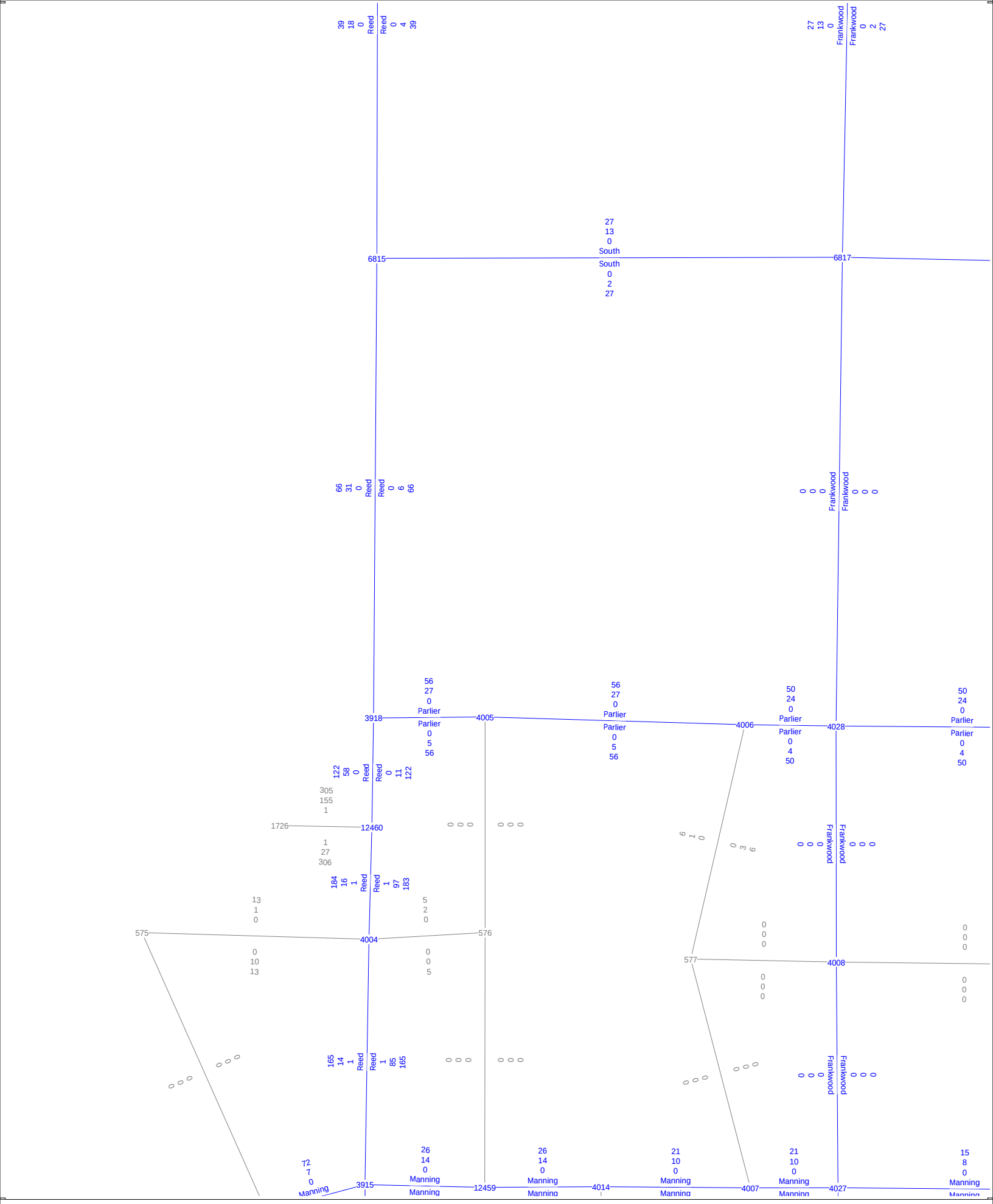
Exhibit C – Model TAZ Modifications



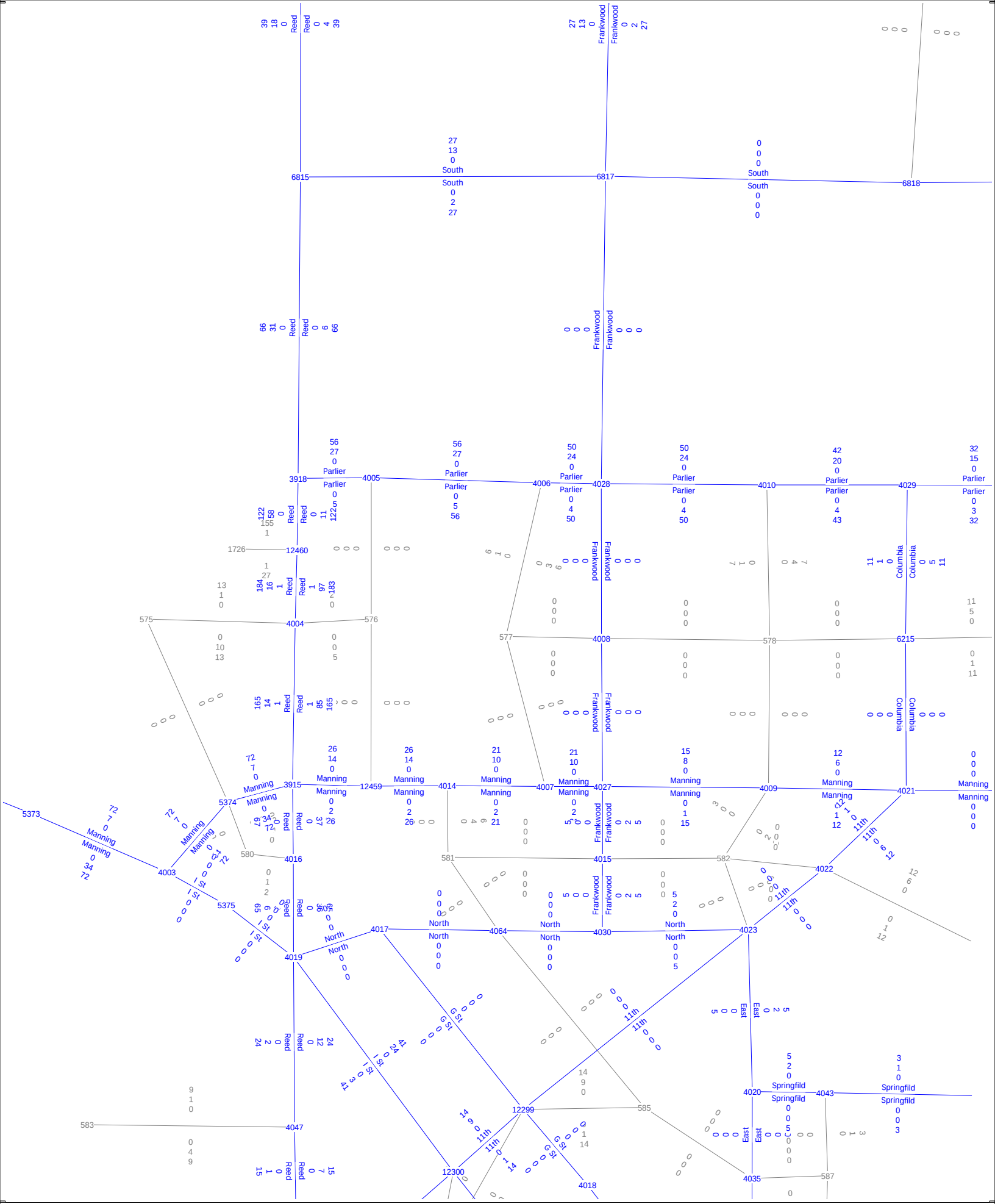

LEGEND
TAZ CONNECTOR
TAZ CENTROID
TAZ A
Cumulative Year 2035
Name, Lanes, Speed
cube
(Licensed to JLB Traffic
N



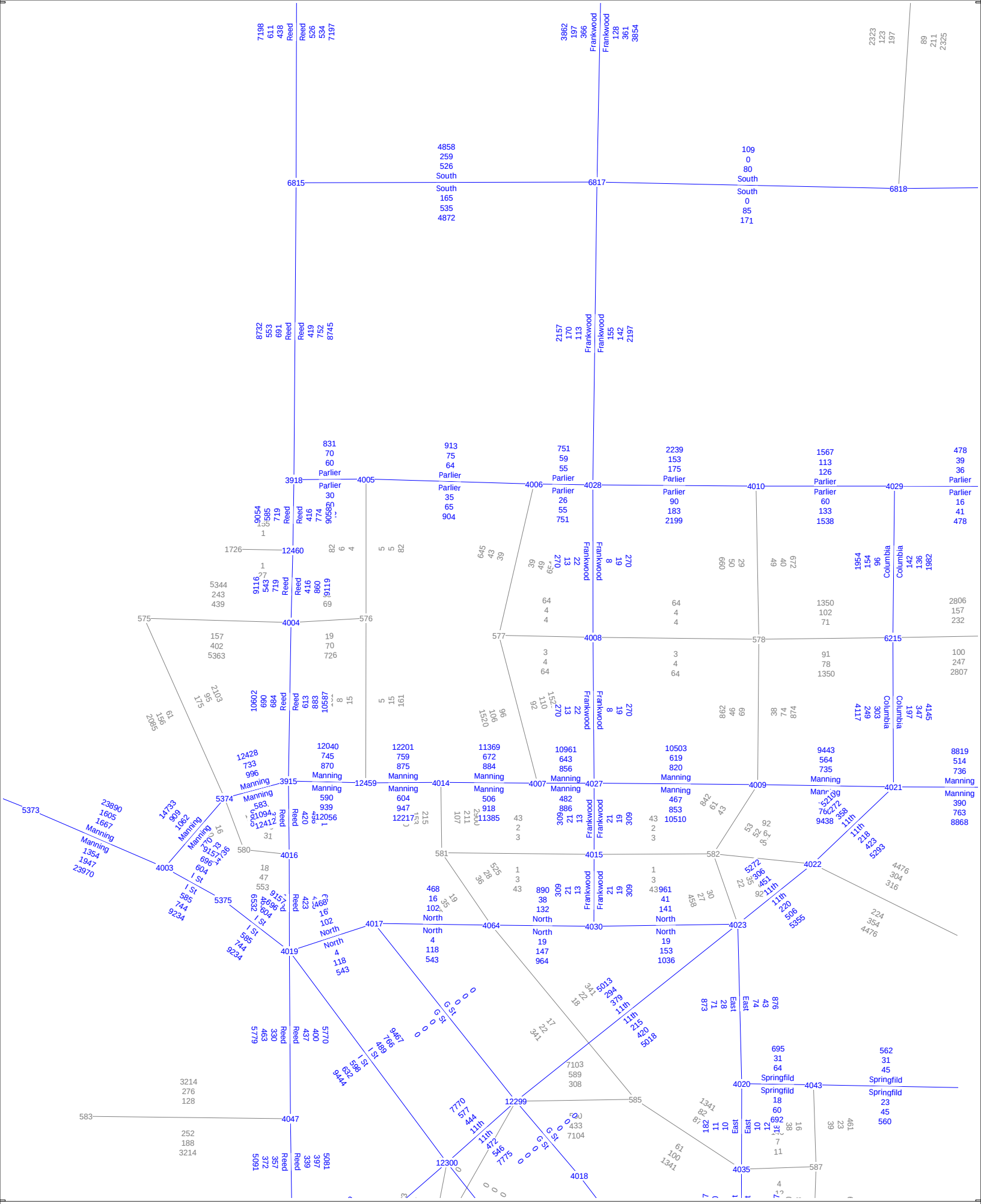
Base Year 2020
AM, PM, Daily Volumes



Cumulative Year 2035
Select Zone
AM, PM, Daily Volumes



Cumulative Year 2035
Select Zone
AM, PM, Daily Volumes



Summaries for Zones 1726

Person Trips

Purpose	Production	Attractions	Total
Home-Work	0	58	58
Home-Shop	0	0	0
Home-Other	0	1020	1020
Work-Other	41	25	66
Other-Other	255	255	510
Total Persons	296	1358	1654

Vehicle Trips

Purpose	Production	Attractions	Total
Home-Work	0	51	51
Home-Shop	0	0	0
Home-Other	0	440	440
Work-Other	37	23	60
Other-Other	150	150	300
Total Vehicles	187	663	851

Average Trip Length	Time (Minutes)
Home-Work	15.79
Home-Shop	?
Home-Other	11.3
Work-Other	16.17
Other-Other	10.46
All Trips	11.39

Average Trip Length	Distance (Miles)
Home-Work	9.8
Home-Shop	?
Home-Other	5.89
Work-Other	10.24
Other-Other	5.21
All Trips	5.99

Appendix D: Methodology

Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 2010 represents the research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish a LOS.

Urban Streets (Automobile Mode)

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity, and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

Levels of Service (automobile Mode)

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 85 of the base free flow speed (FFS).

LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 85 percent of the base FFS.

LOS C describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS.

LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes, inappropriate signal timing, at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

LOS E is characterized unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS.

LOS F is characterized by street flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS.

Table A-1: Urban Street Levels of Service (Automobile Mode)

Travel Speed as a Percentage of Base Free-Flow Speed (%)	LOS by Critical Volume-to-Capacity Ratio[a]	
	≤1.0	>1.0
>85	A	F
>67 to 85	B	F
>50 to 67	C	F
>40 to 50	D	F
>30 to 40	E	F
≤30	F	F

a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.
Source: Highway Capacity Manual 2010, Exhibit 16-4. Urban Street LOS Criteria (Automobile Mode)

Intersection Levels of Service

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs.

Signalized Intersections – Performance Measures

For signalized intersections the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay, and bicycle perception score. LOS is also considered a performance measure. For the automobile mode average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-2.

Table A-2: Signalized Intersection Level of Service Description (Automobile Mode)

Level of Service	Description	Average Control Delay (seconds per vehicle)
A	Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when volume-to-capacity ratio is and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10.0 to 20.0
C	Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and i ndividual cycle failures are noticeable.	>35 to 55
E	Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Source: Highway Capacity Manual 2010

Unsignalized Intersections

The HCM 2010 procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i. e., in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

All-Way Stop Controlled Intersections

All-way stop controlled intersections is a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. A LOS designation is given to the weighted average control delay to better describe the level of operation.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS for TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-3 provides a description of LOS at unsignalized intersections.

Table A-3: Unsignalized Intersection Level of Service Description (Automobile Mode)

Control Delay (seconds per vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	**v/c > 1.0**
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: HCM 2010 Exhibit 19-1.

Appendix E: Existing Traffic Conditions

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	38	293	68	52	396
Future Vol, veh/h	43	38	293	68	52	396
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	45	345	80	61	466

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	973	385	0	0	425	0
Stage 1	385	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	278	660	-	-	1129	-
Stage 1	686	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	660	-	-	1129	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	361	1129	-
HCM Lane V/C Ratio	-	-	0.264	0.054	-
HCM Control Delay (s)	-	-	18.5	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1	0.2	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	59	36	366	102	55	402
Future Vol, veh/h	59	36	366	102	55	402
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	63	39	394	110	59	432

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	949	399	0	-	399	0
Stage 1	399	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	288	649	-	0	1154	-
Stage 1	676	-	-	0	-	-
Stage 2	576	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	267	646	-	-	1149	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	576	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	267	646	1149	-
HCM Lane V/C Ratio	-	0.238	0.06	0.051	-
HCM Control Delay (s)	-	22.6	10.9	8.3	0
HCM Lane LOS	-	C	B	A	A
HCM 95th %tile Q(veh)	-	0.9	0.2	0.2	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	56	81	371	422	75
Future Vol, veh/h	48	56	81	371	422	75
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	60	86	395	449	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1061	494	534	0	-	0
Stage 1	494	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	247	573	1029	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	224	570	1024	-	-	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1024	-	333	-	-
HCM Lane V/C Ratio	0.084	-	0.332	-	-
HCM Control Delay (s)	8.8	-	21.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	395	28	129	322	53	54	229	51	123	280	176
Future Volume (veh/h)	239	395	28	129	322	53	54	229	51	123	280	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	254	420	30	137	343	56	57	244	54	131	298	187
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	226	758	54	167	574	93	455	771	646	160	454	378
Arrive On Green	0.13	0.23	0.23	0.09	0.19	0.19	0.26	0.42	0.42	0.09	0.24	0.24
Sat Flow, veh/h	1767	3333	237	1767	3026	488	1767	1856	1554	1767	1856	1544
Grp Volume(v), veh/h	254	221	229	137	198	201	57	244	54	131	298	187
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1752	1767	1856	1554	1767	1856	1544
Q Serve(g_s), s	12.8	11.1	11.2	7.6	10.3	10.5	2.5	8.9	2.1	7.3	14.4	10.4
Cycle Q Clear(g_c), s	12.8	11.1	11.2	7.6	10.3	10.5	2.5	8.9	2.1	7.3	14.4	10.4
Prop In Lane	1.00		0.13	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	401	411	167	335	333	455	771	646	160	454	378
V/C Ratio(X)	1.12	0.55	0.56	0.82	0.59	0.60	0.13	0.32	0.08	0.82	0.66	0.49
Avail Cap(c_a), veh/h	226	538	551	200	511	508	455	771	646	184	661	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	34.1	34.2	44.4	37.0	37.1	28.5	19.7	17.7	44.7	34.0	32.4
Incr Delay (d2), s/veh	96.8	1.2	1.2	20.1	1.7	1.8	0.1	1.1	0.3	21.8	7.2	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	4.8	4.9	4.2	4.5	4.6	1.1	4.0	0.8	4.1	7.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	140.4	35.3	35.4	64.5	38.6	38.8	28.6	20.7	18.0	66.5	41.2	37.0
LnGrp LOS	F	D	D	E	D	D	C	C	B	E	D	D
Approach Vol, veh/h		704			536			355			616	
Approach Delay, s/veh		73.3			45.3			21.6			45.3	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	45.7	13.6	27.3	29.9	29.1	17.4	23.6
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 10	* 31	* 11	30.5	5.0	* 36	12.8	* 29
Max Q Clear Time (g_c+I1), s	9.3	10.9	9.6	13.2	4.5	16.4	14.8	12.5
Green Ext Time (p_c), s	0.0	1.5	0.1	2.4	0.0	2.2	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	50.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	468	415	34	9	301	51	40	40	6	82	30	443
Future Volume (vph)	468	415	34	9	301	51	40	40	6	82	30	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3302	1568	1752	3428		1752	3433		1665	1712	2760
Flt Permitted	0.48	0.68	1.00	0.95	1.00		0.95	1.00		0.64	0.89	1.00
Satd. Flow (perm)	805	2272	1568	1752	3428		1752	3433		1122	1560	2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	493	437	36	9	317	54	42	42	6	86	32	466
RTOR Reduction (vph)	0	0	14	0	9	0	0	5	0	0	0	397
Lane Group Flow (vph)	276	654	22	9	362	0	42	43	0	58	60	69
Confl. Peds. (#/hr)									3			
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	66.0	66.0	60.8	1.0	52.7		4.5	13.0		20.9	20.9	14.7
Effective Green, g (s)	66.0	66.0	60.8	1.0	52.7		4.5	13.0		20.9	20.9	14.7
Actuated g/C Ratio	0.66	0.66	0.61	0.01	0.53		0.04	0.13		0.21	0.21	0.15
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	614	1607	953	17	1806		78	446		268	335	405
v/s Ratio Prot	c0.05	0.04		0.01	0.11		c0.02	0.01		0.01	0.01	
v/s Ratio Perm	c0.25	0.23	0.01							c0.03	0.03	0.02
v/c Ratio	0.45	0.41	0.02	0.53	0.20		0.54	0.10		0.22	0.18	0.17
Uniform Delay, d1	7.2	7.9	7.8	49.3	12.5		46.7	38.3		32.4	32.5	37.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.50	0.51	1.45
Incremental Delay, d2	0.5	0.2	0.0	26.7	0.2		7.0	0.1		0.4	0.2	0.2
Delay (s)	7.7	8.1	7.8	75.9	12.8		53.7	38.4		16.7	17.0	54.2
Level of Service	A	A	A	E	B		D	D		B	B	D
Approach Delay (s)		8.0			14.3			45.6			46.6	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	17	218	27	30	225
Future Vol, veh/h	43	17	218	27	30	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	50	20	253	31	35	262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	601	269	0	0	284	0
Stage 1	269	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	462	767	-	-	1273	-
Stage 1	774	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	447	767	-	-	1273	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	507	1273	-
HCM Lane V/C Ratio	-	-	0.138	0.027	-
HCM Control Delay (s)	-	-	13.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	18	179	64	45	318
Future Vol, veh/h	71	18	179	64	45	318
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	80	20	201	72	51	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	662	203	0	-	203	0
Stage 1	203	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	425	835	-	0	1363	-
Stage 1	829	-	-	0	-	-
Stage 2	634	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	404	833	-	-	1360	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	634	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	404	833	1360	-
HCM Lane V/C Ratio	-	0.197	0.024	0.037	-
HCM Control Delay (s)	-	16.1	9.4	7.7	0
HCM Lane LOS	-	C	A	A	A
HCM 95th %tile Q(veh)	-	0.7	0.1	0.1	-

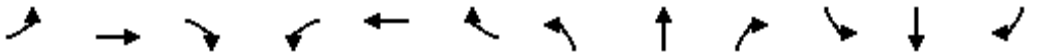
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	8	10	275	313	2
Future Vol, veh/h	5	8	10	275	313	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	9	11	309	352	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	684	353	354	0	-	0
Stage 1	353	-	-	-	-	-
Stage 2	331	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	413	688	1199	-	-	-
Stage 1	709	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	688	1199	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1199	-	545	-	-
HCM Lane V/C Ratio	0.009	-	0.027	-	-
HCM Control Delay (s)	8	-	11.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	319	23	124	243	43	46	167	45	72	155	115
Future Volume (veh/h)	136	319	23	124	243	43	46	167	45	72	155	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	139	326	23	127	248	44	47	170	46	73	158	117
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	188	698	49	169	564	99	98	345	291	124	353	297
Arrive On Green	0.11	0.21	0.21	0.10	0.19	0.19	0.06	0.19	0.19	0.07	0.19	0.19
Sat Flow, veh/h	1767	3339	234	1767	2998	524	1767	1856	1565	1767	1856	1560
Grp Volume(v), veh/h	139	171	178	127	144	148	47	170	46	73	158	117
Grp Sat Flow(s),veh/h/ln	1767	1763	1811	1767	1763	1760	1767	1856	1565	1767	1856	1560
Q Serve(g_s), s	3.0	3.3	3.4	2.7	2.8	2.9	1.0	3.2	1.0	1.6	3.0	2.6
Cycle Q Clear(g_c), s	3.0	3.3	3.4	2.7	2.8	2.9	1.0	3.2	1.0	1.6	3.0	2.6
Prop In Lane	1.00		0.13	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	368	378	169	332	331	98	345	291	124	353	297
V/C Ratio(X)	0.74	0.46	0.47	0.75	0.43	0.45	0.48	0.49	0.16	0.59	0.45	0.39
Avail Cap(c_a), veh/h	370	1351	1388	325	1306	1303	226	1469	1239	433	1668	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	13.6	13.6	17.3	14.0	14.1	17.9	14.3	13.4	17.7	14.0	13.9
Incr Delay (d2), s/veh	5.7	0.9	0.9	6.6	0.9	0.9	3.6	1.1	0.3	4.4	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.1	1.2	1.2	1.0	1.0	0.5	1.2	0.3	0.7	1.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	14.5	14.5	23.8	14.9	15.0	21.6	15.4	13.6	22.1	14.9	14.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		488			419			263			348	
Approach Delay, s/veh		16.8			17.7			16.2			16.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	11.5	7.9	12.8	6.4	12.1	8.8	12.0
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9.6	* 31	* 7.2	30.0	5.0	* 35	8.2	* 29
Max Q Clear Time (g_c+I1), s	3.6	5.2	4.7	5.4	3.0	5.0	5.0	4.9
Green Ext Time (p_c), s	0.1	1.1	0.1	2.0	0.0	1.3	0.1	1.6

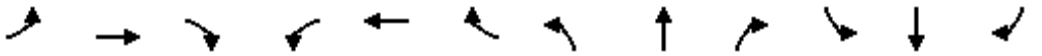
Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	192	27	8	217	39	21	28	1	61	20	322
Future Volume (vph)	334	192	27	8	217	39	21	28	1	61	20	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3281	1568	1752	3419		1752	3487		1665	1710	2700
Flt Permitted	0.45	0.65	1.00	0.95	1.00		0.95	1.00		0.74	0.90	1.00
Satd. Flow (perm)	763	2178	1568	1752	3419		1752	3487		1291	1578	2700
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	344	198	28	8	224	40	22	29	1	63	21	332
RTOR Reduction (vph)	0	0	18	0	16	0	0	1	0	0	0	254
Lane Group Flow (vph)	172	370	10	8	248	0	22	29	0	42	42	78
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	23.4	23.4	18.7	0.5	15.6		0.5	9.8		14.5	14.5	11.9
Effective Green, g (s)	23.4	23.4	18.7	0.5	15.6		0.5	9.8		14.5	14.5	11.9
Actuated g/C Ratio	0.46	0.46	0.37	0.01	0.31		0.01	0.19		0.29	0.29	0.24
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	435	1116	579	17	1054		17	675		389	458	634
v/s Ratio Prot	c0.04	0.03		0.00	0.07		c0.01	0.01		0.01	0.00	
v/s Ratio Perm	c0.14	0.12	0.01							0.03	0.02	c0.03
v/c Ratio	0.40	0.33	0.02	0.47	0.24		1.29	0.04		0.11	0.09	0.12
Uniform Delay, d1	8.4	8.6	10.1	24.9	13.1		25.1	16.6		13.3	13.2	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.0	19.2	0.1		323.2	0.0		0.1	0.1	0.1
Delay (s)	9.0	8.8	10.1	44.1	13.2		348.2	16.6		13.4	13.3	15.3
Level of Service	A	A	B	D	B		F	B		B	B	B
Approach Delay (s)		8.9			14.1			156.9			14.9	
Approach LOS		A			B			F			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



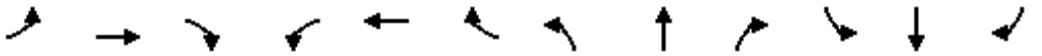
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	395	28	129	322	53	54	229	51	123	280	176
Future Volume (veh/h)	239	395	28	129	322	53	54	229	51	123	280	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	254	420	30	137	343	56	57	244	54	131	298	187
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	367	833	59	174	711	115	91	484	403	169	553	461
Arrive On Green	0.11	0.25	0.25	0.10	0.23	0.23	0.05	0.26	0.26	0.10	0.30	0.30
Sat Flow, veh/h	3428	3333	237	1767	3033	490	1767	1856	1544	1767	1856	1549
Grp Volume(v), veh/h	254	221	229	137	198	201	57	244	54	131	298	187
Grp Sat Flow(s),veh/h/ln	1714	1763	1807	1767	1763	1760	1767	1856	1544	1767	1856	1549
Q Serve(g_s), s	4.2	6.3	6.3	4.4	5.6	5.8	1.8	6.5	1.6	4.2	7.8	5.6
Cycle Q Clear(g_c), s	4.2	6.3	6.3	4.4	5.6	5.8	1.8	6.5	1.6	4.2	7.8	5.6
Prop In Lane	1.00		0.13	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	440	452	174	413	412	91	484	403	169	553	461
V/C Ratio(X)	0.69	0.50	0.51	0.79	0.48	0.49	0.62	0.50	0.13	0.78	0.54	0.41
Avail Cap(c_a), veh/h	447	908	931	206	884	882	152	981	816	309	1134	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	18.7	18.8	25.7	19.2	19.3	27.1	18.3	16.5	25.7	17.1	16.3
Incr Delay (d2), s/veh	3.5	0.9	0.9	15.7	0.9	0.9	6.8	0.8	0.1	7.4	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.4	2.5	2.5	2.2	2.2	0.9	2.7	0.5	2.0	3.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	19.6	19.6	41.4	20.1	20.2	33.8	19.1	16.6	33.2	17.9	16.9
LnGrp LOS	C	B	B	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		704			536			355			616	
Approach Delay, s/veh		22.9			25.6			21.1			20.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	19.4	9.9	19.2	7.2	22.0	10.8	18.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 10	* 31	* 6.8	30.0	5.0	* 36	7.6	* 29
Max Q Clear Time (g_c+I1), s	6.2	8.5	6.4	8.3	3.8	9.8	6.2	7.8
Green Ext Time (p_c), s	0.1	1.6	0.0	2.5	0.0	2.4	0.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	319	23	124	243	43	46	167	45	72	155	115
Future Volume (veh/h)	136	319	23	124	243	43	46	167	45	72	155	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	139	326	23	127	248	44	47	170	46	73	158	117
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	362	698	49	169	566	99	98	345	291	124	353	297
Arrive On Green	0.11	0.21	0.21	0.10	0.19	0.19	0.06	0.19	0.19	0.07	0.19	0.19
Sat Flow, veh/h	3428	3339	234	1767	2999	524	1767	1856	1565	1767	1856	1560
Grp Volume(v), veh/h	139	171	178	127	144	148	47	170	46	73	158	117
Grp Sat Flow(s),veh/h/ln	1714	1763	1811	1767	1763	1760	1767	1856	1565	1767	1856	1560
Q Serve(g_s), s	1.5	3.3	3.4	2.7	2.8	2.9	1.0	3.2	1.0	1.6	3.0	2.6
Cycle Q Clear(g_c), s	1.5	3.3	3.4	2.7	2.8	2.9	1.0	3.2	1.0	1.6	3.0	2.6
Prop In Lane	1.00		0.13	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	362	368	378	169	333	332	98	345	291	124	353	297
V/C Ratio(X)	0.38	0.46	0.47	0.75	0.43	0.44	0.48	0.49	0.16	0.59	0.45	0.39
Avail Cap(c_a), veh/h	552	1351	1388	325	1391	1389	226	1469	1239	433	1668	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	13.6	13.6	17.3	14.0	14.1	17.9	14.3	13.4	17.7	14.0	13.9
Incr Delay (d2), s/veh	0.7	0.9	0.9	6.6	0.9	0.9	3.6	1.1	0.3	4.4	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.1	1.2	1.2	1.0	1.0	0.5	1.2	0.3	0.7	1.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	14.5	14.5	23.8	14.9	15.0	21.6	15.4	13.6	22.1	14.9	14.7
LnGrp LOS	B	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		488			419			263			348	
Approach Delay, s/veh		15.2			17.6			16.2			16.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	11.5	7.9	12.8	6.4	12.1	8.7	12.0
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9.6	* 31	* 7.2	30.0	5.0	* 35	6.3	* 31
Max Q Clear Time (g_c+I1), s	3.6	5.2	4.7	5.4	3.0	5.0	3.5	4.9
Green Ext Time (p_c), s	0.1	1.1	0.1	2.0	0.0	1.3	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	75	53
Average Queue (ft)	28	11
95th Queue (ft)	58	40
Link Distance (ft)	2595	2630
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	54	50	74
Average Queue (ft)	32	21	18
95th Queue (ft)	62	46	57
Link Distance (ft)	285		2602
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		160	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	103	52	23
Average Queue (ft)	42	24	1
95th Queue (ft)	78	53	8
Link Distance (ft)	569		200
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		160	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	193	130	261	225	188	167	228	159	199	159	164	548
Average Queue (ft)	96	57	157	52	108	76	118	53	98	29	105	180
95th Queue (ft)	156	99	233	161	169	133	200	100	180	94	178	388
Link Distance (ft)			637	637		306	306		570			591
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)			1		3	0		1	10		12	17
Queuing Penalty (veh)			1		5	1		4	11		54	51

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	85
95th Queue (ft)	156
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	1
Queuing Penalty (veh)	5

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	145	173	174	26	49	158	96	111	69	22	53	115
Average Queue (ft)	91	86	49	4	11	75	52	38	23	4	18	50
95th Queue (ft)	136	143	124	15	36	123	89	81	49	17	49	86
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	106	120
Average Queue (ft)	50	59
95th Queue (ft)	85	98
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 132

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	68	44
Average Queue (ft)	31	3
95th Queue (ft)	54	19
Link Distance (ft)	2595	2630
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	71	54	73
Average Queue (ft)	29	18	10
95th Queue (ft)	55	48	46
Link Distance (ft)	285		2602
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		160	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	30	31
Average Queue (ft)	5	2
95th Queue (ft)	24	14
Link Distance (ft)	569	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		160
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	138	74	286	210	136	121	162	120	166	159	122	120
Average Queue (ft)	62	17	124	50	66	54	79	39	76	29	47	65
95th Queue (ft)	106	52	197	142	111	106	131	80	136	78	97	107
Link Distance (ft)			636	636		312	312		570			587
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)			1					1	4		3	1
Queuing Penalty (veh)			2					3	3		7	3

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	123
Average Queue (ft)	44
95th Queue (ft)	83
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	131	107	39	26	31	117	93	68	50	43	30	74
Average Queue (ft)	55	50	8	4	7	59	34	15	13	2	5	38
95th Queue (ft)	103	94	27	15	28	99	68	41	36	16	23	69
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	97	96
Average Queue (ft)	41	48
95th Queue (ft)	67	77
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 18

Appendix F: Existing plus Project Traffic Conditions

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	38	297	70	52	414
Future Vol, veh/h	56	38	297	70	52	414
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	66	45	349	82	61	487

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	999	390	0	0	431	0
Stage 1	390	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	269	656	-	-	1123	-
Stage 1	682	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	249	656	-	-	1123	-
Mov Cap-2 Maneuver	249	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.2	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	332	1123	-
HCM Lane V/C Ratio	-	-	0.333	0.054	-
HCM Control Delay (s)	-	-	21.2	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	36	372	105	55	433
Future Vol, veh/h	78	36	372	105	55	433
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	84	39	400	113	59	466

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	989	405	0	-	405	0
Stage 1	405	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	272	644	-	0	1148	-
Stage 1	671	-	-	0	-	-
Stage 2	555	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	252	641	-	-	1143	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.5	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	252	641	1143	-
HCM Lane V/C Ratio	-	0.333	0.06	0.052	-
HCM Control Delay (s)	-	26.3	11	8.3	0
HCM Lane LOS	-	D	B	A	A
HCM 95th %tile Q(veh)	-	1.4	0.2	0.2	-

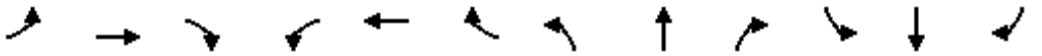
Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	66	166	371	428	125
Future Vol, veh/h	55	66	166	371	428	125
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	59	70	177	395	455	133

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1276	527	593	0	-	0
Stage 1	527	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	183	549	978	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	546	973	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.6	2.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	973	-	246	-	-
HCM Lane V/C Ratio	0.181	-	0.523	-	-
HCM Control Delay (s)	9.5	-	34.6	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.7	-	2.8	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	395	28	129	322	75	54	266	51	127	286	183
Future Volume (veh/h)	273	395	28	129	322	75	54	266	51	127	286	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	290	420	30	137	343	80	57	283	54	135	304	195
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	226	778	55	167	555	128	440	764	640	156	459	382
Arrive On Green	0.13	0.23	0.23	0.09	0.20	0.20	0.25	0.41	0.41	0.09	0.25	0.25
Sat Flow, veh/h	1767	3333	237	1767	2831	650	1767	1856	1554	1767	1856	1544
Grp Volume(v), veh/h	290	221	229	137	212	211	57	283	54	135	304	195
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1718	1767	1856	1554	1767	1856	1544
Q Serve(g_s), s	12.8	11.0	11.1	7.6	11.0	11.3	2.5	10.6	2.1	7.5	14.8	10.9
Cycle Q Clear(g_c), s	12.8	11.0	11.1	7.6	11.0	11.3	2.5	10.6	2.1	7.5	14.8	10.9
Prop In Lane	1.00		0.13	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	412	422	167	346	337	440	764	640	156	459	382
V/C Ratio(X)	1.28	0.54	0.54	0.82	0.61	0.63	0.13	0.37	0.08	0.87	0.66	0.51
Avail Cap(c_a), veh/h	226	538	551	200	511	498	440	764	640	156	661	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	33.6	33.6	44.4	36.7	36.8	29.2	20.4	17.9	45.0	33.9	32.4
Incr Delay (d2), s/veh	156.3	1.1	1.1	20.1	1.8	1.9	0.1	1.4	0.3	37.2	7.4	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	4.7	4.9	4.2	4.8	4.8	1.1	4.8	0.8	4.9	7.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	199.9	34.7	34.7	64.5	38.5	38.8	29.3	21.8	18.2	82.2	41.3	37.3
LnGrp LOS	F	C	C	E	D	D	C	C	B	F	D	D
Approach Vol, veh/h		740			560			394			634	
Approach Delay, s/veh		99.4			45.0			22.4			48.7	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	45.4	13.6	28.0	29.1	29.3	17.4	24.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 8.8	* 32	* 11	30.5	5.0	* 36	12.8	* 29
Max Q Clear Time (g_c+I1), s	9.5	12.6	9.6	13.1	4.5	16.8	14.8	13.3
Green Ext Time (p_c), s	0.0	1.7	0.1	2.4	0.0	2.3	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	59.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	502	415	34	9	301	51	40	40	6	82	30	450
Future Volume (vph)	502	415	34	9	301	51	40	40	6	82	30	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3299	1568	1752	3428		1752	3433		1665	1712	2760
Flt Permitted	0.48	0.67	1.00	0.95	1.00		0.95	1.00		0.72	0.90	1.00
Satd. Flow (perm)	802	2246	1568	1752	3428		1752	3433		1269	1580	2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	528	437	36	9	317	54	42	42	6	86	32	474
RTOR Reduction (vph)	0	0	14	0	10	0	0	5	0	0	0	402
Lane Group Flow (vph)	290	675	22	9	361	0	42	43	0	58	60	72
Confl. Peds. (#/hr)									3			
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	65.5	65.5	60.3	1.0	51.8		4.5	11.5		23.4	23.4	15.2
Effective Green, g (s)	65.5	65.5	60.3	1.0	51.8		4.5	11.5		23.4	23.4	15.2
Actuated g/C Ratio	0.66	0.66	0.60	0.01	0.52		0.04	0.12		0.23	0.23	0.15
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	611	1585	945	17	1775		78	394		329	380	419
v/s Ratio Prot	c0.05	0.05		0.01	0.11		c0.02	0.01		c0.01	0.01	
v/s Ratio Perm	c0.26	0.23	0.01							c0.03	0.02	0.03
v/c Ratio	0.47	0.43	0.02	0.53	0.20		0.54	0.11		0.18	0.16	0.17
Uniform Delay, d1	7.5	8.3	8.0	49.3	13.0		46.7	39.7		30.7	30.5	36.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.50	0.50	0.59
Incremental Delay, d2	0.6	0.2	0.0	26.7	0.3		7.0	0.1		0.2	0.2	0.2
Delay (s)	8.1	8.4	8.0	75.9	13.2		53.7	39.8		15.7	15.5	22.1
Level of Service	A	A	A	E	B		D	D		B	B	C
Approach Delay (s)		8.3			14.7			46.3			20.8	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	17	222	29	30	244
Future Vol, veh/h	57	17	222	29	30	244
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	66	20	258	34	35	284

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	629	275	0	0	292	0
Stage 1	275	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	445	761	-	-	1264	-
Stage 1	769	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	430	761	-	-	1264	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	478	1264	-
HCM Lane V/C Ratio	-	-	0.18	0.028	-
HCM Control Delay (s)	-	-	14.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	92	18	185	67	45	351
Future Vol, veh/h	92	18	185	67	45	351
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	103	20	208	75	51	394

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	706	210	0	-	210	0
Stage 1	210	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	401	828	-	0	1355	-
Stage 1	823	-	-	0	-	-
Stage 2	610	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	381	826	-	-	1352	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	381	826	1352	-
HCM Lane V/C Ratio	-	0.271	0.024	0.037	-
HCM Control Delay (s)	-	17.9	9.5	7.8	0
HCM Lane LOS	-	C	A	A	A
HCM 95th %tile Q(veh)	-	1.1	0.1	0.1	-

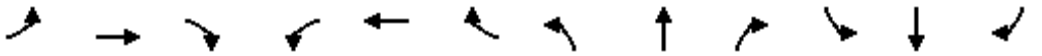
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	19	101	275	319	56
Future Vol, veh/h	12	19	101	275	319	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	21	113	309	358	63

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	925	390	421	0	-	0
Stage 1	390	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	297	656	1133	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	267	656	1133	-	-	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1133	-	419	-	-
HCM Lane V/C Ratio	0.1	-	0.083	-	-
HCM Control Delay (s)	8.5	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	319	23	124	243	66	46	207	45	76	162	122
Future Volume (veh/h)	172	319	23	124	243	66	46	207	45	76	162	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	176	326	23	127	248	67	47	211	46	78	165	124
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	785	55	162	524	139	136	377	318	124	348	293
Arrive On Green	0.13	0.23	0.23	0.09	0.19	0.19	0.08	0.20	0.20	0.07	0.19	0.19
Sat Flow, veh/h	1767	3340	234	1767	2756	729	1767	1856	1566	1767	1856	1560
Grp Volume(v), veh/h	176	171	178	127	157	158	47	211	46	78	165	124
Grp Sat Flow(s),veh/h/ln	1767	1763	1811	1767	1763	1722	1767	1856	1566	1767	1856	1560
Q Serve(g_s), s	4.2	3.5	3.6	3.0	3.4	3.5	1.1	4.4	1.0	1.8	3.4	3.0
Cycle Q Clear(g_c), s	4.2	3.5	3.6	3.0	3.4	3.5	1.1	4.4	1.0	1.8	3.4	3.0
Prop In Lane	1.00		0.13	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	414	426	162	335	327	136	377	318	124	348	293
V/C Ratio(X)	0.78	0.41	0.42	0.78	0.47	0.48	0.35	0.56	0.14	0.63	0.47	0.42
Avail Cap(c_a), veh/h	320	1270	1305	238	1188	1160	205	1345	1135	402	1535	1290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	14.0	14.0	19.1	15.5	15.5	18.8	15.4	14.1	19.5	15.6	15.4
Incr Delay (d2), s/veh	7.9	0.7	0.7	9.9	1.0	1.1	1.5	1.3	0.2	5.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.2	1.3	1.5	1.2	1.2	0.5	1.7	0.3	0.8	1.3	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	14.6	14.6	29.0	16.5	16.6	20.4	16.7	14.3	24.5	16.6	16.4
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		525			442			304			367	
Approach Delay, s/veh		18.5			20.1			16.9			18.2	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	13.0	8.1	14.7	7.5	12.7	10.1	12.8
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9.8	* 31	* 5.8	31.0	5.0	* 36	7.8	* 29
Max Q Clear Time (g_c+I1), s	3.8	6.4	5.0	5.6	3.1	5.4	6.2	5.5
Green Ext Time (p_c), s	0.1	1.3	0.0	2.0	0.0	1.3	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	192	27	8	217	39	21	28	1	61	20	329
Future Volume (vph)	370	192	27	8	217	39	21	28	1	61	20	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3277	1568	1752	3419		1752	3487		1665	1710	2700
Flt Permitted	0.45	0.64	1.00	0.95	1.00		0.95	1.00		0.74	0.90	1.00
Satd. Flow (perm)	762	2160	1568	1752	3419		1752	3487		1291	1579	2700
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	381	198	28	8	224	40	22	29	1	63	21	339
RTOR Reduction (vph)	0	0	18	0	16	0	0	1	0	0	0	259
Lane Group Flow (vph)	190	389	10	8	248	0	22	29	0	42	42	80
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	23.3	23.3	18.6	0.5	15.5		0.5	9.8		14.5	14.5	11.9
Effective Green, g (s)	23.3	23.3	18.6	0.5	15.5		0.5	9.8		14.5	14.5	11.9
Actuated g/C Ratio	0.46	0.46	0.37	0.01	0.31		0.01	0.19		0.29	0.29	0.24
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	434	1107	577	17	1049		17	676		389	460	636
v/s Ratio Prot	c0.04	0.03		0.00	0.07		c0.01	0.01		0.01	0.00	
v/s Ratio Perm	c0.16	0.13	0.01							0.03	0.02	c0.03
v/c Ratio	0.44	0.35	0.02	0.47	0.24		1.29	0.04		0.11	0.09	0.13
Uniform Delay, d1	8.5	8.7	10.1	24.9	13.1		25.0	16.5		13.3	13.2	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.0	19.2	0.1		323.2	0.0		0.1	0.1	0.1
Delay (s)	9.2	8.9	10.2	44.0	13.2		348.2	16.6		13.4	13.3	15.3
Level of Service	A	A	B	D	B		F	B		B	B	B
Approach Delay (s)		9.1			14.1			156.9			14.9	
Approach LOS		A			B			F			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	66	166	371	428	125
Future Vol, veh/h	55	66	166	371	428	125
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	160	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	59	70	177	395	455	133

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1209	460	593	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	201	599	978	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	596	973	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.2	2.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	973	-	163	596	-	-
HCM Lane V/C Ratio	0.181	-	0.359	0.118	-	-
HCM Control Delay (s)	9.5	-	39	11.8	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.7	-	1.5	0.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	395	28	129	322	75	54	266	51	127	286	183
Future Volume (veh/h)	273	395	28	129	322	75	54	266	51	127	286	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	290	420	30	137	343	80	57	283	54	135	304	195
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	395	871	62	173	675	155	99	484	402	173	549	459
Arrive On Green	0.12	0.26	0.26	0.10	0.24	0.24	0.06	0.26	0.26	0.10	0.30	0.30
Sat Flow, veh/h	3428	3333	237	1767	2838	653	1767	1856	1544	1767	1856	1549
Grp Volume(v), veh/h	290	221	229	137	211	212	57	283	54	135	304	195
Grp Sat Flow(s),veh/h/ln	1714	1763	1808	1767	1763	1728	1767	1856	1544	1767	1856	1549
Q Serve(g_s), s	5.0	6.5	6.5	4.6	6.3	6.5	1.9	8.1	1.6	4.6	8.4	6.2
Cycle Q Clear(g_c), s	5.0	6.5	6.5	4.6	6.3	6.5	1.9	8.1	1.6	4.6	8.4	6.2
Prop In Lane	1.00		0.13	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	461	473	173	419	411	99	484	402	173	549	459
V/C Ratio(X)	0.73	0.48	0.48	0.79	0.50	0.52	0.57	0.59	0.13	0.78	0.55	0.43
Avail Cap(c_a), veh/h	438	866	889	197	838	821	145	918	764	313	1082	903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	19.0	19.1	26.9	20.1	20.2	28.1	19.7	17.3	26.9	18.1	17.3
Incr Delay (d2), s/veh	5.7	0.8	0.8	17.4	0.9	1.0	5.2	1.1	0.1	7.3	0.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.5	2.6	2.6	2.5	2.5	0.9	3.4	0.5	2.1	3.3	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	19.8	19.8	44.3	21.1	21.2	33.2	20.8	17.4	34.2	19.0	17.9
LnGrp LOS	C	B	B	D	C	C	C	C	B	C	B	B
Approach Vol, veh/h		740			560			394			634	
Approach Delay, s/veh		24.5			26.8			22.1			21.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	20.1	10.2	20.6	7.6	22.7	11.6	19.1
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 11	* 30	* 6.8	30.0	5.0	* 36	7.8	* 29
Max Q Clear Time (g_c+I1), s	6.6	10.1	6.6	8.5	3.9	10.4	7.0	8.5
Green Ext Time (p_c), s	0.1	1.8	0.0	2.5	0.0	2.4	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

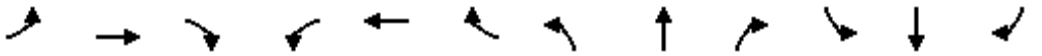
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	19	101	275	319	56
Future Vol, veh/h	12	19	101	275	319	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	160	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	21	113	309	358	63

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	893	358	421	0	-	0
Stage 1	358	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	311	684	1133	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	280	684	1133	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1133	-	280	684	-	-
HCM Lane V/C Ratio	0.1	-	0.048	0.031	-	-
HCM Control Delay (s)	8.5	-	18.5	10.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	319	23	124	243	66	46	207	45	76	162	122
Future Volume (veh/h)	172	319	23	124	243	66	46	207	45	76	162	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	176	326	23	127	248	67	47	211	46	78	165	124
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	719	50	164	534	141	137	382	323	126	354	297
Arrive On Green	0.10	0.22	0.22	0.09	0.19	0.19	0.08	0.21	0.21	0.07	0.19	0.19
Sat Flow, veh/h	3428	3339	234	1767	2757	729	1767	1856	1566	1767	1856	1560
Grp Volume(v), veh/h	176	171	178	127	157	158	47	211	46	78	165	124
Grp Sat Flow(s),veh/h/ln	1714	1763	1811	1767	1763	1723	1767	1856	1566	1767	1856	1560
Q Serve(g_s), s	2.0	3.5	3.5	2.9	3.3	3.4	1.0	4.2	1.0	1.8	3.3	2.9
Cycle Q Clear(g_c), s	2.0	3.5	3.5	2.9	3.3	3.4	1.0	4.2	1.0	1.8	3.3	2.9
Prop In Lane	1.00		0.13	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	359	379	390	164	341	334	137	382	323	126	354	297
V/C Ratio(X)	0.49	0.45	0.46	0.78	0.46	0.47	0.34	0.55	0.14	0.62	0.47	0.42
Avail Cap(c_a), veh/h	620	1275	1310	307	1262	1233	213	1378	1162	417	1574	1324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	14.1	14.2	18.4	14.8	14.9	18.1	14.8	13.5	18.7	14.9	14.8
Incr Delay (d2), s/veh	1.0	0.8	0.8	7.6	1.0	1.0	1.5	1.2	0.2	4.8	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.2	1.3	1.4	1.2	1.2	0.4	1.6	0.3	0.8	1.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	15.0	15.0	26.0	15.8	15.9	19.6	16.0	13.7	23.5	15.9	15.7
LnGrp LOS	B	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		525			442			304			367	
Approach Delay, s/veh		16.2			18.8			16.2			17.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	12.7	8.0	13.5	7.4	12.5	8.9	12.6
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9.8	* 31	* 7.2	30.0	5.0	* 35	7.5	* 30
Max Q Clear Time (g_c+I1), s	3.8	6.2	4.9	5.5	3.0	5.3	4.0	5.4
Green Ext Time (p_c), s	0.1	1.3	0.1	1.9	0.0	1.3	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	70	97
Average Queue (ft)	34	20
95th Queue (ft)	58	61
Link Distance (ft)	2595	2630
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	WB	NB	SB
Directions Served	L	R	T	LT
Maximum Queue (ft)	88	52	41	134
Average Queue (ft)	45	18	1	23
95th Queue (ft)	78	44	14	71
Link Distance (ft)	285		494	2602
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	65	63	74	30
Average Queue (ft)	27	23	43	5
95th Queue (ft)	45	44	72	21
Link Distance (ft)	556			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100	160	100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	176	129	317	252	190	185	260	160	273	156	165	314
Average Queue (ft)	109	68	153	54	112	89	129	45	122	29	86	163
95th Queue (ft)	163	127	245	163	176	164	198	97	222	90	155	276
Link Distance (ft)			636	636		304	304		570			587
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)			1		4	1		0	15		7	19
Queuing Penalty (veh)			4		6	1		1	16		34	60

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	84
95th Queue (ft)	153
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	0
Queuing Penalty (veh)	2

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	147	149	135	12	31	140	177	69	48	43	54	74
Average Queue (ft)	99	85	39	3	7	88	57	32	19	5	13	42
95th Queue (ft)	135	141	94	9	27	130	114	65	45	24	41	69
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	94	113
Average Queue (ft)	49	65
95th Queue (ft)	81	100
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 124

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	62	70
Average Queue (ft)	24	7
95th Queue (ft)	47	32
Link Distance (ft)	2595	2630
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	76	67	54
Average Queue (ft)	40	18	10
95th Queue (ft)	68	49	38
Link Distance (ft)	285		2602
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		160	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	24	20	72	24
Average Queue (ft)	7	8	26	1
95th Queue (ft)	25	23	59	8
Link Distance (ft)	556			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100	160	100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	140	99	223	175	173	175	158	160	184	156	101	140
Average Queue (ft)	77	33	123	38	74	57	91	38	100	24	40	64
95th Queue (ft)	118	73	200	114	145	105	142	105	163	70	87	125
Link Distance (ft)			636	636		312	312		570			588
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)			0		1	0			12		2	3
Queuing Penalty (veh)			0		1	0			11		5	5

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	48
95th Queue (ft)	93
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	133	142	133	31	50	182	226	49	49	71	30	72
Average Queue (ft)	71	63	22	3	12	71	44	15	15	4	6	31
95th Queue (ft)	108	106	75	15	37	118	112	40	42	26	24	62
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	74	97
Average Queue (ft)	40	54
95th Queue (ft)	63	93
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 23

Appendix G: Near Term No Project Traffic Conditions

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	46	309	111	74	416
Future Vol, veh/h	73	46	309	111	74	416
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	54	364	131	87	489

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1093	430	0	0	495	0
Stage 1	430	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	236	623	-	-	1064	-
Stage 1	654	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	210	623	-	-	1064	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	511	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.7	0	1.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	282	1064	-
HCM Lane V/C Ratio	-	-	0.496	0.082	-
HCM Control Delay (s)	-	-	29.7	8.7	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	2.6	0.3	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	36	451	148	55	455
Future Vol, veh/h	90	36	451	148	55	455
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	97	39	485	159	59	489

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1094	487	0	-	487	0
Stage 1	487	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	236	579	-	0	1071	-
Stage 1	616	-	-	0	-	-
Stage 2	542	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	218	578	-	-	1069	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.7	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	218	578	1069	-
HCM Lane V/C Ratio	-	0.444	0.067	0.055	-
HCM Control Delay (s)	-	34.1	11.7	8.6	0
HCM Lane LOS	-	D	B	A	A
HCM 95th %tile Q(veh)	-	2.1	0.2	0.2	-

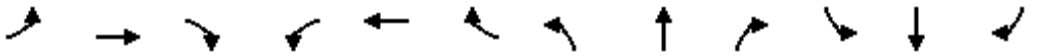
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	56	81	496	500	82
Future Vol, veh/h	55	56	81	496	500	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	59	60	86	528	532	87

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1276	576	619	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	183	515	956	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	515	956	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	491	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.1	1.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	253	-	-
HCM Lane V/C Ratio	0.09	-	0.467	-	-
HCM Control Delay (s)	9.1	-	31.1	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	2.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	423	28	129	333	61	54	272	51	132	310	217
Future Volume (veh/h)	313	423	28	129	333	61	54	272	51	132	310	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	333	450	30	137	354	65	57	289	54	140	330	231
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	226	687	46	167	499	91	73	803	679	163	897	758
Arrive On Green	0.13	0.20	0.20	0.09	0.17	0.17	0.04	0.43	0.43	0.09	0.48	0.48
Sat Flow, veh/h	1767	3353	223	1767	2978	541	1767	1856	1569	1767	1856	1568
Grp Volume(v), veh/h	333	236	244	137	208	211	57	289	54	140	330	231
Grp Sat Flow(s),veh/h/ln	1767	1763	1813	1767	1763	1756	1767	1856	1569	1767	1856	1568
Q Serve(g_s), s	12.8	12.3	12.4	7.6	11.1	11.4	3.2	10.5	2.0	7.8	11.2	5.1
Cycle Q Clear(g_c), s	12.8	12.3	12.4	7.6	11.1	11.4	3.2	10.5	2.0	7.8	11.2	5.1
Prop In Lane	1.00		0.12	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	361	372	167	295	294	73	803	679	163	897	758
V/C Ratio(X)	1.47	0.65	0.66	0.82	0.70	0.72	0.78	0.36	0.08	0.86	0.37	0.30
Avail Cap(c_a), veh/h	226	538	553	200	511	509	88	803	679	163	897	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	36.5	36.5	44.4	39.3	39.4	47.5	19.1	16.7	44.8	16.2	5.2
Incr Delay (d2), s/veh	234.9	2.0	2.0	20.1	3.1	3.3	30.0	1.3	0.2	34.6	1.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	5.4	5.6	4.2	5.0	5.1	2.0	4.7	0.7	4.9	4.8	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	278.5	38.5	38.5	64.5	42.4	42.7	77.4	20.3	16.9	79.3	17.4	6.2
LnGrp LOS	F	D	D	E	D	D	E	C	B	E	B	A
Approach Vol, veh/h		813			556			400			701	
Approach Delay, s/veh		136.8			47.9			28.0			26.1	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	47.9	13.6	25.1	8.3	52.9	17.4	21.3
Change Period (Y+Rc), s	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9.2	* 32	* 11	30.5	* 5	35.6	12.8	* 29
Max Q Clear Time (g_c+I1), s	9.8	12.5	9.6	14.4	5.2	13.2	14.8	13.4
Green Ext Time (p_c), s	0.0	1.8	0.1	2.5	0.0	2.7	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	67.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	445	34	9	349	51	40	40	6	82	30	495
Future Volume (vph)	570	445	34	9	349	51	40	40	6	82	30	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3295	1568	1752	3432		1752	3439		1665	1712	2696
Flt Permitted	0.44	0.64	1.00	0.95	1.00		0.95	1.00		0.72	0.90	1.00
Satd. Flow (perm)	746	2154	1568	1752	3432		1752	3439		1269	1579	2696
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	600	468	36	9	367	54	42	42	6	86	32	521
RTOR Reduction (vph)	0	0	14	0	8	0	0	5	0	0	0	442
Lane Group Flow (vph)	318	750	22	9	413	0	42	43	0	58	60	79
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	65.6	65.6	60.4	1.0	50.7		4.4	11.5		23.3	23.3	15.2
Effective Green, g (s)	65.6	65.6	60.4	1.0	50.7		4.4	11.5		23.3	23.3	15.2
Actuated g/C Ratio	0.66	0.66	0.60	0.01	0.51		0.04	0.12		0.23	0.23	0.15
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	592	1551	947	17	1740		77	395		327	378	409
v/s Ratio Prot	c0.06	0.06		0.01	0.12		c0.02	0.01		c0.01	0.01	
v/s Ratio Perm	c0.29	0.26	0.01							0.03	0.02	c0.03
v/c Ratio	0.54	0.48	0.02	0.53	0.24		0.55	0.11		0.18	0.16	0.19
Uniform Delay, d1	7.7	8.7	8.0	49.3	13.8		46.8	39.7		30.8	30.5	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.59	0.58	1.23
Incremental Delay, d2	0.9	0.2	0.0	26.7	0.3		7.7	0.1		0.2	0.2	0.2
Delay (s)	8.7	8.9	8.0	75.9	14.1		54.5	39.8		18.3	17.9	45.8
Level of Service	A	A	A	E	B		D	D		B	B	D
Approach Delay (s)		8.8			15.4			46.6			40.7	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	74	26	229	65	51	240
Future Vol, veh/h	74	26	229	65	51	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	30	266	76	59	279

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	701	304	0	0	342	0
Stage 1	304	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	403	733	-	-	1211	-
Stage 1	746	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	380	733	-	-	1211	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.3	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	1211	-
HCM Lane V/C Ratio	-	-	0.268	0.049	-
HCM Control Delay (s)	-	-	16.3	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	106	18	245	106	45	373
Future Vol, veh/h	106	18	245	106	45	373
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	119	20	275	119	51	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	798	277	0	-	277	0
Stage 1	277	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	354	759	-	0	1280	-
Stage 1	767	-	-	0	-	-
Stage 2	594	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	335	758	-	-	1278	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	335	758	1278	-
HCM Lane V/C Ratio	-	0.356	0.027	0.04	-
HCM Control Delay (s)	-	21.6	9.9	7.9	0
HCM Lane LOS	-	C	A	A	A
HCM 95th %tile Q(veh)	-	1.6	0.1	0.1	-

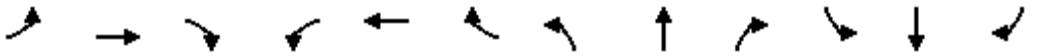
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	8	10	378	395	10
Future Vol, veh/h	10	8	10	378	395	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	9	11	425	444	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	897	450	455	0	-	0
Stage 1	450	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	309	607	1100	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	306	607	1100	-	-	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1100	-	393	-	-
HCM Lane V/C Ratio	0.01	-	0.051	-	-
HCM Control Delay (s)	8.3	-	14.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



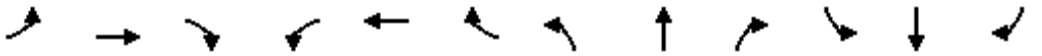
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	341	23	124	256	52	46	197	45	80	184	160
Future Volume (veh/h)	201	341	23	124	256	52	46	197	45	80	184	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	205	348	23	127	261	53	47	201	46	82	188	163
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	258	839	55	162	547	109	95	363	306	127	380	320
Arrive On Green	0.15	0.25	0.25	0.09	0.19	0.19	0.05	0.20	0.20	0.07	0.20	0.20
Sat Flow, veh/h	1767	3356	221	1767	2926	585	1767	1856	1565	1767	1856	1561
Grp Volume(v), veh/h	205	182	189	127	156	158	47	201	46	82	188	163
Grp Sat Flow(s),veh/h/ln	1767	1763	1814	1767	1763	1748	1767	1856	1565	1767	1856	1561
Q Serve(g_s), s	4.9	3.8	3.8	3.1	3.5	3.6	1.1	4.3	1.1	2.0	3.9	4.1
Cycle Q Clear(g_c), s	4.9	3.8	3.8	3.1	3.5	3.6	1.1	4.3	1.1	2.0	3.9	4.1
Prop In Lane	1.00		0.12	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	441	454	162	329	327	95	363	306	127	380	320
V/C Ratio(X)	0.80	0.41	0.42	0.78	0.47	0.49	0.49	0.55	0.15	0.65	0.49	0.51
Avail Cap(c_a), veh/h	313	1241	1277	233	1161	1152	201	1302	1099	405	1500	1262
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	13.8	13.8	19.6	16.0	16.0	20.3	16.0	14.7	19.9	15.5	15.5
Incr Delay (d2), s/veh	11.2	0.6	0.6	10.5	1.1	1.1	3.9	1.3	0.2	5.4	1.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	1.3	1.4	1.6	1.3	1.3	0.5	1.7	0.3	0.9	1.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	14.4	14.4	30.1	17.0	17.1	24.2	17.3	14.9	25.3	16.5	16.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		576			441			294			433	
Approach Delay, s/veh		19.7			20.8			18.0			18.3	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	12.8	8.2	15.6	6.6	13.6	11.0	12.8
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 10	* 31	* 5.8	31.0	5.0	* 36	7.8	* 29
Max Q Clear Time (g_c+I1), s	4.0	6.3	5.1	5.8	3.1	6.1	6.9	5.6
Green Ext Time (p_c), s	0.1	1.3	0.0	2.1	0.0	1.6	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	421	220	27	8	253	39	21	28	1	61	20	380
Future Volume (vph)	421	220	27	8	253	39	21	28	1	61	20	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3277	1568	1752	3429		1752	3487		1665	1710	2700
Flt Permitted	0.44	0.64	1.00	0.95	1.00		0.95	1.00		0.74	0.90	1.00
Satd. Flow (perm)	741	2133	1568	1752	3429		1752	3487		1291	1577	2700
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	434	227	28	8	261	40	22	29	1	63	21	392
RTOR Reduction (vph)	0	0	17	0	14	0	0	1	0	0	0	304
Lane Group Flow (vph)	217	444	11	8	287	0	22	29	0	42	42	88
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	25.7	25.7	21.0	0.5	16.0		0.5	9.6		14.5	14.5	11.8
Effective Green, g (s)	25.7	25.7	21.0	0.5	16.0		0.5	9.6		14.5	14.5	11.8
Actuated g/C Ratio	0.49	0.49	0.40	0.01	0.30		0.01	0.18		0.27	0.27	0.22
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	472	1187	623	16	1039		16	634		373	439	603
v/s Ratio Prot	c0.06	0.05		0.00	0.08		c0.01	0.01		0.01	c0.00	
v/s Ratio Perm	c0.16	0.13	0.01							0.03	0.02	c0.03
v/c Ratio	0.46	0.37	0.02	0.50	0.28		1.38	0.05		0.11	0.10	0.15
Uniform Delay, d1	8.3	8.5	9.6	26.0	14.0		26.1	17.8		14.4	14.3	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.0	22.5	0.1		361.4	0.0		0.1	0.1	0.1
Delay (s)	9.0	8.7	9.7	48.5	14.1		387.5	17.9		14.5	14.4	16.6
Level of Service	A	A	A	D	B		F	B		B	B	B
Approach Delay (s)		8.8			15.0			174.3			16.2	
Approach LOS		A			B			F			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	46	309	111	74	416
Future Vol, veh/h	73	46	309	111	74	416
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	54	364	131	87	489
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	11.5	18.4	26.5
HCM LOS	B	C	D

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	61%	15%
Vol Thru, %	74%	0%	85%
Vol Right, %	26%	39%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	420	119	490
LT Vol	0	73	74
Through Vol	309	0	416
RT Vol	111	46	0
Lane Flow Rate	494	140	576
Geometry Grp	1	1	1
Degree of Util (X)	0.688	0.247	0.814
Departure Headway (Hd)	5.009	6.345	5.085
Convergence, Y/N	Yes	Yes	Yes
Cap	721	566	715
Service Time	3.042	4.391	3.114
HCM Lane V/C Ratio	0.685	0.247	0.806
HCM Control Delay	18.4	11.5	26.5
HCM Lane LOS	C	B	D
HCM 95th-tile Q	5.5	1	8.6

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	136	644	548
Demand Flow Rate, veh/h	140	664	565
Vehicles Circulating, veh/h	500	61	100
Vehicles Exiting, veh/h	225	604	540
Ped Vol Crossing Leg, #/h	5	0	0
Ped Cap Adj	0.999	1.000	1.000
Approach Delay, s/veh	6.2	8.4	7.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	140	664	565
Cap Entry Lane, veh/h	829	1297	1246
Entry HV Adj Factor	0.971	0.971	0.970
Flow Entry, veh/h	136	644	548
Cap Entry, veh/h	804	1258	1209
V/C Ratio	0.169	0.512	0.453
Control Delay, s/veh	6.2	8.4	7.7
LOS	A	A	A
95th %tile Queue, veh	1	3	2

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	56	81	496	500	82
Future Vol, veh/h	55	56	81	496	500	82
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	160	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	59	60	86	528	532	87

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1237	537	624	0	-	0
Stage 1	537	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	193	542	952	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	174	539	947	-	-	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	947	-	174	539	-	-
HCM Lane V/C Ratio	0.091	-	0.336	0.111	-	-
HCM Control Delay (s)	9.2	-	35.8	12.5	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1.4	0.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	423	28	129	333	61	54	272	51	132	310	217
Future Volume (veh/h)	313	423	28	129	333	61	54	272	51	132	310	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	333	450	30	137	354	65	57	289	54	140	330	231
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	422	905	60	162	691	125	88	483	402	178	577	482
Arrive On Green	0.12	0.27	0.27	0.09	0.23	0.23	0.05	0.26	0.26	0.10	0.31	0.31
Sat Flow, veh/h	3428	3351	223	1767	2973	540	1767	1856	1543	1767	1856	1550
Grp Volume(v), veh/h	333	236	244	137	208	211	57	289	54	140	330	231
Grp Sat Flow(s),veh/h/ln	1714	1763	1811	1767	1763	1750	1767	1856	1543	1767	1856	1550
Q Serve(g_s), s	6.0	7.2	7.2	4.8	6.5	6.7	2.0	8.7	1.7	4.9	9.5	4.7
Cycle Q Clear(g_c), s	6.0	7.2	7.2	4.8	6.5	6.7	2.0	8.7	1.7	4.9	9.5	4.7
Prop In Lane	1.00		0.12	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	476	489	162	410	407	88	483	402	178	577	482
V/C Ratio(X)	0.79	0.50	0.50	0.85	0.51	0.52	0.65	0.60	0.13	0.79	0.57	0.48
Avail Cap(c_a), veh/h	422	862	885	162	806	800	139	942	784	245	1042	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	19.5	19.5	28.4	21.2	21.2	29.6	20.5	18.0	27.9	18.3	6.6
Incr Delay (d2), s/veh	9.7	0.8	0.8	32.1	1.0	1.0	7.7	1.2	0.2	11.0	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.8	2.9	3.4	2.6	2.6	1.0	3.6	0.6	2.5	3.8	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	20.3	20.3	60.5	22.2	22.3	37.2	21.7	18.1	38.9	19.2	7.3
LnGrp LOS	D	C	C	E	C	C	D	C	B	D	B	A
Approach Vol, veh/h		813			556			400			701	
Approach Delay, s/veh		27.0			31.6			23.5			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	21.1	10.0	21.7	7.4	24.3	12.4	19.3
Change Period (Y+Rc), s	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 8.8	* 32	* 5.8	31.0	* 5	35.6	7.8	* 29
Max Q Clear Time (g_c+I1), s	6.9	10.7	6.8	9.2	4.0	11.5	8.0	8.7
Green Ext Time (p_c), s	0.1	1.8	0.0	2.7	0.0	2.8	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	74	26	229	65	51	240
Future Vol, veh/h	74	26	229	65	51	240
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	30	266	76	59	279
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.7	10.9	11.4
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	74%	18%
Vol Thru, %	78%	0%	82%
Vol Right, %	22%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	294	100	291
LT Vol	0	74	51
Through Vol	229	0	240
RT Vol	65	26	0
Lane Flow Rate	342	116	338
Geometry Grp	1	1	1
Degree of Util (X)	0.429	0.176	0.44
Departure Headway (Hd)	4.519	5.44	4.677
Convergence, Y/N	Yes	Yes	Yes
Cap	793	655	768
Service Time	2.564	3.512	2.723
HCM Lane V/C Ratio	0.431	0.177	0.44
HCM Control Delay	10.9	9.7	11.4
HCM Lane LOS	B	A	B
HCM 95th-tile Q	2.2	0.6	2.3

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	139	394	470
Demand Flow Rate, veh/h	144	406	485
Vehicles Circulating, veh/h	283	53	123
Vehicles Exiting, veh/h	176	555	304
Ped Vol Crossing Leg, #/h	2	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.9	5.7	7.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	144	406	485
Cap Entry Lane, veh/h	1034	1307	1217
Entry HV Adj Factor	0.965	0.970	0.970
Flow Entry, veh/h	139	394	470
Cap Entry, veh/h	998	1268	1181
V/C Ratio	0.139	0.311	0.398
Control Delay, s/veh	4.9	5.7	7.0
LOS	A	A	A
95th %tile Queue, veh	0	1	2

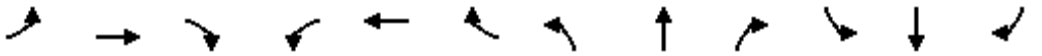
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	8	10	378	395	10
Future Vol, veh/h	10	8	10	378	395	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	160	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	9	11	425	444	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	891	444	455	0	-	0
Stage 1	444	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	312	612	1100	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	309	612	1100	-	-	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1100	-	309	612	-	-
HCM Lane V/C Ratio	0.01	-	0.036	0.015	-	-
HCM Control Delay (s)	8.3	-	17.1	11	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	341	23	124	256	52	46	197	45	80	184	160
Future Volume (veh/h)	201	341	23	124	256	52	46	197	45	80	184	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	205	348	23	127	261	53	47	201	46	82	188	163
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	374	734	48	164	563	113	96	371	313	130	389	327
Arrive On Green	0.11	0.22	0.22	0.09	0.19	0.19	0.05	0.20	0.20	0.07	0.21	0.21
Sat Flow, veh/h	3428	3356	221	1767	2927	585	1767	1856	1565	1767	1856	1561
Grp Volume(v), veh/h	205	182	189	127	156	158	47	201	46	82	188	163
Grp Sat Flow(s),veh/h/ln	1714	1763	1814	1767	1763	1749	1767	1856	1565	1767	1856	1561
Q Serve(g_s), s	2.3	3.7	3.8	2.9	3.2	3.3	1.1	4.0	1.0	1.9	3.7	3.8
Cycle Q Clear(g_c), s	2.3	3.7	3.8	2.9	3.2	3.3	1.1	4.0	1.0	1.9	3.7	3.8
Prop In Lane	1.00		0.12	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	385	396	164	339	337	96	371	313	130	389	327
V/C Ratio(X)	0.55	0.47	0.48	0.78	0.46	0.47	0.49	0.54	0.15	0.63	0.48	0.50
Avail Cap(c_a), veh/h	579	1276	1312	307	1284	1274	213	1365	1152	431	1576	1326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	14.1	14.1	18.4	14.8	14.9	19.0	14.9	13.7	18.7	14.4	14.5
Incr Delay (d2), s/veh	1.2	0.9	0.9	7.6	1.0	1.0	3.8	1.2	0.2	4.9	0.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.3	1.3	1.4	1.1	1.2	0.5	1.6	0.3	0.8	1.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	15.0	15.0	26.0	15.8	15.9	22.8	16.1	13.9	23.6	15.3	15.6
LnGrp LOS	B	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		576			441			294			433	
Approach Delay, s/veh		16.3			18.8			16.8			17.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	12.5	8.0	13.7	6.5	13.3	9.1	12.6
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 10	* 31	* 7.2	30.0	5.0	* 35	7.0	* 30
Max Q Clear Time (g_c+I1), s	3.9	6.0	4.9	5.8	3.1	5.8	4.3	5.3
Green Ext Time (p_c), s	0.1	1.3	0.1	2.1	0.0	1.6	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	78	77	104
Average Queue (ft)	34	49	63
95th Queue (ft)	60	72	94
Link Distance (ft)	2595	2585	2630
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	74	101	96
Average Queue (ft)	25	26	21
95th Queue (ft)	60	77	62
Link Distance (ft)	257	742	2585
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	92	61	70	101
Average Queue (ft)	27	21	27	5
95th Queue (ft)	62	43	59	36
Link Distance (ft)	555			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100	160	100
Storage Blk Time (%)	0			0
Queuing Penalty (veh)	0			1

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	231	237	307	250	216	207	244	160	244	160	165	346
Average Queue (ft)	131	76	176	89	134	97	126	59	130	30	108	171
95th Queue (ft)	203	173	272	220	221	175	197	127	209	93	171	324
Link Distance (ft)			636	636		300	300		570			584
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)	0	0	3		20	0		2	16	0	17	14
Queuing Penalty (veh)	0	0	9		33	0		5	17	0	91	50

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	87
95th Queue (ft)	160
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	1
Queuing Penalty (veh)	4

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	243	186	138	26	52	180	177	72	49	24	54	87
Average Queue (ft)	135	113	67	5	12	107	87	28	17	5	17	43
95th Queue (ft)	211	177	137	13	40	165	166	64	44	18	46	78
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						2						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	98	140
Average Queue (ft)	51	71
95th Queue (ft)	86	110
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 212

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	73	98	79
Average Queue (ft)	30	47	48
95th Queue (ft)	46	76	75
Link Distance (ft)	2595	2585	2630
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	53	89	56
Average Queue (ft)	9	12	18
95th Queue (ft)	34	52	52
Link Distance (ft)	257	742	2585
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	24	19	29
Average Queue (ft)	8	5	2
95th Queue (ft)	27	18	13
Link Distance (ft)	555		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	160
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	118	121	241	222	115	102	153	158	182	160	164	262
Average Queue (ft)	79	38	121	40	65	54	89	40	99	32	60	99
95th Queue (ft)	119	86	213	119	99	89	136	92	171	91	124	204
Link Distance (ft)			636	636		302	302		570			590
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)			1					0	10		0	5
Queuing Penalty (veh)			2					0	9		1	11

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	62
95th Queue (ft)	124
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	152	122	58	8	52	134	131	69	49	18	30	110
Average Queue (ft)	76	62	15	3	10	74	44	18	14	1	4	37
95th Queue (ft)	119	102	40	8	35	129	91	46	38	6	20	71
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	74	114
Average Queue (ft)	42	55
95th Queue (ft)	66	91
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 25

Appendix H: Near Term plus Project Traffic Conditions

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	46	313	113	74	434
Future Vol, veh/h	86	46	313	113	74	434
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	101	54	368	133	87	511

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1120	435	0	0	501	0
Stage 1	435	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	227	619	-	-	1058	-
Stage 1	650	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	201	619	-	-	1058	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	442	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.7	0	1.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	263	1058	-
HCM Lane V/C Ratio	-	-	0.59	0.082	-
HCM Control Delay (s)	-	-	36.7	8.7	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	3.4	0.3	-

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	36	457	151	55	486
Future Vol, veh/h	109	36	457	151	55	486
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	117	39	491	162	59	523

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1137	496	0	-	496	0
Stage 1	496	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	222	572	-	0	1063	-
Stage 1	610	-	-	0	-	-
Stage 2	523	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	203	569	-	-	1058	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.4	0	0.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	203	569	1058	-
HCM Lane V/C Ratio	-	0.577	0.068	0.056	-
HCM Control Delay (s)	-	44.5	11.8	8.6	0
HCM Lane LOS	-	E	B	A	A
HCM 95th %tile Q(veh)	-	3.2	0.2	0.2	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	66	166	496	506	132
Future Vol, veh/h	62	66	166	496	506	132
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	66	70	177	528	538	140

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1495	613	683	0	-	0
Stage 1	613	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	135	491	905	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	489	901	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	401	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	70.2	2.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	901	-	179	-	-
HCM Lane V/C Ratio	0.196	-	0.761	-	-
HCM Control Delay (s)	10	-	70.2	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0.7	-	5	-	-

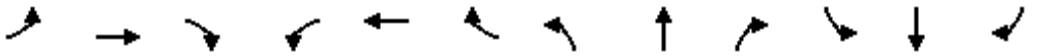
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	423	28	129	333	83	54	309	51	136	316	224
Future Volume (veh/h)	347	423	28	129	333	83	54	309	51	136	316	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	369	450	30	137	354	88	57	329	54	145	336	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	300	921	61	167	548	134	368	694	581	163	472	393
Arrive On Green	0.17	0.27	0.27	0.09	0.20	0.20	0.21	0.37	0.37	0.09	0.25	0.25
Sat Flow, veh/h	1767	3351	223	1767	2791	684	1767	1856	1552	1767	1856	1545
Grp Volume(v), veh/h	369	236	244	137	222	220	57	329	54	145	336	238
Grp Sat Flow(s),veh/h/ln	1767	1763	1811	1767	1763	1711	1767	1856	1552	1767	1856	1545
Q Serve(g_s), s	17.8	11.8	11.9	8.0	12.1	12.5	2.8	14.2	2.4	8.5	17.3	14.3
Cycle Q Clear(g_c), s	17.8	11.8	11.9	8.0	12.1	12.5	2.8	14.2	2.4	8.5	17.3	14.3
Prop In Lane	1.00		0.12	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	485	498	167	346	336	368	694	581	163	472	393
V/C Ratio(X)	1.23	0.49	0.49	0.82	0.64	0.66	0.15	0.47	0.09	0.89	0.71	0.61
Avail Cap(c_a), veh/h	300	520	535	266	487	473	368	694	581	163	629	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	31.9	31.9	46.6	38.8	38.9	34.0	25.0	21.3	47.1	35.6	34.5
Incr Delay (d2), s/veh	129.9	0.8	0.7	10.3	2.0	2.2	0.2	2.3	0.3	40.2	8.8	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	5.0	5.2	3.9	5.3	5.3	1.2	6.6	0.9	5.5	8.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	173.5	32.6	32.6	56.9	40.8	41.1	34.2	27.3	21.6	87.3	44.5	41.3
LnGrp LOS	F	C	C	E	D	D	C	C	C	F	D	D
Approach Vol, veh/h		849			579			440			719	
Approach Delay, s/veh		93.9			44.7			27.5			52.0	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	43.5	14.2	33.5	26.1	31.3	22.4	25.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9.7	* 31	* 16	31.0	5.0	* 36	17.8	* 29
Max Q Clear Time (g_c+I1), s	10.5	16.2	10.0	13.9	4.8	19.3	19.8	14.5
Green Ext Time (p_c), s	0.0	1.9	0.2	2.5	0.0	2.5	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	60.0
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	604	445	34	9	349	51	40	40	6	82	30	502
Future Volume (vph)	604	445	34	9	349	51	40	40	6	82	30	502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3292	1568	1752	3437		1752	3433		1665	1712	2760
Flt Permitted	0.41	0.62	1.00	0.95	1.00		0.95	1.00		0.63	0.89	1.00
Satd. Flow (perm)	682	2084	1568	1752	3437		1752	3433		1109	1556	2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	636	468	36	9	367	54	42	42	6	86	32	528
RTOR Reduction (vph)	0	0	14	0	11	0	0	5	0	0	0	457
Lane Group Flow (vph)	331	773	22	9	410	0	42	43	0	58	60	71
Confl. Peds. (#/hr)									3			
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	58.0	58.0	58.0	1.0	39.7		4.3	11.1		18.6	18.6	12.7
Effective Green, g (s)	58.0	58.0	58.0	1.0	39.7		4.3	11.1		18.6	18.6	12.7
Actuated g/C Ratio	0.61	0.61	0.61	0.01	0.42		0.05	0.12		0.20	0.20	0.13
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	615	1535	957	18	1436		79	401		251	314	368
v/s Ratio Prot	c0.12	0.11		0.01	c0.12		c0.02	0.01		0.01	0.01	
v/s Ratio Perm	c0.21	0.20	0.01							c0.03	0.03	0.03
v/c Ratio	0.54	0.50	0.02	0.50	0.29		0.53	0.11		0.23	0.19	0.19
Uniform Delay, d1	9.6	10.4	7.3	46.8	18.3		44.4	37.5		31.8	31.9	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.3	0.0	20.2	0.5		6.7	0.1		0.5	0.3	0.3
Delay (s)	10.5	10.7	7.4	66.9	18.8		51.1	37.6		32.3	32.2	36.8
Level of Service	B	B	A	E	B		D	D		C	C	D
Approach Delay (s)		10.5			19.8			43.9			36.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	26	233	67	51	259
Future Vol, veh/h	88	26	233	67	51	259
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	102	30	271	78	59	301

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	729	310	0	0	349	0
Stage 1	310	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	388	728	-	-	1204	-
Stage 1	741	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	365	728	-	-	1204	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	622	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.8	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	412	1204	-
HCM Lane V/C Ratio	-	-	0.322	0.049	-
HCM Control Delay (s)	-	-	17.8	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	127	18	251	109	45	406
Future Vol, veh/h	127	18	251	109	45	406
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	160	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	143	20	282	122	51	456

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	842	284	0	-	284	0
Stage 1	284	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	333	753	-	0	1273	-
Stage 1	762	-	-	0	-	-
Stage 2	571	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	314	752	-	-	1271	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.7	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	314	752	1271	-
HCM Lane V/C Ratio	-	0.454	0.027	0.04	-
HCM Control Delay (s)	-	25.7	9.9	8	0
HCM Lane LOS	-	D	A	A	A
HCM 95th %tile Q(veh)	-	2.3	0.1	0.1	-

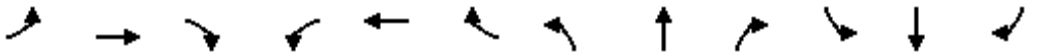
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	19	101	378	401	64
Future Vol, veh/h	17	19	101	378	401	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	19	21	113	425	451	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1138	487	523	0	-	0
Stage 1	487	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	222	579	1038	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	198	579	1038	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1038	-	303	-	-
HCM Lane V/C Ratio	0.109	-	0.133	-	-
HCM Control Delay (s)	8.9	-	18.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	341	23	124	256	75	46	237	45	84	191	167
Future Volume (veh/h)	237	341	23	124	256	75	46	237	45	84	191	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	242	348	23	127	261	77	47	242	46	86	195	170
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	295	912	60	163	509	147	128	394	332	125	375	316
Arrive On Green	0.17	0.27	0.27	0.09	0.19	0.19	0.07	0.21	0.21	0.07	0.20	0.20
Sat Flow, veh/h	1767	3356	221	1767	2697	779	1767	1856	1566	1767	1856	1561
Grp Volume(v), veh/h	242	182	189	127	169	169	47	242	46	86	195	170
Grp Sat Flow(s),veh/h/ln	1767	1763	1814	1767	1763	1713	1767	1856	1566	1767	1856	1561
Q Serve(g_s), s	6.4	4.1	4.1	3.4	4.2	4.3	1.2	5.8	0.8	2.3	4.6	4.8
Cycle Q Clear(g_c), s	6.4	4.1	4.1	3.4	4.2	4.3	1.2	5.8	0.8	2.3	4.6	4.8
Prop In Lane	1.00		0.12	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	479	493	163	333	323	128	394	332	125	375	316
V/C Ratio(X)	0.82	0.38	0.38	0.78	0.51	0.52	0.37	0.61	0.14	0.69	0.52	0.54
Avail Cap(c_a), veh/h	319	1093	1125	276	1049	1020	181	1169	987	374	1356	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	14.4	14.4	21.6	17.7	17.8	21.5	17.4	6.9	22.1	17.3	17.4
Incr Delay (d2), s/veh	14.5	0.5	0.5	7.8	1.2	1.3	1.8	1.6	0.2	6.6	1.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	1.4	1.5	1.6	1.6	1.6	0.5	2.3	0.4	1.1	1.8	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	14.9	14.9	29.4	18.9	19.1	23.3	19.0	7.1	28.7	18.4	18.8
LnGrp LOS	C	B	B	C	B	B	C	B	A	C	B	B
Approach Vol, veh/h		613			465			335			451	
Approach Delay, s/veh		22.5			21.8			17.9			20.5	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	14.5	8.7	17.8	7.7	14.5	12.7	13.8
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 10	* 31	* 7.6	30.2	5.0	* 36	8.8	* 29
Max Q Clear Time (g_c+I1), s	4.3	7.8	5.4	6.1	3.2	6.8	8.4	6.3
Green Ext Time (p_c), s	0.1	1.5	0.1	2.1	0.0	1.7	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	220	27	8	253	39	21	28	1	61	20	387
Future Volume (vph)	457	220	27	8	253	39	21	28	1	61	20	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	0.98	1.00
Satd. Flow (prot)	1595	3274	1568	1752	3429		1752	3487		1665	1710	2697
Flt Permitted	0.52	0.66	1.00	0.95	1.00		0.95	1.00		0.44	0.84	1.00
Satd. Flow (perm)	881	2202	1568	1752	3429		1752	3487		774	1469	2697
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	471	227	28	8	261	40	22	29	1	63	21	399
RTOR Reduction (vph)	0	0	11	0	9	0	0	1	0	0	0	337
Lane Group Flow (vph)	235	463	17	8	292	0	22	29	0	42	42	62
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	63.7	63.7	58.5	1.0	52.3		2.6	13.1		14.9	14.9	14.9
Effective Green, g (s)	63.7	63.7	58.5	1.0	52.3		2.6	13.1		14.9	14.9	14.9
Actuated g/C Ratio	0.66	0.66	0.61	0.01	0.54		0.03	0.14		0.16	0.16	0.16
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	648	1557	955	18	1868		47	475		160	239	418
v/s Ratio Prot	c0.03	0.03		0.00	0.09		c0.01	0.01		c0.01	0.01	
v/s Ratio Perm	c0.21	0.17	0.01							c0.03	0.02	0.02
v/c Ratio	0.36	0.30	0.02	0.44	0.16		0.47	0.06		0.26	0.18	0.15
Uniform Delay, d1	6.5	6.8	7.4	47.2	10.9		46.0	36.1		35.2	35.2	35.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0	16.5	0.2		7.2	0.1		0.9	0.4	0.2
Delay (s)	6.8	6.9	7.4	63.7	11.1		53.2	36.2		36.1	35.6	35.2
Level of Service	A	A	A	E	B		D	D		D	D	D
Approach Delay (s)		6.9			12.4			43.4			35.3	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	24.4
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	46	313	113	74	434
Future Vol, veh/h	86	46	313	113	74	434
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	101	54	368	133	87	511
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12	19.9	31.4
HCM LOS	B	C	D

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	65%	15%
Vol Thru, %	73%	0%	85%
Vol Right, %	27%	35%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	426	132	508
LT Vol	0	86	74
Through Vol	313	0	434
RT Vol	113	46	0
Lane Flow Rate	501	155	598
Geometry Grp	1	1	1
Degree of Util (X)	0.713	0.279	0.859
Departure Headway (Hd)	5.119	6.467	5.174
Convergence, Y/N	Yes	Yes	Yes
Cap	707	554	699
Service Time	3.158	4.523	3.21
HCM Lane V/C Ratio	0.709	0.28	0.856
HCM Control Delay	19.9	12	31.4
HCM Lane LOS	C	B	D
HCM 95th-tile Q	6	1.1	10

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	156	653	582
Demand Flow Rate, veh/h	161	673	600
Vehicles Circulating, veh/h	506	61	121
Vehicles Exiting, veh/h	228	660	546
Ped Vol Crossing Leg, #/h	5	0	0
Ped Cap Adj	0.999	1.000	1.000
Approach Delay, s/veh	6.6	8.5	8.4
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	161	673	600
Cap Entry Lane, veh/h	824	1297	1220
Entry HV Adj Factor	0.969	0.971	0.971
Flow Entry, veh/h	156	653	582
Cap Entry, veh/h	797	1259	1184
V/C Ratio	0.196	0.519	0.492
Control Delay, s/veh	6.6	8.5	8.4
LOS	A	A	A
95th %tile Queue, veh	1	3	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	66	166	496	506	132
Future Volume (veh/h)	62	66	166	496	506	132
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.99
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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	66	70	177	528	538	140
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	180	160	233	1225	749	631
Arrive On Green	0.10	0.10	0.13	0.66	0.40	0.40
Sat Flow, veh/h	1767	1572	1767	1856	1856	1563
Grp Volume(v), veh/h	66	70	177	528	538	140
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1563
Q Serve(g_s), s	1.3	1.5	3.6	5.0	9.0	2.2
Cycle Q Clear(g_c), s	1.3	1.5	3.6	5.0	9.0	2.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	180	160	233	1225	749	631
V/C Ratio(X)	0.37	0.44	0.76	0.43	0.72	0.22
Avail Cap(c_a), veh/h	908	808	612	2420	1566	1319
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	15.5	15.6	15.5	3.0	9.3	7.2
Incr Delay (d2), s/veh	1.2	1.9	5.0	0.2	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	1.5	0.4	2.6	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.7	17.5	20.5	3.2	10.6	7.4
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	136			705	678	
Approach Delay, s/veh	17.1			7.6	9.9	
Approach LOS	B			A	A	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	29.0		8.0	9.5	19.5
Change Period (Y+Rc), s	4.6		* 4.2	4.6	* 4.6
Max Green Setting (Gmax), s	48.2		* 19	12.8	* 31
Max Q Clear Time (g_c+I1), s	7.0		3.5	5.6	11.0
Green Ext Time (p_c), s	3.7		0.3	0.3	3.8

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	423	28	129	333	83	54	309	51	136	316	224
Future Volume (veh/h)	347	423	28	129	333	83	54	309	51	136	316	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	369	450	30	137	354	88	57	329	54	145	336	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	411	830	55	193	664	163	120	510	425	183	565	472
Arrive On Green	0.12	0.25	0.25	0.11	0.24	0.24	0.07	0.28	0.28	0.10	0.30	0.30
Sat Flow, veh/h	3428	3350	223	1767	2798	686	1767	1856	1545	1767	1856	1549
Grp Volume(v), veh/h	369	236	244	137	221	221	57	329	54	145	336	238
Grp Sat Flow(s),veh/h/ln	1714	1763	1810	1767	1763	1722	1767	1856	1545	1767	1856	1549
Q Serve(g_s), s	6.9	7.6	7.6	4.9	7.1	7.3	2.0	10.2	1.7	5.2	10.0	8.2
Cycle Q Clear(g_c), s	6.9	7.6	7.6	4.9	7.1	7.3	2.0	10.2	1.7	5.2	10.0	8.2
Prop In Lane	1.00		0.12	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	437	448	193	418	408	120	510	425	183	565	472
V/C Ratio(X)	0.90	0.54	0.54	0.71	0.53	0.54	0.48	0.64	0.13	0.79	0.59	0.50
Avail Cap(c_a), veh/h	411	861	885	193	785	767	136	912	760	244	1015	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	21.3	21.3	28.0	21.7	21.7	29.2	20.8	17.7	28.5	19.2	18.6
Incr Delay (d2), s/veh	21.9	1.0	1.0	11.4	1.0	1.1	2.9	1.4	0.1	12.0	1.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	3.0	3.1	2.5	2.8	2.8	0.9	4.3	0.6	2.7	4.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	22.3	22.3	39.4	22.7	22.8	32.1	22.2	17.9	40.5	20.2	19.4
LnGrp LOS	D	C	C	D	C	C	C	C	B	D	C	B
Approach Vol, veh/h		849			579			440			719	
Approach Delay, s/veh		34.4			26.7			22.9			24.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	22.1	11.3	20.7	8.6	24.4	12.0	20.0
Change Period (Y+Rc), s	* 4.2	* 4.2	4.2	* 4.6	4.2	* 4.6	4.2	* 4.6
Max Green Setting (Gmax), s	* 8	* 32	5.0	* 32	5.0	* 36	7.8	* 29
Max Q Clear Time (g_c+I1), s	7.2	12.2	6.9	9.6	4.0	12.0	8.9	9.3
Green Ext Time (p_c), s	0.1	2.1	0.0	2.7	0.0	2.8	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	26	233	67	51	259
Future Vol, veh/h	88	26	233	67	51	259
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	102	30	271	78	59	301
Number of Lanes	1	0	1	0	0	1

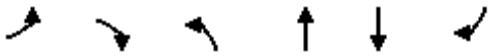
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	10.1	11.3	12.1
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	77%	16%
Vol Thru, %	78%	0%	84%
Vol Right, %	22%	23%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	300	114	310
LT Vol	0	88	51
Through Vol	233	0	259
RT Vol	67	26	0
Lane Flow Rate	349	133	360
Geometry Grp	1	1	1
Degree of Util (X)	0.446	0.204	0.475
Departure Headway (Hd)	4.6	5.539	4.741
Convergence, Y/N	Yes	Yes	Yes
Cap	778	642	757
Service Time	2.655	3.623	2.797
HCM Lane V/C Ratio	0.449	0.207	0.476
HCM Control Delay	11.3	10.1	12.1
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.3	0.8	2.6

Intersection	
Intersection Delay, s/veh	6.6
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	163	404	507
Demand Flow Rate, veh/h	168	416	523
Vehicles Circulating, veh/h	290	53	147
Vehicles Exiting, veh/h	179	617	311
Ped Vol Crossing Leg, #/h	2	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.1	5.7	7.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	168	416	523
Cap Entry Lane, veh/h	1027	1307	1188
Entry HV Adj Factor	0.970	0.970	0.970
Flow Entry, veh/h	163	404	507
Cap Entry, veh/h	996	1268	1152
V/C Ratio	0.164	0.318	0.440
Control Delay, s/veh	5.1	5.7	7.8
LOS	A	A	A
95th %tile Queue, veh	1	1	2



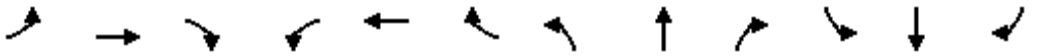
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	19	101	378	401	64
Future Volume (veh/h)	17	19	101	378	401	64
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	19	21	113	425	451	72
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	84	75	185	1184	712	603
Arrive On Green	0.05	0.05	0.10	0.64	0.38	0.38
Sat Flow, veh/h	1767	1572	1767	1856	1856	1572
Grp Volume(v), veh/h	19	21	113	425	451	72
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1572
Q Serve(g_s), s	0.3	0.4	1.7	3.0	5.5	0.8
Cycle Q Clear(g_c), s	0.3	0.4	1.7	3.0	5.5	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	84	75	185	1184	712	603
V/C Ratio(X)	0.23	0.28	0.61	0.36	0.63	0.12
Avail Cap(c_a), veh/h	1199	1067	871	3857	2664	2258
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	12.8	12.9	12.0	2.4	7.0	5.6
Incr Delay (d2), s/veh	1.3	2.0	3.3	0.2	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.6	0.1	1.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.2	14.9	15.3	2.6	8.0	5.7
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	40			538	523	
Approach Delay, s/veh	14.5			5.2	7.7	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		22.5		5.5	7.1	15.3
Change Period (Y+Rc), s		4.6		* 4.2	* 4.2	4.6
Max Green Setting (Gmax), s		58.2		* 19	* 14	40.2
Max Q Clear Time (g_c+I1), s		5.0		2.4	3.7	7.5
Green Ext Time (p_c), s		2.8		0.1	0.2	3.2

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	341	23	124	256	75	46	237	45	84	191	167
Future Volume (veh/h)	237	341	23	124	256	75	46	237	45	84	191	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	242	348	23	127	261	77	47	242	46	86	195	170
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	384	757	50	163	531	153	131	407	343	130	389	327
Arrive On Green	0.11	0.23	0.23	0.09	0.20	0.20	0.07	0.22	0.22	0.07	0.21	0.21
Sat Flow, veh/h	3428	3356	221	1767	2698	779	1767	1856	1566	1767	1856	1561
Grp Volume(v), veh/h	242	182	189	127	169	169	47	242	46	86	195	170
Grp Sat Flow(s),veh/h/ln	1714	1763	1814	1767	1763	1714	1767	1856	1566	1767	1856	1561
Q Serve(g_s), s	3.0	3.9	4.0	3.1	3.8	3.9	1.1	5.2	0.7	2.1	4.1	4.3
Cycle Q Clear(g_c), s	3.0	3.9	4.0	3.1	3.8	3.9	1.1	5.2	0.7	2.1	4.1	4.3
Prop In Lane	1.00		0.12	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	398	409	163	347	337	131	407	343	130	389	327
V/C Ratio(X)	0.63	0.46	0.46	0.78	0.49	0.50	0.36	0.59	0.13	0.66	0.50	0.52
Avail Cap(c_a), veh/h	621	1197	1231	288	1165	1132	200	1272	1074	412	1478	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	14.8	14.8	19.6	15.8	15.8	19.5	15.5	5.7	19.9	15.4	15.5
Incr Delay (d2), s/veh	1.7	0.8	0.8	7.8	1.1	1.2	1.6	1.4	0.2	5.6	1.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	1.4	1.5	1.4	1.4	0.5	2.0	0.3	0.9	1.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	15.6	15.6	27.4	16.8	17.0	21.1	16.9	5.8	25.5	16.4	16.8
LnGrp LOS	C	B	B	C	B	B	C	B	A	C	B	B
Approach Vol, veh/h		613			465			335			451	
Approach Delay, s/veh		17.5			19.8			16.0			18.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	13.9	8.3	14.6	7.5	13.9	9.5	13.3
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 10	* 30	* 7.2	30.0	5.0	* 35	8.0	* 29
Max Q Clear Time (g_c+I1), s	4.1	7.2	5.1	6.0	3.1	6.3	5.0	5.9
Green Ext Time (p_c), s	0.1	1.5	0.1	2.1	0.0	1.7	0.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	72	138	161
Average Queue (ft)	36	62	77
95th Queue (ft)	55	98	119
Link Distance (ft)	2595	2585	2630
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	100	250	119
Average Queue (ft)	35	42	43
95th Queue (ft)	73	138	96
Link Distance (ft)	257	742	2585
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	64	89	201	235	370	150
Average Queue (ft)	34	18	86	69	141	65
95th Queue (ft)	60	50	157	162	284	152
Link Distance (ft)	555			1114	742	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		100	160			100
Storage Blk Time (%)		0	1	1	13	0
Queuing Penalty (veh)		0	4	1	17	1

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	285	334	348	301	198	195	182	159	369	160	165	430
Average Queue (ft)	181	157	208	89	108	77	117	52	168	50	93	189
95th Queue (ft)	294	320	319	236	180	145	181	118	308	144	164	348
Link Distance (ft)			636	636		294	294		570			600
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)	14	7	3		10	0		3	23		6	20
Queuing Penalty (veh)	29	14	12		16	0		11	24		30	72

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	103
95th Queue (ft)	168
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	2
Queuing Penalty (veh)	8

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	313	324	166	32	31	176	151	67	49	43	70	74
Average Queue (ft)	161	131	66	3	5	104	76	24	20	5	16	39
95th Queue (ft)	262	240	145	14	24	156	143	59	45	23	48	70
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						1						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	93	141
Average Queue (ft)	49	65
95th Queue (ft)	75	112
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 240

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	79	97	72
Average Queue (ft)	34	50	46
95th Queue (ft)	56	76	71
Link Distance (ft)	2595	2585	2630
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	71	79	76
Average Queue (ft)	18	13	18
95th Queue (ft)	47	49	54
Link Distance (ft)	257	742	2585
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	43	65	112	184	151	53
Average Queue (ft)	12	12	50	30	59	20
95th Queue (ft)	33	35	89	96	119	51
Link Distance (ft)	555			1121	742	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		100	160			100
Storage Blk Time (%)				0	1	
Queuing Penalty (veh)				0	1	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	194	143	248	233	181	120	250	159	164	159	153	303
Average Queue (ft)	100	61	137	48	86	60	91	48	113	27	66	85
95th Queue (ft)	163	121	220	138	142	111	153	124	167	78	111	187
Link Distance (ft)			637	637		302	302		570			593
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100		100	100	
Storage Blk Time (%)			1		2			2	12		3	6
Queuing Penalty (veh)			1		3			5	11		9	16

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	130
Average Queue (ft)	65
95th Queue (ft)	125
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	0
Queuing Penalty (veh)	1

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	L	LT	R
Maximum Queue (ft)	184	194	82	26	31	177	155	49	62	30	75	94
Average Queue (ft)	88	65	16	3	10	78	54	14	21	6	36	42
95th Queue (ft)	156	129	50	11	33	143	117	37	46	25	66	71
Link Distance (ft)		1769	1769			1084	1084		1060		661	661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250		200		
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	101
Average Queue (ft)	59
95th Queue (ft)	89
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 47

Appendix I: Cumulative Year 2040 No Project Traffic Conditions

Intersection	
Int Delay, s/veh	254.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	164	482	277	288	589
Future Vol, veh/h	109	164	482	277	288	589
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	118	178	524	301	313	640

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1941	675	0	0	825	0
Stage 1	675	-	-	-	-	-
Stage 2	1266	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	~ 71	452	-	-	801	-
Stage 1	504	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 28	452	-	-	801	-
Mov Cap-2 Maneuver	~ 28	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 1766.5	0	4.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	64	801	-
HCM Lane V/C Ratio	-	-	4.637	0.391	-
HCM Control Delay (s)	-	-	$ 1766.5	12.3	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	32.5	1.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	24.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↰	↱		↕	
Traffic Vol, veh/h	8	6	1	90	0	54	1	795	148	57	640	18
Future Vol, veh/h	8	6	1	90	0	54	1	795	148	57	640	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	160	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	6	1	97	0	58	1	855	159	61	688	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1706	1682	698	1685	1691	860	707	0	-	860	0	0
Stage 1	820	820	-	862	862	-	-	-	-	-	-	-
Stage 2	886	862	-	823	829	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	72	94	439	~ 74	93	354	887	-	0	777	-	-
Stage 1	368	388	-	348	371	-	-	-	0	-	-	-
Stage 2	338	371	-	366	384	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	54	81	439	~ 62	80	352	887	-	-	773	-	-
Mov Cap-2 Maneuver	54	81	-	~ 62	80	-	-	-	-	-	-	-
Stage 1	367	338	-	346	368	-	-	-	-	-	-	-
Stage 2	282	368	-	312	334	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	75	273.6	0	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	887	-	67	62	352	773	-	-
HCM Lane V/C Ratio	0.001	-	0.241	1.561	0.165	0.079	-	-
HCM Control Delay (s)	9.1	0	75$	427.4	17.2	10.1	0	-
HCM Lane LOS	A	A	F	F	C	B	A	-
HCM 95th %tile Q(veh)	0	-	0.8	8.6	0.6	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	28.6

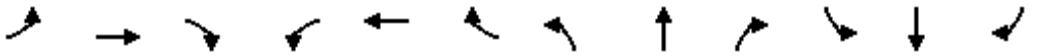
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	130	113	783	674	82
Future Vol, veh/h	67	130	113	783	674	82
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	71	138	120	833	717	87

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1839	766	809	0	-	0
Stage 1	766	-	-	-	-	-
Stage 2	1073	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	82	401	812	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 69	399	808	-	-	-
Mov Cap-2 Maneuver	~ 69	-	-	-	-	-
Stage 1	387	-	-	-	-	-
Stage 2	325	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	262.1	1.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	808	-	152	-	-
HCM Lane V/C Ratio	0.149	-	1.379	-	-
HCM Control Delay (s)	10.2	-	262.1	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	13.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



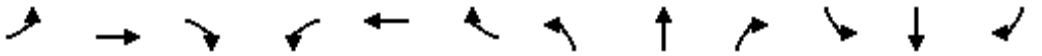
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	673	44	217	512	84	91	458	98	220	470	275
Future Volume (veh/h)	413	673	44	217	512	84	91	458	98	220	470	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	439	716	47	231	545	89	97	487	104	234	500	293
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	394	1013	66	261	687	112	156	504	419	219	564	471
Arrive On Green	0.22	0.30	0.30	0.15	0.23	0.23	0.09	0.27	0.27	0.12	0.30	0.30
Sat Flow, veh/h	1767	3354	220	1767	3025	492	1767	1856	1545	1767	1856	1549
Grp Volume(v), veh/h	439	376	387	231	317	317	97	487	104	234	500	293
Grp Sat Flow(s),veh/h/ln	1767	1763	1812	1767	1763	1754	1767	1856	1545	1767	1856	1549
Q Serve(g_s), s	24.8	21.1	21.1	14.3	18.8	19.0	5.9	28.8	4.1	13.8	28.6	10.2
Cycle Q Clear(g_c), s	24.8	21.1	21.1	14.3	18.8	19.0	5.9	28.8	4.1	13.8	28.6	10.2
Prop In Lane	1.00		0.12	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	533	547	261	400	398	156	504	419	219	564	471
V/C Ratio(X)	1.11	0.71	0.71	0.88	0.79	0.80	0.62	0.97	0.25	1.07	0.89	0.62
Avail Cap(c_a), veh/h	394	545	560	308	460	457	156	504	419	219	630	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	34.4	34.4	46.5	40.5	40.6	48.9	40.0	15.2	48.7	36.9	10.7
Incr Delay (d2), s/veh	80.1	4.0	4.0	22.4	8.1	8.4	7.5	31.6	0.3	79.8	13.4	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.4	9.4	9.7	7.8	8.9	9.0	2.9	17.4	2.1	10.9	14.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.3	38.5	38.4	68.9	48.6	49.0	56.5	71.7	15.5	128.5	50.3	12.6
LnGrp LOS	F	D	D	E	D	D	E	E	B	F	D	B
Approach Vol, veh/h		1202			865			688			1027	
Approach Delay, s/veh		69.4			54.2			61.0			57.3	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	34.4	20.6	38.2	14.0	38.4	29.0	29.9
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	* 4.2	4.6
Max Green Setting (Gmax), s	* 14	* 30	* 19	34.4	5.8	* 38	* 25	29.0
Max Q Clear Time (g_c+I1), s	15.8	30.8	16.3	23.1	7.9	30.6	26.8	21.0
Green Ext Time (p_c), s	0.0	0.0	0.2	3.5	0.0	2.5	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	61.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	758	702	57	10	349	58	117	211	17	120	123	638
Future Volume (vph)	758	702	57	10	349	58	117	211	17	120	123	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1595	3305	1568	1752	3430		1752	3462		1665	1744	2760
Flt Permitted	0.39	0.63	1.00	0.95	1.00		0.95	1.00		0.60	0.97	1.00
Satd. Flow (perm)	648	2127	1568	1752	3430		1752	3462		1056	1702	2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	798	739	60	11	367	61	123	222	18	126	129	672
RTOR Reduction (vph)	0	0	30	0	12	0	0	7	0	0	0	555
Lane Group Flow (vph)	455	1082	30	11	416	0	123	233	0	113	142	117
Confl. Peds. (#/hr)									3			
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	45.1	45.1	40.2	0.7	28.1		7.0	16.3		18.9	18.9	14.1
Effective Green, g (s)	45.1	45.1	40.2	0.7	28.1		7.0	16.3		18.9	18.9	14.1
Actuated g/C Ratio	0.56	0.56	0.50	0.01	0.35		0.09	0.20		0.23	0.23	0.17
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	526	1390	778	15	1189		151	696		282	399	480
v/s Ratio Prot	c0.15	0.14		0.01	0.12		c0.07	0.07		0.02	0.02	
v/s Ratio Perm	c0.33	0.30	0.02							c0.07	0.06	0.04
v/c Ratio	0.87	0.78	0.04	0.73	0.35		0.81	0.33		0.40	0.36	0.24
Uniform Delay, d1	11.9	14.0	10.5	40.1	19.7		36.4	27.7		25.5	26.0	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.9	2.8	0.0	103.2	0.2		27.4	0.3		0.9	0.5	0.3
Delay (s)	25.7	16.9	10.5	143.3	19.8		63.8	28.0		26.5	26.5	29.1
Level of Service	C	B	B	F	B		E	C		C	C	C
Approach Delay (s)		19.2			22.9			40.1			28.4	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	10.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	81	100	341	164	186	345
Future Vol, veh/h	81	100	341	164	186	345
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	88	109	371	178	202	375

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1239	460	0	0	549	0
Stage 1	460	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	193	599	-	-	1016	-
Stage 1	634	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	145	599	-	-	1016	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	338	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	58.1	0	3.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	249	1016	-
HCM Lane V/C Ratio	-	-	0.79	0.199	-
HCM Control Delay (s)	-	-	58.1	9.4	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	5.9	0.7	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↰	↱		↕	
Traffic Vol, veh/h	5	4	1	106	0	30	1	460	106	47	464	11
Future Vol, veh/h	5	4	1	106	0	30	1	460	106	47	464	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	160	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	5	4	1	115	0	33	1	500	115	51	504	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1131	1116	510	1119	1122	502	516	0	-	502	0	0
Stage 1	612	612	-	504	504	-	-	-	-	-	-	-
Stage 2	519	504	-	615	618	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	180	207	561	183	205	567	1045	-	0	1057	-	-
Stage 1	479	482	-	548	539	-	-	-	0	-	-	-
Stage 2	538	539	-	477	479	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	161	192	561	170	190	566	1045	-	-	1055	-	-
Mov Cap-2 Maneuver	161	192	-	170	190	-	-	-	-	-	-	-
Stage 1	479	449	-	546	537	-	-	-	-	-	-	-
Stage 2	506	537	-	439	446	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.6	50.8	0	0.8
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1045	-	186	170	566	1055	-	-
HCM Lane V/C Ratio	0.001	-	0.058	0.678	0.058	0.048	-	-
HCM Control Delay (s)	8.4	0	25.6	61.9	11.7	8.6	0	-
HCM Lane LOS	A	A	D	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	0.2	4	0.2	0.2	-	-

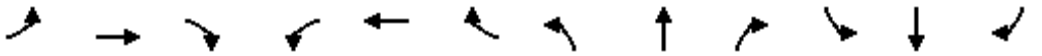
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	52	10	547	478	10
Future Vol, veh/h	16	52	10	547	478	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	17	57	11	595	520	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1143	526	531	0	-	0
Stage 1	526	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	220	550	1031	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	218	550	1031	-	-	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1031	-	405	-	-
HCM Lane V/C Ratio	0.011	-	0.183	-	-
HCM Control Delay (s)	8.5	-	15.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-



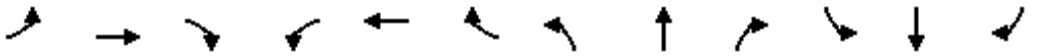
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	502	34	182	369	55	70	303	76	135	278	178
Future Volume (veh/h)	237	502	34	182	369	55	70	303	76	135	278	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	242	512	35	186	377	56	71	309	78	138	284	182
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	181	685	47	125	533	79	594	387	327	595	381	320
Arrive On Green	0.10	0.20	0.20	0.07	0.17	0.17	0.34	0.21	0.21	0.34	0.21	0.21
Sat Flow, veh/h	1767	3347	228	1767	3081	454	1767	1856	1566	1767	1856	1561
Grp Volume(v), veh/h	242	269	278	186	214	219	71	309	78	138	284	182
Grp Sat Flow(s),veh/h/ln	1767	1763	1812	1767	1763	1772	1767	1856	1566	1767	1856	1561
Q Serve(g_s), s	9.9	13.8	13.8	6.8	11.0	11.2	2.7	15.2	4.0	5.4	13.8	10.1
Cycle Q Clear(g_c), s	9.9	13.8	13.8	6.8	11.0	11.2	2.7	15.2	4.0	5.4	13.8	10.1
Prop In Lane	1.00		0.13	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	361	371	125	305	306	594	387	327	595	381	320
V/C Ratio(X)	1.33	0.75	0.75	1.49	0.70	0.71	0.12	0.80	0.24	0.23	0.75	0.57
Avail Cap(c_a), veh/h	181	569	585	125	533	535	594	622	525	595	688	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	35.8	35.9	44.6	37.4	37.5	22.0	36.1	31.6	22.9	35.8	34.3
Incr Delay (d2), s/veh	182.6	3.1	3.0	256.2	3.0	3.1	0.1	15.7	1.7	0.2	12.5	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	6.1	6.3	11.8	4.9	5.0	1.1	8.4	1.6	2.2	7.4	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	225.7	38.9	38.9	300.8	40.3	40.5	22.1	51.8	33.4	23.1	48.4	41.5
LnGrp LOS	F	D	D	F	D	D	C	D	C	C	D	D
Approach Vol, veh/h		789			619			458			604	
Approach Delay, s/veh		96.2			118.7			44.0			40.5	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.5	24.2	11.0	24.3	36.5	24.3	14.1	21.2
Change Period (Y+Rc), s	* 4.2	* 4.2	4.2	* 4.6	4.2	* 4.6	4.2	* 4.6
Max Green Setting (Gmax), s	* 8.8	* 32	6.8	* 31	5.0	* 36	8.8	* 29
Max Q Clear Time (g_c+I1), s	7.4	17.2	8.8	15.8	4.7	15.8	11.9	13.2
Green Ext Time (p_c), s	0.0	1.8	0.0	2.8	0.0	2.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	78.5
HCM 6th LOS	E

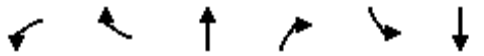
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	381	42	9	253	44	72	140	9	86	82	448
Future Volume (vph)	512	381	42	9	253	44	72	140	9	86	82	448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1595	3294	1568	1752	3421		1752	3474		1665	1744	2697
Flt Permitted	0.51	0.68	1.00	0.95	1.00		0.95	1.00		0.65	0.99	1.00
Satd. Flow (perm)	854	2283	1568	1752	3421		1752	3474		1148	1740	2697
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	528	393	43	9	261	45	74	144	9	89	85	462
RTOR Reduction (vph)	0	0	20	0	12	0	0	6	0	0	0	388
Lane Group Flow (vph)	280	641	23	9	294	0	74	147	0	80	94	74
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	57.3	57.3	52.1	1.0	44.0		8.6	15.6		15.7	15.7	15.3
Effective Green, g (s)	57.3	57.3	52.1	1.0	44.0		8.6	15.6		15.7	15.7	15.3
Actuated g/C Ratio	0.60	0.60	0.54	0.01	0.46		0.09	0.16		0.16	0.16	0.16
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	590	1473	850	18	1567		156	564		232	284	429
v/s Ratio Prot	c0.05	0.05		0.01	0.09		c0.04	0.04		0.03	c0.03	
v/s Ratio Perm	c0.23	0.21	0.01							c0.03	0.03	0.03
v/c Ratio	0.47	0.44	0.03	0.50	0.19		0.47	0.26		0.34	0.33	0.17
Uniform Delay, d1	9.6	10.5	10.2	47.3	15.4		41.6	35.2		36.1	35.5	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.95	0.98	2.75
Incremental Delay, d2	0.6	0.2	0.1	20.2	0.3		2.3	0.2		0.9	0.7	0.2
Delay (s)	10.2	10.7	10.2	67.4	15.7		43.8	35.4		35.3	35.4	96.0
Level of Service	B	B	B	E	B		D	D		D	D	F
Approach Delay (s)		10.6			17.2			38.1			79.4	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	109	164	482	277	288	589
Future Volume (veh/h)	109	164	482	277	288	589
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	118	178	524	301	313	640
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	243	217	565	478	633	1352
Arrive On Green	0.14	0.14	0.61	0.61	0.36	0.73
Sat Flow, veh/h	1767	1572	1856	1572	1767	1856
Grp Volume(v), veh/h	118	178	524	301	313	640
Grp Sat Flow(s),veh/h/ln	1767	1572	1856	1572	1767	1856
Q Serve(g_s), s	5.6	9.9	22.9	10.9	12.4	12.8
Cycle Q Clear(g_c), s	5.6	9.9	22.9	10.9	12.4	12.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	243	217	565	478	633	1352
V/C Ratio(X)	0.48	0.82	0.93	0.63	0.49	0.47
Avail Cap(c_a), veh/h	373	332	680	577	633	1352
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.65	0.65	1.00	1.00
Uniform Delay (d), s/veh	35.8	37.7	16.7	14.4	22.5	5.0
Incr Delay (d2), s/veh	1.5	9.4	17.4	4.0	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.1	7.4	3.1	4.7	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.3	47.1	34.1	18.4	23.1	6.2
LnGrp LOS	D	D	C	B	C	A
Approach Vol, veh/h	296		825			953
Approach Delay, s/veh	43.2		28.4			11.8
Approach LOS	D		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	38.2	33.4			71.6	18.4
Change Period (Y+Rc), s	6.0	* 6			6.0	6.0
Max Green Setting (Gmax), s	21.8	* 33			59.0	19.0
Max Q Clear Time (g_c+I1), s	14.4	24.9			14.8	11.9
Green Ext Time (p_c), s	0.5	2.5			4.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

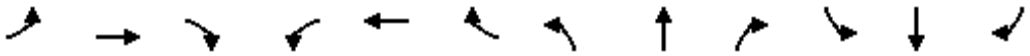
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	296	825	953
Demand Flow Rate, veh/h	305	850	981
Vehicles Circulating, veh/h	540	322	122
Vehicles Exiting, veh/h	632	781	723
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.4	25.4	18.2
Approach LOS	A	D	C

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	305	850	981
Cap Entry Lane, veh/h	796	994	1218
Entry HV Adj Factor	0.970	0.971	0.971
Flow Entry, veh/h	296	825	953
Cap Entry, veh/h	772	965	1183
V/C Ratio	0.383	0.855	0.805
Control Delay, s/veh	9.4	25.4	18.2
LOS	A	D	C
95th %tile Queue, veh	2	11	9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	6	1	90	0	54	1	795	148	57	640	18
Future Volume (veh/h)	8	6	1	90	0	54	1	795	148	57	640	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	9	6	1	97	0	58	1	855	0	61	688	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	20	73	12	98	0	143	2	1229		78	1267	35
Arrive On Green	0.01	0.05	0.05	0.06	0.00	0.09	0.00	1.00	0.00	0.04	0.71	0.71
Sat Flow, veh/h	1767	1551	258	1767	0	1572	1767	1856	1572	1767	1797	50
Grp Volume(v), veh/h	9	0	7	97	0	58	1	855	0	61	0	707
Grp Sat Flow(s),veh/h/ln	1767	0	1809	1767	0	1572	1767	1856	1572	1767	0	1847
Q Serve(g_s), s	0.5	0.0	0.3	4.9	0.0	3.1	0.1	0.0	0.0	3.1	0.0	16.5
Cycle Q Clear(g_c), s	0.5	0.0	0.3	4.9	0.0	3.1	0.1	0.0	0.0	3.1	0.0	16.5
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	20	0	85	98	0	143	2	1229		78	0	1302
V/C Ratio(X)	0.45	0.00	0.08	0.99	0.00	0.40	0.41	0.70		0.78	0.00	0.54
Avail Cap(c_a), veh/h	98	0	663	98	0	577	98	1229		98	0	1302
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.81	0.81	0.00	0.87	0.00	0.87
Uniform Delay (d), s/veh	44.2	0.0	41.0	42.5	0.0	38.6	44.8	0.0	0.0	42.6	0.0	6.3
Incr Delay (d2), s/veh	15.4	0.0	0.4	86.8	0.0	1.8	71.8	2.7	0.0	23.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.2	4.5	0.0	1.3	0.1	0.9	0.0	1.8	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.0	41.5	129.2	0.0	40.4	116.6	2.7	0.0	66.2	0.0	7.8
LnGrp LOS	E	A	D	F	A	D	F	A		E	A	A
Approach Vol, veh/h		16			155			856	A		768	
Approach Delay, s/veh		51.7			96.0			2.8			12.4	
Approach LOS		D			F			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	64.2	9.2	8.4	4.3	68.1	5.2	12.4
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	* 4.2	* 4.2	4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 5	29.8	* 5	* 33	* 5	29.8	* 5	* 33
Max Q Clear Time (g_c+I1), s	5.1	2.0	6.9	2.3	2.1	18.5	2.5	5.1
Green Ext Time (p_c), s	0.0	7.1	0.0	0.0	0.0	3.7	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

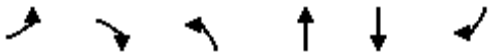
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	16	155	1015	768
Demand Flow Rate, veh/h	16	160	1046	792
Vehicles Circulating, veh/h	872	891	78	101
Vehicles Exiting, veh/h	21	233	810	950
Ped Vol Crossing Leg, #/h	0	5	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	10.8	10.3	11.2
Approach LOS	A	B	B	B

Lane	Left	Left	Left	Right	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized					
Lane Util	1.000	1.000	0.843	0.157	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
Entry Flow, veh/h	16	160	882	164	792
Cap Entry Lane, veh/h	567	556	1323	1323	1245
Entry HV Adj Factor	0.989	0.969	0.971	0.970	0.970
Flow Entry, veh/h	16	155	856	159	768
Cap Entry, veh/h	561	539	1284	1282	1208
V/C Ratio	0.028	0.288	0.667	0.124	0.636
Control Delay, s/veh	6.7	10.8	11.6	3.8	11.2
LOS	A	B	B	A	B
95th %tile Queue, veh	0	1	5	0	5



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	67	130	113	783	674	82
Future Volume (veh/h)	67	130	113	783	674	82
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	71	138	120	833	717	87
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	198	176	150	1458	1214	1025
Arrive On Green	0.11	0.11	0.09	0.79	1.00	1.00
Sat Flow, veh/h	1767	1572	1767	1856	1856	1566
Grp Volume(v), veh/h	71	138	120	833	717	87
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1566
Q Serve(g_s), s	3.3	7.7	6.0	15.7	0.0	0.0
Cycle Q Clear(g_c), s	3.3	7.7	6.0	15.7	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	198	176	150	1458	1214	1025
V/C Ratio(X)	0.36	0.79	0.80	0.57	0.59	0.08
Avail Cap(c_a), veh/h	373	332	212	1458	1214	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.78	0.78
Uniform Delay (d), s/veh	37.0	38.9	40.4	3.7	0.0	0.0
Incr Delay (d2), s/veh	1.1	7.5	13.1	1.6	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.9	3.1	4.0	0.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.1	46.4	53.6	5.4	1.7	0.1
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	209			953	804	
Approach Delay, s/veh	43.6			11.4	1.5	
Approach LOS	D			B	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.3		14.7	11.9	63.5
Change Period (Y+Rc), s		4.6		4.6	* 4.2	4.6
Max Green Setting (Gmax), s		61.8		19.0	* 11	46.8
Max Q Clear Time (g_c+I1), s		17.7		9.7	8.0	2.0
Green Ext Time (p_c), s		7.4		0.4	0.1	6.1

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	673	44	217	512	84	91	458	98	220	470	275
Future Volume (veh/h)	413	673	44	217	512	84	91	458	98	220	470	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	439	716	47	231	545	89	97	487	104	234	500	293
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	523	1059	69	307	752	122	123	717	152	270	616	755
Arrive On Green	0.15	0.32	0.32	0.09	0.25	0.25	0.07	0.25	0.25	0.15	0.33	0.33
Sat Flow, veh/h	3428	3355	220	3428	3030	493	1767	2882	612	1767	1856	1551
Grp Volume(v), veh/h	439	376	387	231	316	318	97	297	294	234	500	293
Grp Sat Flow(s),veh/h/ln	1714	1763	1812	1714	1763	1760	1767	1763	1731	1767	1856	1551
Q Serve(g_s), s	11.3	16.9	16.9	6.0	15.0	15.1	4.9	13.9	14.0	11.8	22.5	2.5
Cycle Q Clear(g_c), s	11.3	16.9	16.9	6.0	15.0	15.1	4.9	13.9	14.0	11.8	22.5	2.5
Prop In Lane	1.00		0.12	1.00		0.28	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	523	556	572	307	437	437	123	439	431	270	616	755
V/C Ratio(X)	0.84	0.68	0.68	0.75	0.72	0.73	0.79	0.68	0.68	0.87	0.81	0.39
Avail Cap(c_a), veh/h	632	680	699	398	561	560	178	584	573	326	761	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	27.1	27.2	40.5	31.4	31.5	41.7	30.9	31.0	37.7	27.9	5.8
Incr Delay (d2), s/veh	8.4	2.0	1.9	5.8	3.3	3.5	13.4	1.9	2.1	18.4	5.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.1	7.3	2.7	6.5	6.6	2.6	6.0	6.0	6.3	10.4	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	29.1	29.1	46.3	34.7	34.9	55.1	32.9	33.1	56.1	33.3	6.1
LnGrp LOS	D	C	C	D	C	C	E	C	C	E	C	A
Approach Vol, veh/h		1202			865			688			1027	
Approach Delay, s/veh		35.3			37.9			36.1			30.7	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	27.3	12.4	33.4	10.6	34.9	18.5	27.2
Change Period (Y+Rc), s	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 17	* 30	* 11	35.2	* 9.2	37.4	16.8	* 29
Max Q Clear Time (g_c+I1), s	13.8	16.0	8.0	18.9	6.9	24.5	13.3	17.1
Green Ext Time (p_c), s	0.2	3.1	0.2	4.2	0.0	3.5	0.6	3.0

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

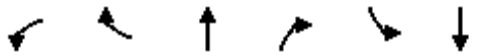
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	673	44	217	512	84	91	458	98	220	470	275
Future Volume (veh/h)	413	673	44	217	512	84	91	458	98	220	470	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	439	716	47	231	545	89	97	487	104	234	500	293
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	588	909	60	263	739	120	122	704	149	266	604	505
Arrive On Green	0.17	0.27	0.27	0.15	0.24	0.24	0.07	0.24	0.24	0.15	0.33	0.33
Sat Flow, veh/h	3428	3354	220	1767	3029	493	1767	2882	612	1767	1856	1551
Grp Volume(v), veh/h	439	376	387	231	316	318	97	297	294	234	500	293
Grp Sat Flow(s),veh/h/ln	1714	1763	1811	1767	1763	1760	1767	1763	1731	1767	1856	1551
Q Serve(g_s), s	11.5	18.8	18.8	12.2	15.7	15.8	5.1	14.5	14.7	12.3	23.6	9.0
Cycle Q Clear(g_c), s	11.5	18.8	18.8	12.2	15.7	15.8	5.1	14.5	14.7	12.3	23.6	9.0
Prop In Lane	1.00		0.12	1.00		0.28	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	588	478	491	263	430	429	122	431	423	266	604	505
V/C Ratio(X)	0.75	0.79	0.79	0.88	0.74	0.74	0.79	0.69	0.70	0.88	0.83	0.58
Avail Cap(c_a), veh/h	588	557	572	264	542	541	127	544	534	266	712	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	32.1	32.1	39.6	33.1	33.1	43.5	32.6	32.6	39.5	29.6	9.6
Incr Delay (d2), s/veh	5.2	6.4	6.3	26.7	3.9	4.1	27.4	2.6	2.8	26.9	7.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.6	8.8	7.1	6.9	7.0	3.2	6.4	6.4	7.2	11.2	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	38.5	38.4	66.3	37.0	37.2	70.9	35.2	35.5	66.4	36.6	10.7
LnGrp LOS	D	D	D	E	D	D	E	D	D	E	D	B
Approach Vol, veh/h		1202			865			688			1027	
Approach Delay, s/veh		39.9			44.9			40.3			36.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	27.8	18.3	30.3	10.8	35.5	20.9	27.8
Change Period (Y+Rc), s	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 14	* 29	* 14	30.0	* 6.8	36.4	15.0	* 29
Max Q Clear Time (g_c+I1), s	14.3	16.7	14.2	20.8	7.1	25.6	13.5	17.8
Green Ext Time (p_c), s	0.0	3.0	0.0	3.1	0.0	3.2	0.3	2.9

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	100	341	164	186	345
Future Volume (veh/h)	81	100	341	164	186	345
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	88	109	371	178	202	375
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	199	177	531	450	266	1089
Arrive On Green	0.11	0.11	0.29	0.29	0.15	0.59
Sat Flow, veh/h	1767	1572	1856	1572	1767	1856
Grp Volume(v), veh/h	88	109	371	178	202	375
Grp Sat Flow(s),veh/h/ln	1767	1572	1856	1572	1767	1856
Q Serve(g_s), s	1.9	2.6	7.1	3.6	4.4	4.2
Cycle Q Clear(g_c), s	1.9	2.6	7.1	3.6	4.4	4.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	199	177	531	450	266	1089
V/C Ratio(X)	0.44	0.61	0.70	0.40	0.76	0.34
Avail Cap(c_a), veh/h	840	747	1300	1101	743	2274
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	16.6	16.9	12.7	11.5	16.3	4.3
Incr Delay (d2), s/veh	1.5	3.4	1.7	0.6	4.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	2.1	0.9	1.6	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.1	20.3	14.4	12.0	20.7	4.5
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	197		549			577
Approach Delay, s/veh	19.3		13.6			10.1
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.0	17.4			29.5	10.5
Change Period (Y+Rc), s	6.0	* 6			6.0	6.0
Max Green Setting (Gmax), s	16.8	* 28			49.0	19.0
Max Q Clear Time (g_c+I1), s	6.4	9.1			6.2	4.6
Green Ext Time (p_c), s	0.4	2.3			2.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

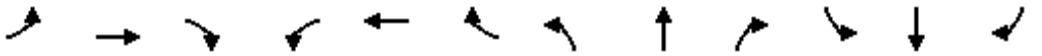
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	197	549	577
Demand Flow Rate, veh/h	203	565	594
Vehicles Circulating, veh/h	382	208	91
Vehicles Exiting, veh/h	391	477	494
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.2	9.2	7.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	203	565	594
Cap Entry Lane, veh/h	935	1116	1258
Entry HV Adj Factor	0.970	0.971	0.971
Flow Entry, veh/h	197	549	577
Cap Entry, veh/h	907	1084	1221
V/C Ratio	0.217	0.506	0.472
Control Delay, s/veh	6.2	9.2	7.9
LOS	A	A	A
95th %tile Queue, veh	1	3	3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	4	1	106	0	30	1	460	106	47	464	11
Future Volume (veh/h)	5	4	1	106	0	30	1	460	106	47	464	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	4	1	115	0	33	1	500	0	51	504	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	12	68	17	162	0	208	60	676		96	677	16
Arrive On Green	0.01	0.05	0.05	0.09	0.00	0.13	0.03	0.36	0.00	0.05	0.37	0.37
Sat Flow, veh/h	1767	1433	358	1767	0	1572	1767	1856	1572	1767	1805	43
Grp Volume(v), veh/h	5	0	5	115	0	33	1	500	0	51	0	516
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1767	0	1572	1767	1856	1572	1767	0	1848
Q Serve(g_s), s	0.1	0.0	0.1	2.5	0.0	0.7	0.0	9.1	0.0	1.1	0.0	9.4
Cycle Q Clear(g_c), s	0.1	0.0	0.1	2.5	0.0	0.7	0.0	9.1	0.0	1.1	0.0	9.4
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	12	0	86	162	0	208	60	676		96	0	693
V/C Ratio(X)	0.42	0.00	0.06	0.71	0.00	0.16	0.02	0.74		0.53	0.00	0.74
Avail Cap(c_a), veh/h	227	0	1518	263	0	1366	227	1382		227	0	1377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	17.7	17.2	0.0	15.0	18.2	10.8	0.0	17.9	0.0	10.5
Incr Delay (d2), s/veh	21.6	0.0	0.3	5.7	0.0	0.4	0.1	1.6	0.0	4.5	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.1	0.0	0.2	0.0	2.9	0.0	0.5	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	0.0	18.0	22.9	0.0	15.3	18.3	12.4	0.0	22.4	0.0	12.2
LnGrp LOS	D	A	B	C	A	B	B	B		C	A	B
Approach Vol, veh/h		10			148			501	A		567	
Approach Delay, s/veh		29.4			21.2			12.4			13.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	18.8	7.8	6.1	5.9	19.2	4.5	9.4
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	* 4.2	4.6	* 4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 5	29.0	* 5.8	* 33	5.0	* 29	* 5	* 34
Max Q Clear Time (g_c+I1), s	3.1	11.1	4.5	2.1	2.0	11.4	2.1	2.7
Green Ext Time (p_c), s	0.0	2.9	0.0	0.0	0.0	3.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

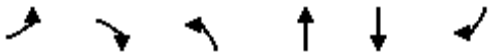
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	10	148	616	567
Demand Flow Rate, veh/h	10	152	634	584
Vehicles Circulating, veh/h	690	521	62	119
Vehicles Exiting, veh/h	13	57	638	554
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.5	6.5	5.5	8.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	118	4.976
Entry Flow, veh/h	10	152	516	1957	584
Cap Entry Lane, veh/h	683	811	1295	0.971	1222
Entry HV Adj Factor	0.988	0.974	0.971	115	0.971
Flow Entry, veh/h	10	148	501	1900	567
Cap Entry, veh/h	675	790	1258	0.061	1186
V/C Ratio	0.015	0.187	0.398	0.0	0.478
Control Delay, s/veh	5.5	6.5	6.7	A	8.2
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	2		3



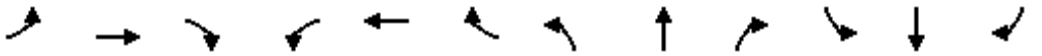
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	52	10	547	478	10
Future Volume (veh/h)	16	52	10	547	478	10
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	17	57	11	595	520	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	138	122	26	1110	783	663
Arrive On Green	0.08	0.08	0.01	0.60	0.42	0.42
Sat Flow, veh/h	1767	1572	1767	1856	1856	1572
Grp Volume(v), veh/h	17	57	11	595	520	11
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1572
Q Serve(g_s), s	0.3	1.0	0.2	5.4	6.4	0.1
Cycle Q Clear(g_c), s	0.3	1.0	0.2	5.4	6.4	0.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	138	122	26	1110	783	663
V/C Ratio(X)	0.12	0.47	0.43	0.54	0.66	0.02
Avail Cap(c_a), veh/h	1207	1074	361	3357	2704	2291
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	12.2	12.5	13.9	3.4	6.6	4.8
Incr Delay (d2), s/veh	0.4	2.7	10.7	0.4	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.2	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.6	15.3	24.6	3.8	7.6	4.8
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	74			606	531	
Approach Delay, s/veh	14.7			4.2	7.5	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.6		6.8	5.0	16.6
Change Period (Y+Rc), s		4.6		4.6	4.6	* 4.6
Max Green Setting (Gmax), s		51.4		19.4	5.8	* 41
Max Q Clear Time (g_c+I1), s		7.4		3.0	2.2	8.4
Green Ext Time (p_c), s		4.4		0.1	0.0	3.6

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	502	34	182	369	55	70	303	76	135	278	178
Future Volume (veh/h)	237	502	34	182	369	55	70	303	76	135	278	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	242	512	35	186	377	56	71	309	78	138	284	182
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	368	850	58	313	733	108	110	578	143	194	457	554
Arrive On Green	0.11	0.25	0.25	0.09	0.24	0.24	0.06	0.21	0.21	0.11	0.25	0.25
Sat Flow, veh/h	3428	3347	228	3428	3082	454	1767	2795	694	1767	1856	1563
Grp Volume(v), veh/h	242	269	278	186	214	219	71	193	194	138	284	182
Grp Sat Flow(s),veh/h/ln	1714	1763	1813	1714	1763	1773	1767	1763	1727	1767	1856	1563
Q Serve(g_s), s	3.4	6.8	6.9	2.7	5.4	5.5	2.0	5.0	5.1	3.8	6.9	2.2
Cycle Q Clear(g_c), s	3.4	6.8	6.9	2.7	5.4	5.5	2.0	5.0	5.1	3.8	6.9	2.2
Prop In Lane	1.00		0.13	1.00		0.26	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	368	448	460	313	419	422	110	364	357	194	457	554
V/C Ratio(X)	0.66	0.60	0.60	0.59	0.51	0.52	0.65	0.53	0.54	0.71	0.62	0.33
Avail Cap(c_a), veh/h	539	1061	1091	431	1005	1011	174	1036	1015	379	1291	1257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	16.7	16.7	22.2	16.8	16.8	23.3	18.0	18.0	21.9	17.1	3.7
Incr Delay (d2), s/veh	2.0	1.3	1.3	1.8	1.0	1.0	6.2	1.2	1.3	4.7	1.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.5	2.6	1.0	2.0	2.0	1.0	1.9	1.9	1.7	2.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	18.0	18.0	24.0	17.8	17.8	29.5	19.2	19.3	26.6	18.4	4.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	A
Approach Vol, veh/h		789			619			458			604	
Approach Delay, s/veh		19.8			19.7			20.8			16.0	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	14.7	8.8	17.5	7.4	17.1	9.7	16.7
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	* 4.2	4.6
Max Green Setting (Gmax), s	* 11	* 30	* 6.4	30.6	5.0	* 35	* 8	29.0
Max Q Clear Time (g_c+I1), s	5.8	7.1	4.7	8.9	4.0	8.9	5.4	7.5
Green Ext Time (p_c), s	0.1	2.3	0.1	3.2	0.0	2.3	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	502	34	182	369	55	70	303	76	135	278	178
Future Volume (veh/h)	237	502	34	182	369	55	70	303	76	135	278	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	242	512	35	186	377	56	71	309	78	138	284	182
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	384	683	47	144	534	79	91	462	115	647	890	752
Arrive On Green	0.11	0.20	0.20	0.08	0.17	0.17	0.05	0.17	0.17	0.37	0.48	0.48
Sat Flow, veh/h	3428	3347	228	1767	3081	454	1767	2795	694	1767	1856	1568
Grp Volume(v), veh/h	242	269	278	186	214	219	71	193	194	138	284	182
Grp Sat Flow(s),veh/h/ln	1714	1763	1812	1767	1763	1773	1767	1763	1726	1767	1856	1568
Q Serve(g_s), s	6.5	13.8	13.8	7.8	11.0	11.2	3.8	9.9	10.1	5.2	9.0	4.0
Cycle Q Clear(g_c), s	6.5	13.8	13.8	7.8	11.0	11.2	3.8	9.9	10.1	5.2	9.0	4.0
Prop In Lane	1.00		0.13	1.00		0.26	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	384	360	370	144	305	307	91	291	285	647	890	752
V/C Ratio(X)	0.63	0.75	0.75	1.30	0.70	0.71	0.78	0.66	0.68	0.21	0.32	0.24
Avail Cap(c_a), veh/h	384	551	566	144	545	548	92	591	579	647	890	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	35.9	35.9	44.1	37.4	37.4	45.0	37.6	37.7	20.9	15.3	5.4
Incr Delay (d2), s/veh	3.3	3.1	3.1	174.8	2.9	3.1	33.8	11.3	12.3	0.2	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.1	6.3	10.3	4.9	5.0	2.5	5.1	5.2	2.1	3.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	39.0	39.0	218.9	40.3	40.5	78.8	48.8	50.0	21.1	16.3	6.2
LnGrp LOS	D	D	D	F	D	D	E	D	D	C	B	A
Approach Vol, veh/h		789			619			458			604	
Approach Delay, s/veh		40.5			94.0			54.0			14.3	
Approach LOS		D			F			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.7	20.1	12.0	24.2	9.1	50.7	15.0	21.2
Change Period (Y+Rc), s	* 4.6	* 4.2	4.2	* 4.6	* 4.2	4.6	4.2	* 4.6
Max Green Setting (Gmax), s	* 8.8	* 32	7.8	* 30	* 5	35.6	8.1	* 30
Max Q Clear Time (g_c+I1), s	7.2	12.1	9.8	15.8	5.8	11.0	8.5	13.2
Green Ext Time (p_c), s	0.1	2.2	0.0	2.7	0.0	2.2	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	167	106	325	175	268	269
Average Queue (ft)	70	46	155	71	173	102
95th Queue (ft)	136	87	262	134	263	226
Link Distance (ft)	2577		2602			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)			1		1	0
Queuing Penalty (veh)			2		8	1

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	R	L	TR
Maximum Queue (ft)	53	31	152	74	702	250	368	371
Average Queue (ft)	11	5	76	27	287	67	55	147
95th Queue (ft)	39	24	134	62	627	249	161	334
Link Distance (ft)		300		279	748			2602
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		250			150	250	
Storage Blk Time (%)					19			5
Queuing Penalty (veh)					28			3

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	B18	SB	SB
Directions Served	L	R	L	T	T	T	R
Maximum Queue (ft)	105	150	140	347	636	482	369
Average Queue (ft)	47	56	70	129	21	203	34
95th Queue (ft)	91	106	116	245	210	403	142
Link Distance (ft)	555			1116	598	748	
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					1		
Storage Bay Dist (ft)		75	160				250
Storage Blk Time (%)	3	4		3		4	
Queuing Penalty (veh)	4	3		4		3	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	L	T	TR	L	T	TR	L
Maximum Queue (ft)	284	335	648	636	140	134	262	309	160	317	286	369
Average Queue (ft)	221	223	272	210	77	92	148	181	112	198	158	219
95th Queue (ft)	331	406	546	409	126	129	232	256	193	308	253	346
Link Distance (ft)			636	636			2525	2525		570	570	
Upstream Blk Time (%)			0	0								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	235	235			160	160			100			250
Storage Blk Time (%)	35	21	3		0		3		7	42		4
Queuing Penalty (veh)	118	72	12		0		7		17	38		31

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB	SB	B18
Directions Served	T	R	T
Maximum Queue (ft)	693	370	165
Average Queue (ft)	318	139	8
95th Queue (ft)	604	343	60
Link Distance (ft)	598		1116
Upstream Blk Time (%)	4		
Queuing Penalty (veh)	29		
Storage Bay Dist (ft)		250	
Storage Blk Time (%)	19		
Queuing Penalty (veh)	95		

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	445	487	482	32	74	221	202	286	135	67	52	181
Average Queue (ft)	210	249	211	6	13	133	113	123	61	29	27	92
95th Queue (ft)	339	385	359	19	48	198	187	244	114	65	52	158
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)	2	2				6		2				0
Queuing Penalty (veh)	12	9				1		2				0

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	162	196
Average Queue (ft)	82	97
95th Queue (ft)	139	159
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 499

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	99	386	290
Average Queue (ft)	32	112	60
95th Queue (ft)	70	251	142
Link Distance (ft)	2554	2539	2586
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	53	100	556	250	129
Average Queue (ft)	7	43	236	114	46
95th Queue (ft)	30	80	513	297	106
Link Distance (ft)	267	245	728		2539
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)			42		
Queuing Penalty (veh)			62		

Zone Summary

Zone wide Queuing Penalty: 62

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	152	132	254	177	293	251
Average Queue (ft)	65	40	129	61	145	79
95th Queue (ft)	124	85	241	125	234	175
Link Distance (ft)	2577		2602			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)			1		2	0
Queuing Penalty (veh)			2		11	0

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	31	31	126	51	25	748	250	96	270
Average Queue (ft)	4	11	65	33	1	263	50	49	147
95th Queue (ft)	22	33	110	45	8	573	215	87	269
Link Distance (ft)		300		279		748			2602
Upstream Blk Time (%)						0			
Queuing Penalty (veh)						2			
Storage Bay Dist (ft)	100		250		250		150	250	
Storage Blk Time (%)						21			1
Queuing Penalty (veh)						32			0

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	B18	SB	SB
Directions Served	L	R	L	T	T	T	R
Maximum Queue (ft)	111	60	135	250	593	396	370
Average Queue (ft)	36	31	65	90	20	154	23
95th Queue (ft)	80	57	109	200	195	310	131
Link Distance (ft)	555			1116	598	748	
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					0		
Storage Bay Dist (ft)		75	160				250
Storage Blk Time (%)	4	0		2		2	
Queuing Penalty (veh)	5	0		2		2	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	TR	L	T
Maximum Queue (ft)	257	272	354	370	220	337	321	160	288	263	369	406
Average Queue (ft)	178	138	176	188	183	214	196	124	192	160	205	274
95th Queue (ft)	258	256	289	289	260	335	298	200	264	246	363	419
Link Distance (ft)			636	636		2525	2525		570	570		598
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100			250	
Storage Blk Time (%)	1	0	4		34	7		6	41		7	14
Queuing Penalty (veh)	2	1	15		86	16		13	37		52	68

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	370
Average Queue (ft)	123
95th Queue (ft)	293
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	342	390	278	14	53	199	184	259	98	110	98	159
Average Queue (ft)	218	248	189	4	15	133	87	104	68	42	48	100
95th Queue (ft)	320	332	273	11	41	182	152	190	98	87	89	152
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)		0				3		1				
Queuing Penalty (veh)		1				0		1				

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	137	214
Average Queue (ft)	83	104
95th Queue (ft)	125	162
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		0
Queuing Penalty (veh)		1

Network Summary

Network wide Queuing Penalty: 349

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	91	64	183	100	159	140
Average Queue (ft)	34	24	83	40	79	40
95th Queue (ft)	65	47	150	79	125	101
Link Distance (ft)	2577		2602			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	L	TR
Maximum Queue (ft)	31	31	116	48	25	247	54	214
Average Queue (ft)	6	3	60	19	1	100	26	78
95th Queue (ft)	25	18	101	44	8	200	52	143
Link Distance (ft)		285		279		748		2602
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		250		250		250	
Storage Blk Time (%)						4		
Queuing Penalty (veh)						4		

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	24	67	55	141	159	30
Average Queue (ft)	6	18	13	37	50	3
95th Queue (ft)	23	43	39	97	127	17
Link Distance (ft)	555			1126	748	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		75	160			250
Storage Blk Time (%)		0		0		
Queuing Penalty (veh)		0		0		

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	L	T	TR	L	T	TR	L
Maximum Queue (ft)	218	200	206	220	141	177	148	221	159	227	190	184
Average Queue (ft)	117	84	105	118	52	78	66	115	61	111	81	86
95th Queue (ft)	180	157	155	173	107	127	120	187	124	173	154	159
Link Distance (ft)			636	636			2529	2529		570	570	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160	160			100			250
Storage Blk Time (%)	0				0	2	0		0	15		
Queuing Penalty (veh)	0				0	3	0		0	10		

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	242	140
Average Queue (ft)	127	49
95th Queue (ft)	199	92
Link Distance (ft)	588	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	189	213	177	35	53	120	91	114	90	45	78	96
Average Queue (ft)	113	136	66	5	7	68	42	52	36	14	22	55
95th Queue (ft)	165	187	158	20	30	106	73	90	72	37	62	101
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	100	101
Average Queue (ft)	48	67
95th Queue (ft)	74	98
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 18

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	44	95	56
Average Queue (ft)	20	43	26
95th Queue (ft)	42	87	60
Link Distance (ft)	2554	2539	2586
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	31	67	76	52	118
Average Queue (ft)	6	20	15	2	24
95th Queue (ft)	26	46	53	17	72
Link Distance (ft)	251	236	720		2539
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	106	86	175	76	286	272
Average Queue (ft)	53	30	65	29	143	44
95th Queue (ft)	97	62	153	69	252	149
Link Distance (ft)	2577		2602			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)					1	0
Queuing Penalty (veh)					3	0

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	R	L	TR
Maximum Queue (ft)	31	31	189	31	382	250	74	242
Average Queue (ft)	7	2	87	13	173	50	37	115
95th Queue (ft)	27	15	162	37	354	214	75	218
Link Distance (ft)		285		279	748			2602
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		250			150	250	
Storage Blk Time (%)					11			0
Queuing Penalty (veh)					11			0

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	T
Maximum Queue (ft)	46	42	31	142	138
Average Queue (ft)	13	16	8	51	48
95th Queue (ft)	38	36	29	132	122
Link Distance (ft)	555			1126	748
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		75	160		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	TR	L	T
Maximum Queue (ft)	162	123	248	245	219	302	234	159	240	180	176	268
Average Queue (ft)	102	49	118	139	123	114	140	54	126	86	92	141
95th Queue (ft)	147	110	201	210	197	232	232	101	208	172	159	240
Link Distance (ft)			636	636		2530	2530		570	570		588
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100			250	
Storage Blk Time (%)			0		6	2		0	22			1
Queuing Penalty (veh)			1		11	3		0	15			2

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	154
Average Queue (ft)	56
95th Queue (ft)	95
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	185	228	204	37	30	161	179	130	110	69	73	202
Average Queue (ft)	91	132	60	3	7	65	41	52	51	15	32	78
95th Queue (ft)	157	191	154	15	25	141	118	97	91	41	70	133
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						2						0
Queuing Penalty (veh)						0						0

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	100	106
Average Queue (ft)	52	69
95th Queue (ft)	78	106
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 47

Appendix J: Cumulative Year 2040 plus Project Traffic Conditions

Intersection	
Int Delay, s/veh	317.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	122	164	486	279	288	607
Future Vol, veh/h	122	164	486	279	288	607
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	133	178	528	303	313	660

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1966	680	0	0	831	0
Stage 1	680	-	-	-	-	-
Stage 2	1286	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	~ 69	449	-	-	797	-
Stage 1	501	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 26	449	-	-	797	-
Mov Cap-2 Maneuver	~ 26	-	-	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	~ 98	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 2147	0	4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	57	797	-
HCM Lane V/C Ratio	-	-	5.454	0.393	-
HCM Control Delay (s)	-	-	$ 2147	12.4	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	35.1	1.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	41.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↰	↱		↕	
Traffic Vol, veh/h	10	6	1	107	2	54	1	799	151	57	668	21
Future Vol, veh/h	10	6	1	107	2	54	1	799	151	57	668	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	-	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	6	1	115	2	58	1	859	162	61	718	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1743	1718	730	1721	1729	864	741	0	-	864	0	0
Stage 1	852	852	-	866	866	-	-	-	-	-	-	-
Stage 2	891	866	-	855	863	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	67	89	421	~ 70	88	352	861	-	0	774	-	-
Stage 1	353	375	-	347	369	-	-	-	0	-	-	-
Stage 2	336	369	-	351	370	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	49	76	421	~ 58	76	350	861	-	-	770	-	-
Mov Cap-2 Maneuver	49	76	-	~ 58	76	-	-	-	-	-	-	-
Stage 1	352	324	-	345	366	-	-	-	-	-	-	-
Stage 2	278	366	-	297	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	89.4	$ 425.1	0	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	861	-	60	58	350	770	-	-
HCM Lane V/C Ratio	0.001	-	0.305	2.021	0.166	0.08	-	-
HCM Control Delay (s)	9.2	0	89.4	$ 627.2	17.3	10.1	0	-
HCM Lane LOS	A	A	F	F	C	B	A	-
HCM 95th %tile Q(veh)	0	-	1.1	11.3	0.6	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	65.2

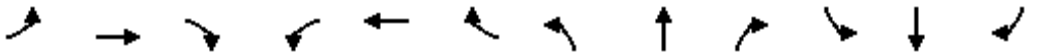
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	72	140	198	783	680	127
Future Vol, veh/h	72	140	198	783	680	127
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	77	149	211	833	723	135

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2051	796	863	0	-	0
Stage 1	796	-	-	-	-	-
Stage 2	1255	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 61	385	775	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	267	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 44	383	771	-	-	-
Mov Cap-2 Maneuver	~ 44	-	-	-	-	-
Stage 1	319	-	-	-	-	-
Stage 2	266	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 604	2.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	771	-	106	-	-
HCM Lane V/C Ratio	0.273	-	2.128	-	-
HCM Control Delay (s)	11.4	-	$ 604	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.1	-	19.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



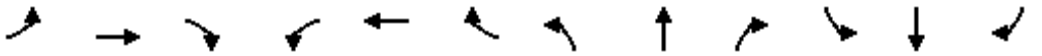
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	447	673	44	217	512	106	91	495	98	224	476	282
Future Volume (veh/h)	447	673	44	217	512	106	91	495	98	224	476	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	476	716	47	231	545	113	97	527	104	238	506	300
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	448	1068	70	256	608	125	188	515	428	232	555	463
Arrive On Green	0.25	0.32	0.32	0.15	0.21	0.21	0.11	0.28	0.28	0.13	0.30	0.30
Sat Flow, veh/h	1767	3355	220	1767	2896	598	1767	1856	1545	1767	1856	1549
Grp Volume(v), veh/h	476	376	387	231	331	327	97	527	104	238	506	300
Grp Sat Flow(s),veh/h/ln	1767	1763	1812	1767	1763	1731	1767	1856	1545	1767	1856	1549
Q Serve(g_s), s	34.0	24.8	24.8	17.2	24.5	24.7	7.0	37.2	5.0	17.6	35.3	12.3
Cycle Q Clear(g_c), s	34.0	24.8	24.8	17.2	24.5	24.7	7.0	37.2	5.0	17.6	35.3	12.3
Prop In Lane	1.00		0.12	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	561	577	256	370	363	188	515	428	232	555	463
V/C Ratio(X)	1.06	0.67	0.67	0.90	0.89	0.90	0.51	1.02	0.24	1.03	0.91	0.65
Avail Cap(c_a), veh/h	448	561	577	300	381	374	188	515	428	232	635	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	39.6	39.6	56.4	51.6	51.6	56.6	48.5	19.1	58.3	45.3	12.1
Incr Delay (d2), s/veh	60.2	3.1	3.0	25.8	22.2	23.6	2.4	46.0	0.3	66.2	16.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	11.1	11.5	9.5	13.0	13.0	3.2	23.7	2.6	12.1	18.5	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.3	42.7	42.7	82.2	73.8	75.2	59.1	94.5	19.4	124.5	61.6	14.4
LnGrp LOS	F	D	D	F	E	E	E	F	B	F	E	B
Approach Vol, veh/h		1239			889			728			1044	
Approach Delay, s/veh		68.7			76.5			79.0			62.4	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	41.4	23.7	47.3	18.5	44.7	38.2	32.8
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	* 4.2	4.6
Max Green Setting (Gmax), s	* 18	* 37	* 23	40.2	8.5	* 46	* 34	29.0
Max Q Clear Time (g_c+I1), s	19.6	39.2	19.2	26.8	9.0	37.3	36.0	26.7
Green Ext Time (p_c), s	0.0	0.0	0.2	3.9	0.0	2.8	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	70.7
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	792	702	57	10	349	58	117	211	17	120	123	645
Future Volume (vph)	792	702	57	10	349	58	117	211	17	120	123	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1595	3302	1568	1752	3430		1752	3462		1665	1744	2760
Flt Permitted	0.39	0.63	1.00	0.95	1.00		0.95	1.00		0.60	0.97	1.00
Satd. Flow (perm)	655	2119	1568	1752	3430		1752	3462		1056	1702	2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	834	739	60	11	367	61	123	222	18	126	129	679
RTOR Reduction (vph)	0	0	30	0	12	0	0	7	0	0	0	563
Lane Group Flow (vph)	467	1106	30	11	416	0	123	233	0	113	142	116
Confl. Peds. (#/hr)									3			
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	46.1	46.1	41.2	0.7	29.2		7.0	16.2		18.8	18.8	14.0
Effective Green, g (s)	46.1	46.1	41.2	0.7	29.2		7.0	16.2		18.8	18.8	14.0
Actuated g/C Ratio	0.56	0.56	0.50	0.01	0.36		0.09	0.20		0.23	0.23	0.17
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	530	1396	788	14	1222		149	684		278	393	471
v/s Ratio Prot	c0.15	0.14		0.01	0.12		c0.07	0.07		0.02	0.02	
v/s Ratio Perm	c0.34	0.31	0.02							c0.07	0.06	0.04
v/c Ratio	0.88	0.79	0.04	0.79	0.34		0.83	0.34		0.41	0.36	0.25
Uniform Delay, d1	12.1	14.1	10.3	40.5	19.3		36.8	28.3		26.1	26.5	29.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.7	3.2	0.0	130.6	0.2		29.6	0.3		1.0	0.6	0.3
Delay (s)	27.8	17.3	10.3	171.1	19.5		66.4	28.6		27.0	27.1	29.7
Level of Service	C	B	B	F	B		E	C		C	C	C
Approach Delay (s)		20.1			23.3			41.4			29.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	100	345	166	186	364
Future Vol, veh/h	95	100	345	166	186	364
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	103	109	375	180	202	396

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1265	465	0	0	555	0
Stage 1	465	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	186	595	-	-	1010	-
Stage 1	630	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	138	595	-	-	1010	-
Mov Cap-2 Maneuver	138	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	328	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	87.8	0	3.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	228	1010	-
HCM Lane V/C Ratio	-	-	0.93	0.2	-
HCM Control Delay (s)	-	-	87.8	9.5	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	8	0.7	-

Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↗		↰	↗		↕	
Traffic Vol, veh/h	7	4	1	125	2	30	1	464	109	47	494	14
Future Vol, veh/h	7	4	1	125	2	30	1	464	109	47	494	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	-	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	8	4	1	136	2	33	1	504	118	51	537	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1171	1155	545	1157	1162	506	552	0	-	506	0	0
Stage 1	647	647	-	508	508	-	-	-	-	-	-	-
Stage 2	524	508	-	649	654	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	169	196	536	173	194	564	1013	-	0	1054	-	-
Stage 1	458	465	-	546	537	-	-	-	0	-	-	-
Stage 2	535	537	-	457	462	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	149	182	536	160	180	563	1013	-	-	1052	-	-
Mov Cap-2 Maneuver	149	182	-	160	180	-	-	-	-	-	-	-
Stage 1	458	432	-	544	535	-	-	-	-	-	-	-
Stage 2	501	535	-	420	430	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.1	79.2	0	0.7
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1013	-	169	160	563	1052	-	-
HCM Lane V/C Ratio	0.001	-	0.077	0.863	0.058	0.049	-	-
HCM Control Delay (s)	8.6	0	28.1	95.1	11.8	8.6	0	-
HCM Lane LOS	A	A	D	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	0.2	6	0.2	0.2	-	-

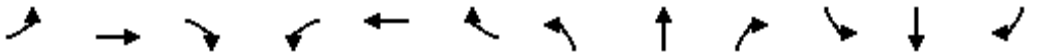
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	63	101	547	484	59
Future Vol, veh/h	21	63	101	547	484	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	23	68	110	595	526	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1373	558	590	0	-	0
Stage 1	558	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	160	527	981	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	527	981	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	433	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	981	-	314	-	-
HCM Lane V/C Ratio	0.112	-	0.291	-	-
HCM Control Delay (s)	9.1	-	21.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	1.2	-	-



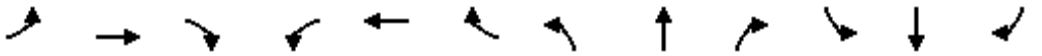
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	502	34	182	369	78	70	343	76	139	285	185
Future Volume (veh/h)	273	502	34	182	369	78	70	343	76	139	285	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	279	512	35	186	377	80	71	350	78	142	291	189
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	159	683	47	125	524	110	588	839	710	166	388	326
Arrive On Green	0.09	0.20	0.20	0.07	0.18	0.18	0.33	0.45	0.45	0.09	0.21	0.21
Sat Flow, veh/h	1767	3347	228	1767	2898	609	1767	1856	1569	1767	1856	1561
Grp Volume(v), veh/h	279	269	278	186	228	229	71	350	78	142	291	189
Grp Sat Flow(s),veh/h/ln	1767	1763	1812	1767	1763	1744	1767	1856	1569	1767	1856	1561
Q Serve(g_s), s	8.6	13.8	13.8	6.8	11.7	11.9	2.7	12.2	2.8	7.6	14.1	10.5
Cycle Q Clear(g_c), s	8.6	13.8	13.8	6.8	11.7	11.9	2.7	12.2	2.8	7.6	14.1	10.5
Prop In Lane	1.00		0.13	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	360	370	125	319	315	588	839	710	166	388	326
V/C Ratio(X)	1.76	0.75	0.75	1.49	0.71	0.73	0.12	0.42	0.11	0.86	0.75	0.58
Avail Cap(c_a), veh/h	159	551	566	125	533	527	588	839	710	166	707	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	35.9	35.9	44.6	37.0	37.1	22.3	17.8	15.2	42.9	35.6	34.2
Incr Delay (d2), s/veh	364.7	3.1	3.1	256.2	3.0	3.2	0.1	1.5	0.3	33.3	12.5	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.8	6.1	6.3	11.8	5.2	5.2	1.1	5.4	1.0	4.8	7.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	408.3	39.0	39.0	300.8	40.0	40.3	22.4	19.3	15.5	76.2	48.2	41.5
LnGrp LOS	F	D	D	F	D	D	C	B	B	E	D	D
Approach Vol, veh/h		826			643			499			622	
Approach Delay, s/veh		163.8			115.5			19.1			52.5	
Approach LOS		F			F			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	47.6	11.0	24.2	36.1	24.7	13.2	22.0
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 9	* 33	* 6.8	30.0	5.0	* 37	7.8	* 29
Max Q Clear Time (g_c+I1), s	9.6	14.2	8.8	15.8	4.7	16.1	10.6	13.9
Green Ext Time (p_c), s	0.0	2.3	0.0	2.7	0.0	2.2	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	97.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	548	381	42	9	253	44	72	140	9	86	82	455
Future Volume (vph)	548	381	42	9	253	44	72	140	9	86	82	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Lane Util. Factor	0.91	0.91	1.00	1.00	0.95		1.00	0.95		0.95	0.95	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1595	3290	1568	1752	3421		1752	3474		1665	1744	2697
Flt Permitted	0.55	0.70	1.00	0.95	1.00		0.95	1.00		0.65	0.99	1.00
Satd. Flow (perm)	929	2348	1568	1752	3421		1752	3474		1148	1740	2697
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	565	393	43	9	261	45	74	144	9	89	85	469
RTOR Reduction (vph)	0	0	20	0	13	0	0	6	0	0	0	394
Lane Group Flow (vph)	294	664	23	9	293	0	74	147	0	80	94	75
Confl. Peds. (#/hr)						1						2
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4							6		6
Actuated Green, G (s)	59.1	59.1	52.1	1.0	39.6		8.6	15.6		15.7	15.7	15.3
Effective Green, g (s)	59.1	59.1	52.1	1.0	39.6		8.6	15.6		15.7	15.7	15.3
Actuated g/C Ratio	0.62	0.62	0.54	0.01	0.41		0.09	0.16		0.16	0.16	0.16
Clearance Time (s)	4.2	6.0	6.0	4.2	4.6		4.2	4.6		4.2	4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	675	1591	850	18	1411		156	564		232	284	429
v/s Ratio Prot	c0.07	0.06		0.01	0.09		c0.04	0.04		0.03	c0.03	
v/s Ratio Perm	c0.20	0.19	0.01							c0.03	0.03	0.03
v/c Ratio	0.44	0.42	0.03	0.50	0.21		0.47	0.26		0.34	0.33	0.17
Uniform Delay, d1	10.8	9.5	10.2	47.3	18.1		41.6	35.2		36.1	35.5	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.51	0.52	0.61
Incremental Delay, d2	0.5	0.2	0.1	20.2	0.3		2.3	0.2		0.8	0.6	0.2
Delay (s)	11.3	9.7	10.2	67.4	18.5		43.8	35.4		19.1	19.1	21.6
Level of Service	B	A	B	E	B		D	D		B	B	C
Approach Delay (s)		10.2			19.9			38.1			20.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	122	164	486	279	288	607
Future Volume (veh/h)	122	164	486	279	288	607
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	133	178	528	303	313	660
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	236	210	606	514	654	1398
Arrive On Green	0.13	0.13	0.11	0.11	0.37	0.75
Sat Flow, veh/h	1767	1572	1856	1572	1767	1856
Grp Volume(v), veh/h	133	178	528	303	313	660
Grp Sat Flow(s),veh/h/ln	1767	1572	1856	1572	1767	1856
Q Serve(g_s), s	7.5	11.7	29.7	19.5	14.4	14.4
Cycle Q Clear(g_c), s	7.5	11.7	29.7	19.5	14.4	14.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	236	210	606	514	654	1398
V/C Ratio(X)	0.56	0.85	0.87	0.59	0.48	0.47
Avail Cap(c_a), veh/h	317	282	735	623	654	1398
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.70	0.70	1.00	1.00
Uniform Delay (d), s/veh	43.0	44.9	45.1	40.5	25.6	5.0
Incr Delay (d2), s/veh	2.1	16.3	11.7	3.5	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.3	16.5	8.6	5.6	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.1	61.1	56.8	44.0	26.1	6.2
LnGrp LOS	D	E	E	D	C	A
Approach Vol, veh/h	311		831			973
Approach Delay, s/veh	54.3		52.1			12.6
Approach LOS	D		D			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	45.2	40.6			85.8	20.2
Change Period (Y+Rc), s	6.0	* 6			6.0	6.0
Max Green Setting (Gmax), s	28.8	* 42			75.0	19.0
Max Q Clear Time (g_c+I1), s	16.4	31.7			16.4	13.7
Green Ext Time (p_c), s	0.7	2.9			4.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	311	831	973
Demand Flow Rate, veh/h	320	856	1002
Vehicles Circulating, veh/h	544	322	137
Vehicles Exiting, veh/h	634	817	727
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.8	26.0	20.5
Approach LOS	A	D	C

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	320	856	1002
Cap Entry Lane, veh/h	792	994	1200
Entry HV Adj Factor	0.972	0.971	0.971
Flow Entry, veh/h	311	831	973
Cap Entry, veh/h	770	965	1165
V/C Ratio	0.404	0.862	0.835
Control Delay, s/veh	9.8	26.0	20.5
LOS	A	D	C
95th %tile Queue, veh	2	11	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	6	1	107	2	54	1	799	151	57	668	21
Future Volume (veh/h)	10	6	1	107	2	54	1	799	151	57	668	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	6	1	115	2	58	1	859	0	61	718	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	66	11	113	5	143	566	1275		78	727	23
Arrive On Green	0.01	0.04	0.04	0.06	0.09	0.09	0.64	1.00	0.00	0.09	0.81	0.81
Sat Flow, veh/h	1767	1551	258	1767	53	1528	1767	1856	1572	1767	1788	57
Grp Volume(v), veh/h	11	0	7	115	0	60	1	859	0	61	0	741
Grp Sat Flow(s),veh/h/ln	1767	0	1809	1767	0	1581	1767	1856	1572	1767	0	1845
Q Serve(g_s), s	0.7	0.0	0.4	6.8	0.0	3.8	0.0	0.0	0.0	3.6	0.0	40.3
Cycle Q Clear(g_c), s	0.7	0.0	0.4	6.8	0.0	3.8	0.0	0.0	0.0	3.6	0.0	40.3
Prop In Lane	1.00		0.14	1.00		0.97	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	23	0	77	113	0	148	566	1275		78	0	751
V/C Ratio(X)	0.48	0.00	0.09	1.01	0.00	0.41	0.00	0.67		0.79	0.00	0.99
Avail Cap(c_a), veh/h	83	0	563	113	0	519	566	1275		83	0	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.82	0.82	0.00	0.86	0.00	0.86
Uniform Delay (d), s/veh	51.9	0.0	48.8	49.6	0.0	45.3	12.9	0.0	0.0	47.9	0.0	9.6
Incr Delay (d2), s/veh	14.5	0.0	0.5	88.4	0.0	1.8	0.0	2.4	0.0	31.8	0.0	27.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	5.8	0.0	1.6	0.0	0.8	0.0	2.2	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.4	0.0	49.3	138.0	0.0	47.1	12.9	2.4	0.0	79.7	0.0	37.1
LnGrp LOS	E	A	D	F	A	D	B	A		E	A	D
Approach Vol, veh/h		18			175			860	A		802	
Approach Delay, s/veh		59.8			106.8			2.4			40.3	
Approach LOS		E			F			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	77.4	11.0	8.7	38.6	47.7	5.6	14.1
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	* 4.2	4.6	* 4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 5	44.0	* 6.8	* 33	5.0	* 44	* 5	* 35
Max Q Clear Time (g_c+I1), s	5.6	2.0	8.8	2.4	2.0	42.3	2.7	5.8
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0	0.0	0.9	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Notes

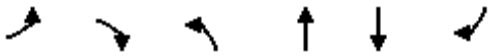
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	18	175	1022	802
Demand Flow Rate, veh/h	18	180	1053	827
Vehicles Circulating, veh/h	921	897	80	121
Vehicles Exiting, veh/h	27	69	859	956
Ped Vol Crossing Leg, #/h	0	5	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	11.5	10.8	12.6
Approach LOS	A	B	B	B

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	167	4.976
Entry Flow, veh/h	18	180	886	1957	827
Cap Entry Lane, veh/h	539	553	1272	0.971	1220
Entry HV Adj Factor	0.990	0.972	0.971	162	0.970
Flow Entry, veh/h	18	175	860	1900	802
Cap Entry, veh/h	534	537	1235	0.085	1183
V/C Ratio	0.033	0.326	0.697	0.0	0.678
Control Delay, s/veh	7.1	11.5	12.8	A	12.6
LOS	A	B	B	0	B
95th %tile Queue, veh	0	1	6		6



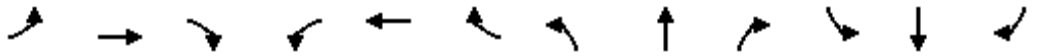
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	140	198	783	680	127
Future Volume (veh/h)	72	140	198	783	680	127
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	77	149	211	833	723	135
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	203	181	592	1481	779	656
Arrive On Green	0.12	0.12	0.34	0.80	0.56	0.56
Sat Flow, veh/h	1767	1572	1767	1856	1856	1563
Grp Volume(v), veh/h	77	149	211	833	723	135
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1563
Q Serve(g_s), s	4.3	9.8	9.6	17.4	37.9	4.6
Cycle Q Clear(g_c), s	4.3	9.8	9.6	17.4	37.9	4.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	203	181	592	1481	779	656
V/C Ratio(X)	0.38	0.82	0.36	0.56	0.93	0.21
Avail Cap(c_a), veh/h	317	282	592	1481	942	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.76	0.76
Uniform Delay (d), s/veh	43.4	45.8	26.6	3.9	22.0	14.6
Incr Delay (d2), s/veh	1.2	10.7	0.4	1.6	15.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	8.8	4.0	4.9	16.7	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	56.5	27.0	5.5	37.4	15.1
LnGrp LOS	D	E	C	A	D	B
Approach Vol, veh/h	226			1044	858	
Approach Delay, s/veh	52.4			9.8	33.9	
Approach LOS	D			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		89.2		16.8	40.1	49.1
Change Period (Y+Rc), s		4.6		4.6	4.6	* 4.6
Max Green Setting (Gmax), s		77.8		19.0	19.8	* 54
Max Q Clear Time (g_c+I1), s		19.4		11.8	11.6	39.9
Green Ext Time (p_c), s		7.6		0.4	0.4	4.6

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



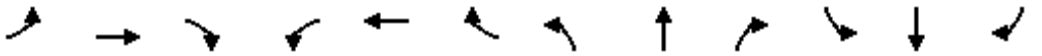
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	447	673	44	217	512	106	91	495	98	224	476	282
Future Volume (veh/h)	447	673	44	217	512	106	91	495	98	224	476	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	476	716	47	231	545	113	97	527	104	238	506	300
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	571	1099	72	308	716	148	124	725	142	276	1176	780
Arrive On Green	0.17	0.33	0.33	0.09	0.25	0.25	0.07	0.25	0.25	0.16	0.33	0.33
Sat Flow, veh/h	3428	3355	220	3428	2902	599	1767	2927	575	1767	3526	1551
Grp Volume(v), veh/h	476	376	387	231	330	328	97	316	315	238	506	300
Grp Sat Flow(s),veh/h/ln	1714	1763	1812	1714	1763	1739	1767	1763	1739	1767	1763	1551
Q Serve(g_s), s	13.2	18.0	18.0	6.5	17.1	17.2	5.3	16.2	16.4	12.9	11.0	2.7
Cycle Q Clear(g_c), s	13.2	18.0	18.0	6.5	17.1	17.2	5.3	16.2	16.4	12.9	11.0	2.7
Prop In Lane	1.00		0.12	1.00		0.34	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	571	577	594	308	435	429	124	436	431	276	1176	780
V/C Ratio(X)	0.83	0.65	0.65	0.75	0.76	0.76	0.78	0.72	0.73	0.86	0.43	0.38
Avail Cap(c_a), veh/h	828	702	721	522	544	537	266	605	597	445	1553	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	28.3	28.3	43.7	34.4	34.4	45.1	34.0	34.0	40.5	25.5	6.0
Incr Delay (d2), s/veh	4.9	1.6	1.5	3.6	4.8	5.1	10.2	2.7	2.9	9.6	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	7.6	7.8	2.9	7.7	7.7	2.7	7.2	7.1	6.2	4.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	29.9	29.9	47.4	39.2	39.5	55.3	36.7	36.9	50.1	25.8	6.3
LnGrp LOS	D	C	C	D	D	D	E	D	D	D	C	A
Approach Vol, veh/h		1239			889			728			1044	
Approach Delay, s/veh		35.5			41.4			39.2			25.7	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	29.0	13.1	36.9	11.1	37.5	21.0	28.9
Change Period (Y+Rc), s	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 25	* 34	* 15	39.2	* 15	43.4	23.8	* 30
Max Q Clear Time (g_c+I1), s	14.9	18.4	8.5	20.0	7.3	13.0	15.2	19.2
Green Ext Time (p_c), s	0.5	3.5	0.4	4.5	0.1	4.7	1.2	3.0

Intersection Summary	
HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



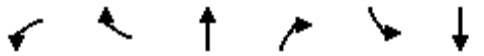
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	447	673	44	217	512	106	91	495	98	224	476	282
Future Volume (veh/h)	447	673	44	217	512	106	91	495	98	224	476	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	476	716	47	231	545	113	97	527	104	238	506	300
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	561	909	60	259	724	150	122	737	145	257	609	509
Arrive On Green	0.16	0.27	0.27	0.15	0.25	0.25	0.07	0.25	0.25	0.15	0.33	0.33
Sat Flow, veh/h	3428	3354	220	1767	2902	599	1767	2927	575	1767	1856	1551
Grp Volume(v), veh/h	476	376	387	231	330	328	97	316	315	238	506	300
Grp Sat Flow(s),veh/h/ln	1714	1763	1811	1767	1763	1739	1767	1763	1739	1767	1856	1551
Q Serve(g_s), s	12.8	18.8	18.8	12.2	16.4	16.6	5.1	15.5	15.7	12.6	23.9	9.4
Cycle Q Clear(g_c), s	12.8	18.8	18.8	12.2	16.4	16.6	5.1	15.5	15.7	12.6	23.9	9.4
Prop In Lane	1.00		0.12	1.00		0.34	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	561	478	491	259	440	434	122	444	438	257	609	509
V/C Ratio(X)	0.85	0.79	0.79	0.89	0.75	0.76	0.79	0.71	0.72	0.93	0.83	0.59
Avail Cap(c_a), veh/h	561	557	572	259	540	533	127	559	551	257	717	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	32.1	32.1	39.8	32.9	32.9	43.5	32.4	32.4	40.1	29.5	10.0
Incr Delay (d2), s/veh	11.7	6.4	6.3	29.8	4.6	4.9	27.4	3.1	3.3	37.0	7.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	8.6	8.8	7.3	7.3	7.3	3.2	6.9	6.9	8.0	11.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	38.5	38.4	69.6	37.5	37.8	70.9	35.5	35.8	77.0	36.7	11.1
LnGrp LOS	D	D	D	E	D	D	E	D	D	E	D	B
Approach Vol, veh/h		1239			889			728			1044	
Approach Delay, s/veh		43.0			46.0			40.3			38.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	28.5	18.1	30.3	10.8	35.7	20.1	28.3
Change Period (Y+Rc), s	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 14	* 30	* 14	30.0	* 6.8	36.7	14.8	* 29
Max Q Clear Time (g_c+I1), s	14.6	17.7	14.2	20.8	7.1	25.9	14.8	18.6
Green Ext Time (p_c), s	0.0	3.2	0.0	3.1	0.0	3.2	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	95	100	345	166	186	364
Future Volume (veh/h)	95	100	345	166	186	364
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	103	109	375	180	202	396
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	211	188	544	461	267	1034
Arrive On Green	0.12	0.12	0.29	0.29	0.15	0.56
Sat Flow, veh/h	1767	1572	1856	1572	1767	1856
Grp Volume(v), veh/h	103	109	375	180	202	396
Grp Sat Flow(s),veh/h/ln	1767	1572	1856	1572	1767	1856
Q Serve(g_s), s	2.0	2.4	6.7	3.4	4.1	4.5
Cycle Q Clear(g_c), s	2.0	2.4	6.7	3.4	4.1	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	211	188	544	461	267	1034
V/C Ratio(X)	0.49	0.58	0.69	0.39	0.76	0.38
Avail Cap(c_a), veh/h	904	804	1249	1058	752	2247
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	15.3	15.5	11.6	10.5	15.1	4.6
Incr Delay (d2), s/veh	1.7	2.8	1.6	0.5	4.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	1.8	0.7	1.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	18.3	13.2	11.0	19.4	4.9
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	212		555			598
Approach Delay, s/veh	17.7		12.5			9.8
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.8	16.9			26.7	10.4
Change Period (Y+Rc), s	* 4.2	6.0			6.0	6.0
Max Green Setting (Gmax), s	* 16	25.0			45.0	19.0
Max Q Clear Time (g_c+I1), s	6.1	8.7			6.5	4.4
Green Ext Time (p_c), s	0.3	2.2			2.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	212	555	598
Demand Flow Rate, veh/h	218	571	616
Vehicles Circulating, veh/h	386	208	106
Vehicles Exiting, veh/h	393	514	498
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.4	9.3	8.4
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	218	571	616
Cap Entry Lane, veh/h	931	1116	1238
Entry HV Adj Factor	0.972	0.972	0.971
Flow Entry, veh/h	212	555	598
Cap Entry, veh/h	905	1084	1202
V/C Ratio	0.234	0.512	0.497
Control Delay, s/veh	6.4	9.3	8.4
LOS	A	A	A
95th %tile Queue, veh	1	3	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	1	125	2	30	1	464	109	47	494	14
Future Volume (veh/h)	7	4	1	125	2	30	1	464	109	47	494	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	8	4	1	136	2	33	1	504	0	51	537	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	19	74	19	173	13	208	4	676		96	749	21
Arrive On Green	0.01	0.05	0.05	0.10	0.14	0.14	0.00	0.36	0.00	0.05	0.42	0.42
Sat Flow, veh/h	1767	1433	358	1767	91	1496	1767	1856	1572	1767	1796	50
Grp Volume(v), veh/h	8	0	5	136	0	35	1	504	0	51	0	552
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1767	0	1586	1767	1856	1572	1767	0	1847
Q Serve(g_s), s	0.2	0.0	0.1	3.0	0.0	0.8	0.0	9.4	0.0	1.1	0.0	9.9
Cycle Q Clear(g_c), s	0.2	0.0	0.1	3.0	0.0	0.8	0.0	9.4	0.0	1.1	0.0	9.9
Prop In Lane	1.00		0.20	1.00		0.94	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	19	0	93	173	0	221	4	676		96	0	770
V/C Ratio(X)	0.43	0.00	0.05	0.78	0.00	0.16	0.23	0.75		0.53	0.00	0.72
Avail Cap(c_a), veh/h	222	0	1484	257	0	1346	222	1351		222	0	1344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	18.0	17.6	0.0	15.1	19.9	11.0	0.0	18.4	0.0	9.7
Incr Delay (d2), s/veh	14.5	0.0	0.2	9.0	0.0	0.3	23.9	1.7	0.0	4.5	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.5	0.0	0.3	0.0	3.0	0.0	0.5	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	0.0	18.2	26.6	0.0	15.4	43.7	12.7	0.0	22.9	0.0	10.9
LnGrp LOS	C	A	B	C	A	B	D	B		C	A	B
Approach Vol, veh/h		13			171			505	A		603	
Approach Delay, s/veh		28.0			24.3			12.8			11.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	19.1	8.1	6.3	4.3	21.2	4.6	9.7
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	* 4.2	* 4.2	4.6	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 5	29.0	* 5.8	* 33	* 5	29.0	* 5	* 34
Max Q Clear Time (g_c+I1), s	3.1	11.4	5.0	2.1	2.0	11.9	2.2	2.8
Green Ext Time (p_c), s	0.0	2.9	0.0	0.0	0.0	3.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

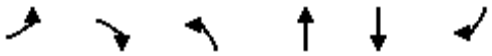
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	13	171	623	603
Demand Flow Rate, veh/h	13	176	642	621
Vehicles Circulating, veh/h	746	528	65	143
Vehicles Exiting, veh/h	18	57	694	561
Ped Vol Crossing Leg, #/h	0	2	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.9	7.0	5.5	9.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	122	4.976
Entry Flow, veh/h	13	176	520	1957	621
Cap Entry Lane, veh/h	645	805	1291	0.971	1193
Entry HV Adj Factor	0.991	0.971	0.971	118	0.971
Flow Entry, veh/h	13	171	505	1900	603
Cap Entry, veh/h	639	782	1254	0.062	1158
V/C Ratio	0.020	0.219	0.403	0.0	0.521
Control Delay, s/veh	5.9	7.0	6.8	A	9.0
LOS	A	A	A	0	A
95th %tile Queue, veh	0	1	2		3



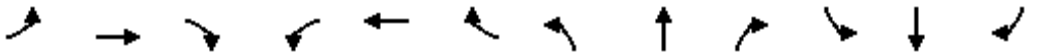
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	63	101	547	484	59
Future Volume (veh/h)	21	63	101	547	484	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	23	68	110	595	526	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	152	135	171	1172	754	639
Arrive On Green	0.09	0.09	0.10	0.63	0.41	0.41
Sat Flow, veh/h	1767	1572	1767	1856	1856	1572
Grp Volume(v), veh/h	23	68	110	595	526	64
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1572
Q Serve(g_s), s	0.4	1.3	2.0	5.7	7.7	0.8
Cycle Q Clear(g_c), s	0.4	1.3	2.0	5.7	7.7	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	152	135	171	1172	754	639
V/C Ratio(X)	0.15	0.50	0.64	0.51	0.70	0.10
Avail Cap(c_a), veh/h	1030	916	564	2720	1889	1601
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	13.8	14.2	14.2	3.3	8.0	6.0
Incr Delay (d2), s/veh	0.5	2.9	4.0	0.3	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.8	0.3	1.9	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	17.1	18.2	3.6	9.2	6.1
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	91			705	590	
Approach Delay, s/veh	16.4			5.9	8.9	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.2		7.4	7.4	17.9
Change Period (Y+Rc), s		4.6		4.6	* 4.2	4.6
Max Green Setting (Gmax), s		47.8		19.0	* 10	33.2
Max Q Clear Time (g_c+I1), s		7.7		3.3	4.0	9.7
Green Ext Time (p_c), s		4.4		0.2	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	502	34	182	369	78	70	343	76	139	285	185
Future Volume (veh/h)	273	502	34	182	369	78	70	343	76	139	285	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	279	512	35	186	377	80	71	350	78	142	291	189
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	406	869	59	306	646	136	221	625	138	184	667	481
Arrive On Green	0.12	0.26	0.26	0.09	0.22	0.22	0.12	0.22	0.22	0.10	0.19	0.19
Sat Flow, veh/h	3428	3347	228	3428	2899	609	1767	2870	632	1767	3526	1560
Grp Volume(v), veh/h	279	269	278	186	228	229	71	213	215	142	291	189
Grp Sat Flow(s),veh/h/ln	1714	1763	1813	1714	1763	1745	1767	1763	1739	1767	1763	1560
Q Serve(g_s), s	4.1	7.0	7.0	2.7	6.0	6.1	1.9	5.6	5.8	4.1	3.8	0.0
Cycle Q Clear(g_c), s	4.1	7.0	7.0	2.7	6.0	6.1	1.9	5.6	5.8	4.1	3.8	0.0
Prop In Lane	1.00		0.13	1.00		0.35	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	406	458	471	306	393	389	221	384	379	184	667	481
V/C Ratio(X)	0.69	0.59	0.59	0.61	0.58	0.59	0.32	0.56	0.57	0.77	0.44	0.39
Avail Cap(c_a), veh/h	545	1043	1072	420	978	969	221	992	978	375	2369	1234
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	16.9	16.9	22.9	18.1	18.2	20.8	18.2	18.2	22.8	18.7	14.2
Incr Delay (d2), s/veh	2.3	1.2	1.2	1.9	1.4	1.4	0.8	1.3	1.3	6.7	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.6	2.7	1.1	2.3	2.3	0.8	2.2	2.2	1.9	1.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	18.1	18.1	24.9	19.5	19.6	21.7	19.4	19.6	29.5	19.2	14.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		826			643			499			622	
Approach Delay, s/veh		20.2			21.1			19.8			20.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	15.6	8.9	18.2	10.7	14.5	10.8	16.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 11	* 29	* 6.4	30.9	5.0	* 35	8.3	* 29
Max Q Clear Time (g_c+I1), s	6.1	7.8	4.7	9.0	3.9	5.8	6.1	8.1
Green Ext Time (p_c), s	0.1	2.5	0.1	3.2	0.0	2.5	0.2	2.6

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	502	34	182	369	78	70	343	76	139	285	185
Future Volume (veh/h)	273	502	34	182	369	78	70	343	76	139	285	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	279	512	35	186	377	80	71	350	78	142	291	189
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	490	824	56	218	636	134	116	616	136	182	454	382
Arrive On Green	0.14	0.25	0.25	0.12	0.22	0.22	0.07	0.21	0.21	0.10	0.24	0.24
Sat Flow, veh/h	3428	3347	228	1767	2899	609	1767	2870	632	1767	1856	1563
Grp Volume(v), veh/h	279	269	278	186	228	229	71	213	215	142	291	189
Grp Sat Flow(s),veh/h/ln	1714	1763	1812	1767	1763	1745	1767	1763	1739	1767	1856	1563
Q Serve(g_s), s	4.2	7.5	7.5	5.7	6.4	6.5	2.2	5.9	6.1	4.3	7.7	5.7
Cycle Q Clear(g_c), s	4.2	7.5	7.5	5.7	6.4	6.5	2.2	5.9	6.1	4.3	7.7	5.7
Prop In Lane	1.00		0.13	1.00		0.35	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	490	434	446	218	387	383	116	378	373	182	454	382
V/C Ratio(X)	0.57	0.62	0.62	0.85	0.59	0.60	0.61	0.56	0.58	0.78	0.64	0.49
Avail Cap(c_a), veh/h	490	961	988	218	993	983	161	1032	1018	283	1201	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	18.4	18.5	23.6	19.2	19.3	25.0	19.3	19.4	24.1	18.6	17.9
Incr Delay (d2), s/veh	1.6	1.4	1.4	26.1	1.4	1.5	5.1	1.3	1.4	7.2	1.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.8	2.9	3.7	2.5	2.5	1.0	2.4	2.4	2.0	3.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	19.9	19.9	49.7	20.7	20.8	30.1	20.6	20.8	31.3	20.1	18.8
LnGrp LOS	C	B	B	D	C	C	C	C	C	C	C	B
Approach Vol, veh/h		826			643			499			622	
Approach Delay, s/veh		21.1			29.1			22.0			22.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	16.0	11.0	18.1	7.8	18.1	12.5	16.7
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2	4.6	4.2	* 4.6	4.6	* 4.6
Max Green Setting (Gmax), s	* 8.8	* 32	* 6.8	30.0	5.0	* 36	5.8	* 31
Max Q Clear Time (g_c+I1), s	6.3	8.1	7.7	9.5	4.2	9.7	6.2	8.5
Green Ext Time (p_c), s	0.1	2.6	0.0	3.1	0.0	2.3	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	152	129	306	134	354	344
Average Queue (ft)	72	55	176	55	208	103
95th Queue (ft)	132	109	316	113	307	247
Link Distance (ft)	2577		2596			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)			3		5	0
Queuing Penalty (veh)			9		32	0

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	49	31	180	94	25	651	250	111	390
Average Queue (ft)	11	9	99	31	1	321	75	32	151
95th Queue (ft)	36	31	161	68	8	624	263	69	340
Link Distance (ft)		288		273		735			2596
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		250		250		150	250	
Storage Blk Time (%)						19			4
Queuing Penalty (veh)						28			2

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	B18	SB	SB
Directions Served	L	R	L	T	T	T	R
Maximum Queue (ft)	217	126	221	298	638	541	370
Average Queue (ft)	64	42	118	115	59	218	47
95th Queue (ft)	139	83	196	243	353	408	156
Link Distance (ft)	555			1115	592	735	
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					2		
Storage Bay Dist (ft)		75	160				250
Storage Blk Time (%)	11	2	4	2		6	
Queuing Penalty (veh)	16	2	28	5		8	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	L	T	TR	L	T	TR	L
Maximum Queue (ft)	284	334	435	401	182	219	337	332	160	457	440	353
Average Queue (ft)	232	220	192	200	80	128	196	235	125	258	225	178
95th Queue (ft)	303	351	338	307	138	217	304	327	202	391	365	299
Link Distance (ft)			624	624			2530	2530		570	570	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160	160			100			250
Storage Blk Time (%)	20	11	2		0	1	18		12	52		3
Queuing Penalty (veh)	67	37	10		1	2	39		29	48		6

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	259	270	158
Average Queue (ft)	131	143	67
95th Queue (ft)	213	229	119
Link Distance (ft)	592	592	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)	0	0	
Queuing Penalty (veh)	0	1	

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	430	549	420	37	72	208	180	129	195	175	113	198
Average Queue (ft)	216	248	195	5	13	140	116	84	92	43	54	110
95th Queue (ft)	344	389	324	17	46	207	183	132	151	107	106	182
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)	1	1				7						1
Queuing Penalty (veh)	4	2				1						0

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	183	202
Average Queue (ft)	85	106
95th Queue (ft)	144	161
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)	0	0
Queuing Penalty (veh)	0	0

Network Summary

Network wide Queuing Penalty: 377

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	91	264	476
Average Queue (ft)	28	99	164
95th Queue (ft)	61	202	366
Link Distance (ft)	2554	2533	2586
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	32	136	408	250	127
Average Queue (ft)	9	40	69	19	45
95th Queue (ft)	31	85	221	121	100
Link Distance (ft)	255	230	708		2533
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)			5		
Queuing Penalty (veh)			7		

Zone Summary

Zone wide Queuing Penalty: 7

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	198	86	333	227	290	259
Average Queue (ft)	99	39	120	55	175	111
95th Queue (ft)	170	67	245	147	270	228
Link Distance (ft)	2577		2596			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)			1		2	0
Queuing Penalty (veh)			2		9	0

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	R	L	TR
Maximum Queue (ft)	31	51	200	96	568	250	94	440
Average Queue (ft)	8	8	81	32	264	82	45	176
95th Queue (ft)	30	30	151	68	489	275	87	351
Link Distance (ft)		288		273	735			2596
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		250			150	250	
Storage Blk Time (%)					17			4
Queuing Penalty (veh)					27			2

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	B18	SB	SB
Directions Served	L	R	L	T	T	T	R
Maximum Queue (ft)	131	192	239	315	623	347	102
Average Queue (ft)	56	47	143	138	40	175	26
95th Queue (ft)	112	111	231	269	290	311	67
Link Distance (ft)	555			1115	593	735	
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					1		
Storage Bay Dist (ft)		75	160				250
Storage Blk Time (%)	7	5	14	2		3	
Queuing Penalty (veh)	10	3	106	4		3	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	TR	L	T
Maximum Queue (ft)	285	334	423	394	219	437	411	160	293	280	370	712
Average Queue (ft)	241	245	219	194	173	209	234	108	201	166	292	412
95th Queue (ft)	314	369	377	295	235	370	361	180	272	261	452	776
Link Distance (ft)			636	636		2530	2530		570	570		593
Upstream Blk Time (%)												15
Queuing Penalty (veh)												120
Storage Bay Dist (ft)	235	235			160			100			250	
Storage Blk Time (%)	29	18	2		27	9		14	38		42	13
Queuing Penalty (veh)	97	61	8		70	20		34	35		316	66

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB	B18
Directions Served	R	T
Maximum Queue (ft)	370	699
Average Queue (ft)	169	115
95th Queue (ft)	401	474
Link Distance (ft)		1115
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	358	400	318	27	48	242	185	169	156	130	138	185
Average Queue (ft)	220	249	208	5	11	139	109	85	74	40	37	102
95th Queue (ft)	319	346	312	15	35	211	187	160	130	95	91	167
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)	0	0				7						0
Queuing Penalty (veh)	0	1				1						0

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	176	203
Average Queue (ft)	86	105
95th Queue (ft)	145	172
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 997

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	88	79	186	96	203	90
Average Queue (ft)	39	26	89	42	78	49
95th Queue (ft)	72	52	154	81	130	85
Link Distance (ft)	2577		2596			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	L	TR
Maximum Queue (ft)	31	31	188	65	25	229	94	273
Average Queue (ft)	7	8	68	19	1	117	36	117
95th Queue (ft)	27	30	135	48	8	203	76	248
Link Distance (ft)		286		273		735		2596
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		250		250		250	
Storage Blk Time (%)						4		1
Queuing Penalty (veh)						4		0

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	45	62	129	141	214	53
Average Queue (ft)	11	19	51	55	101	18
95th Queue (ft)	32	40	100	131	190	52
Link Distance (ft)	555			1117	735	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		75	160			250
Storage Blk Time (%)		0		0		
Queuing Penalty (veh)		0		0		

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	L	T	TR	L	T	TR	L
Maximum Queue (ft)	181	146	242	280	96	116	197	244	159	288	302	206
Average Queue (ft)	108	66	107	123	42	73	84	123	52	139	105	106
95th Queue (ft)	167	124	195	214	78	109	155	202	125	216	198	181
Link Distance (ft)			624	624			2533	2533		570	570	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160	160			100			250
Storage Blk Time (%)			0				0		3	21		
Queuing Penalty (veh)			1				0		5	15		

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	118	116	119
Average Queue (ft)	61	62	49
95th Queue (ft)	107	112	92
Link Distance (ft)	590	590	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	214	228	206	14	31	140	177	129	89	66	71	132
Average Queue (ft)	110	145	78	4	11	87	56	49	44	20	20	64
95th Queue (ft)	188	204	162	11	34	143	122	94	73	48	50	107
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	98	108
Average Queue (ft)	49	63
95th Queue (ft)	81	95
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 26

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	78	125	55
Average Queue (ft)	24	45	20
95th Queue (ft)	57	80	53
Link Distance (ft)	2568	2546	2600
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LTR
Maximum Queue (ft)	31	67	134	145
Average Queue (ft)	3	25	14	34
95th Queue (ft)	18	60	61	84
Link Distance (ft)	254	230	706	2546
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Reed Avenue & South Avenue

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	112	64	173	73	160	117
Average Queue (ft)	39	26	93	42	84	44
95th Queue (ft)	77	54	153	71	133	88
Link Distance (ft)	2577		2596			2618
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		250		250	250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Reed Avenue & Parlier Avenue

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	30	31	140	74	26	384	250	72	187
Average Queue (ft)	4	6	72	16	2	128	8	30	109
95th Queue (ft)	21	25	122	49	13	274	82	57	179
Link Distance (ft)		286		273		735			2596
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		250		250		150	250	
Storage Blk Time (%)						6			
Queuing Penalty (veh)						6			

Intersection: 3: Reed Avenue & College Driveway

Movement	EB	EB	NB	NB	B18	SB	SB
Directions Served	L	R	L	T	T	T	R
Maximum Queue (ft)	60	61	135	214	635	316	54
Average Queue (ft)	13	25	53	73	21	97	14
95th Queue (ft)	40	51	104	181	209	204	42
Link Distance (ft)	555			1117	591	735	
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					1		
Storage Bay Dist (ft)		75	160				250
Storage Blk Time (%)	0	0		1		1	
Queuing Penalty (veh)	0	0		1		0	

Intersection: 4: Reed Avenue & Manning Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	TR	L	T
Maximum Queue (ft)	231	228	226	184	220	455	362	159	230	205	160	302
Average Queue (ft)	137	98	94	110	192	225	163	54	115	81	110	138
95th Queue (ft)	228	199	168	168	270	421	273	108	183	161	157	229
Link Distance (ft)			636	636		2533	2533		570	570		591
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235	235			160			100			250	
Storage Blk Time (%)	0	0	0		72	0		3	16			0
Queuing Penalty (veh)	1	0	0		132	1		5	11			1

Intersection: 4: Reed Avenue & Manning Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	118
Average Queue (ft)	57
95th Queue (ft)	95
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Manning Avenue & I Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	T	R	L	T	TR	L	T	TR	L	LT
Maximum Queue (ft)	282	261	144	44	31	140	131	92	90	46	71	153
Average Queue (ft)	109	130	53	4	4	69	52	43	46	12	17	61
95th Queue (ft)	204	207	121	18	20	125	97	81	80	35	49	114
Link Distance (ft)		1769	1769			1084	1084		1060	1060		661
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370			1000	150			250			200	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 5: Manning Avenue & I Street

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	98	132
Average Queue (ft)	49	65
95th Queue (ft)	78	107
Link Distance (ft)	661	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

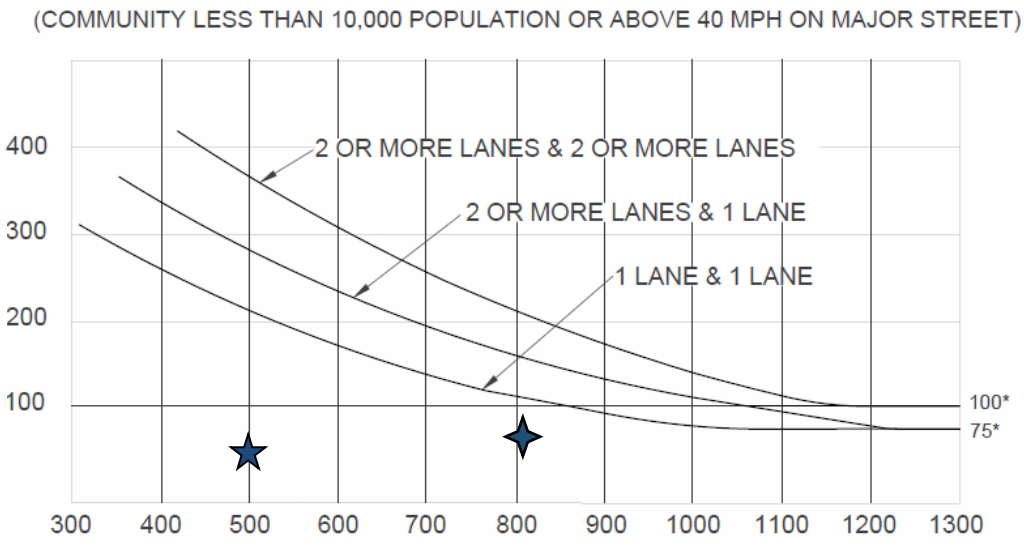
Network Summary

Network wide Queuing Penalty: 160

Appendix K: Traffic Signal Warrants

Warrant 3: Peak Hour (Rural)

Existing Traffic Conditions
1. Reed Avenue / South Avenue
Weekday PM (Weekend PM) Peak Hour



South Avenue
Highest Approach Volume =
62 (52) VPH

Reed Avenue Total of Both Approaches =
809 (500) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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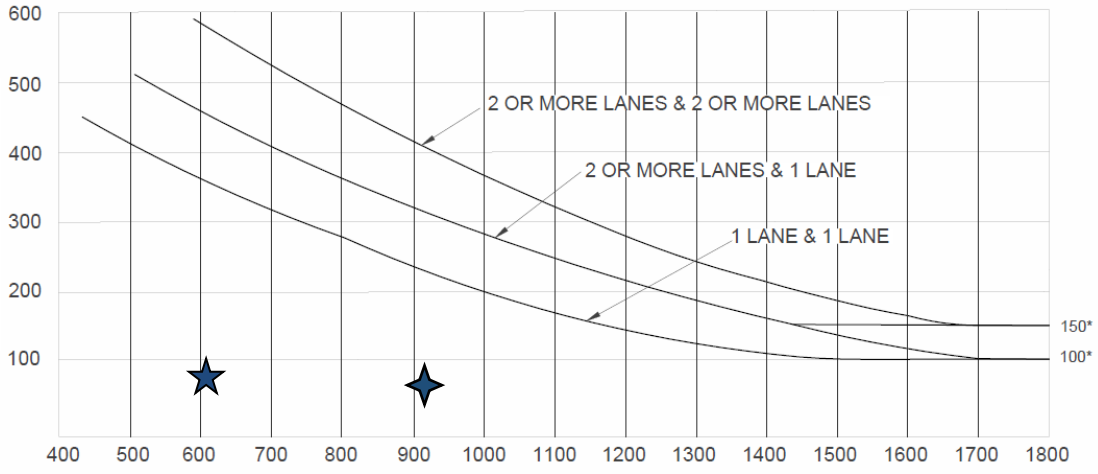
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
2. Reed Avenue / Parlier Avenue
Weekday PM (Weekend PM) Peak Hour

Parlier Avenue Highest Approach Volume = 77 (80) VPH



Reed Avenue Total of Both Approaches = 925 (606) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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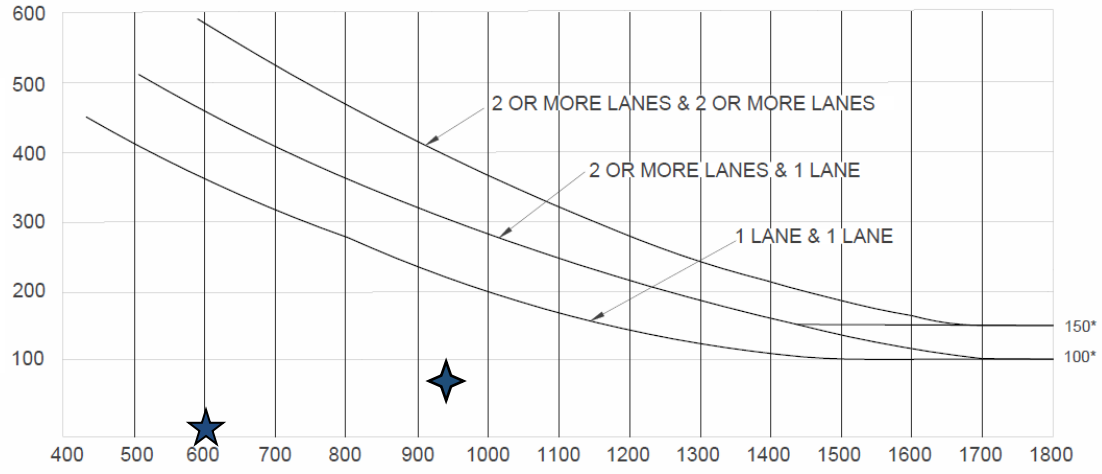
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
3. Reed Avenue / College Driveway
Weekday PM (Weekend PM) Peak Hour

College Driveway Highest Approach Volume = 76 (9) VPH



Reed Avenue Total of Both Approaches = 949 (600) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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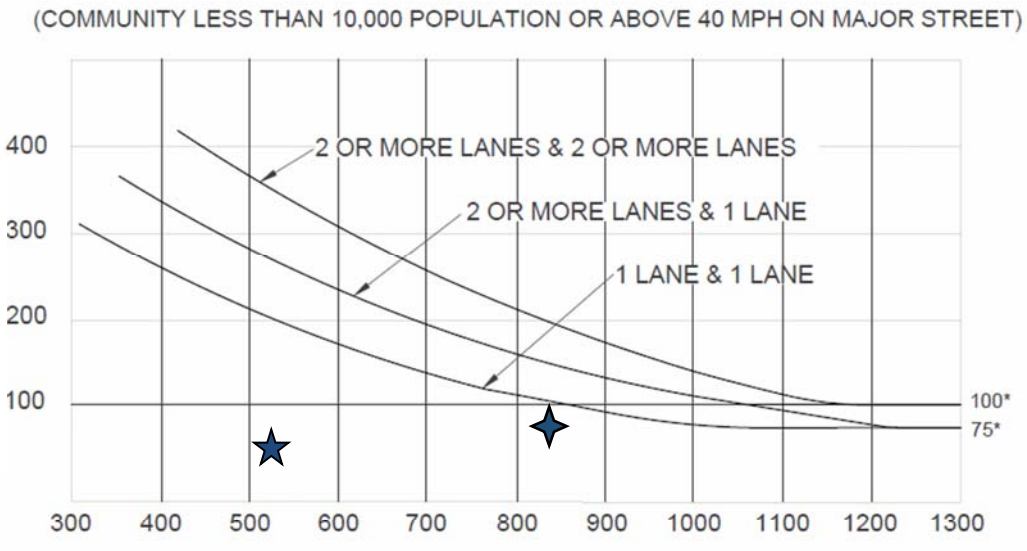
Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
1. Reed Avenue / South Avenue
Weekday PM (Weekend PM) Peak Hour

South Avenue Highest Approach Volume = 75 (66) VPH



Reed Avenue Total of Both Approaches =

833 (525) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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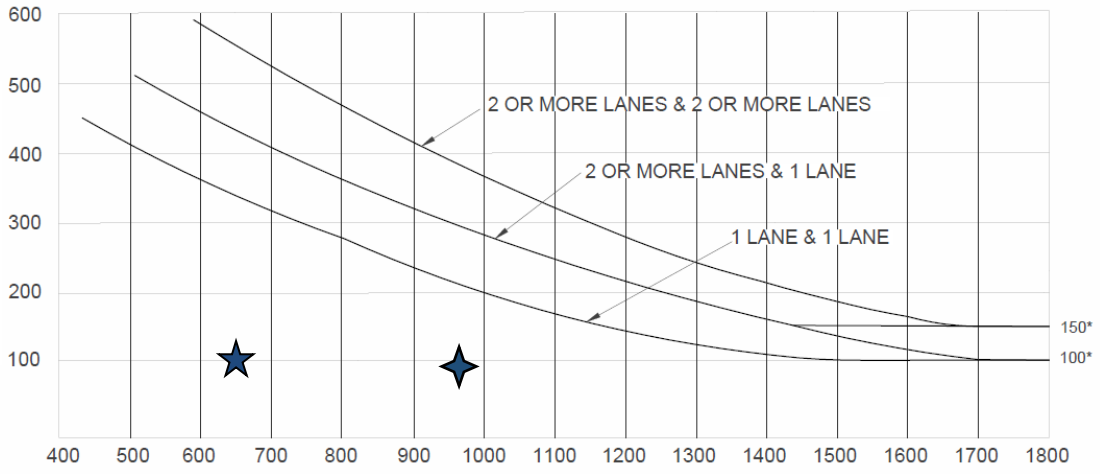
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
2. Reed Avenue / Parlier Avenue
Weekday PM (Weekend PM) Peak Hour

Parlier Avenue Highest Approach Volume = 96 (101) VPH



Reed Avenue Total of Both Approaches = 965 (648) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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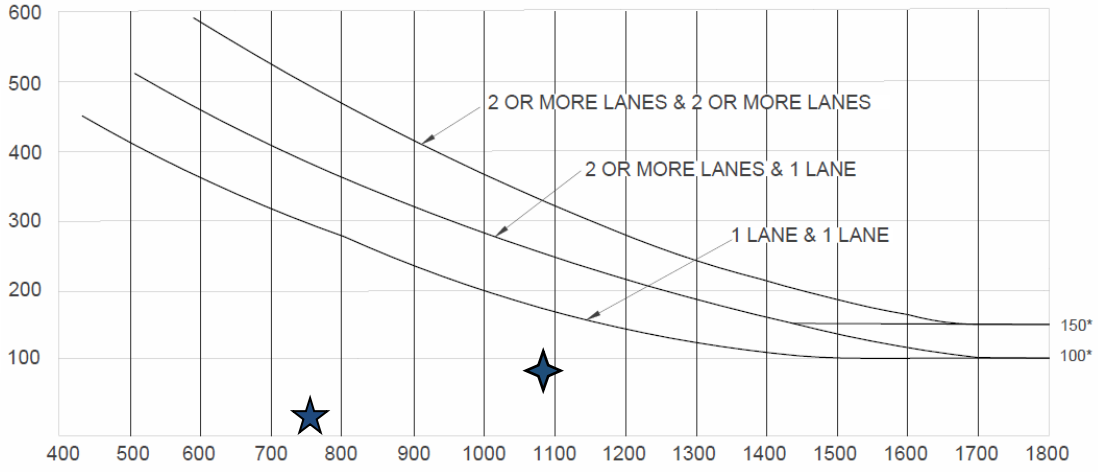
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
3. Reed Avenue / College Driveway
Weekday PM (Weekend PM) Peak Hour

College Driveway Highest Approach Volume = 88 (22) VPH



Reed Avenue Total of Both Approaches = 1090 (751) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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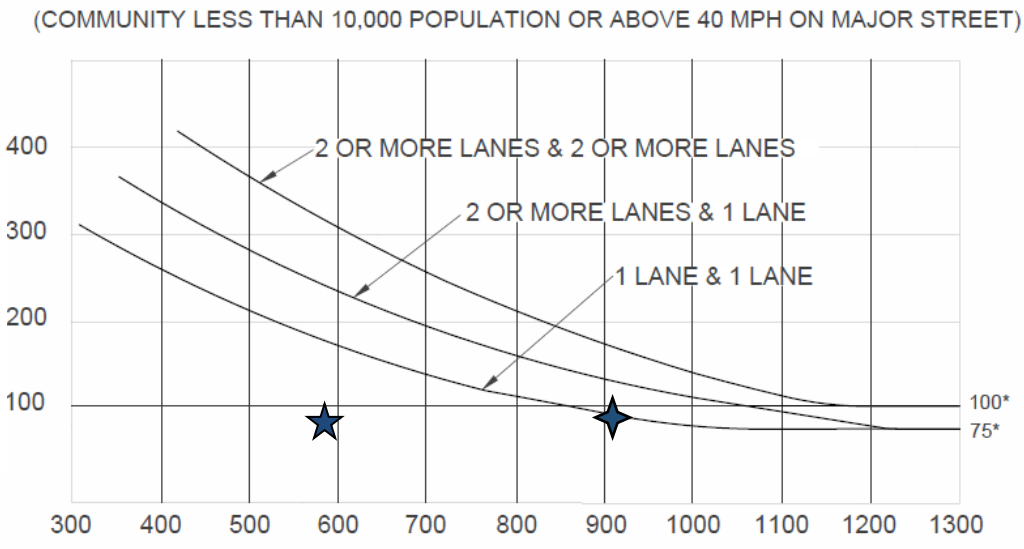
Warrant 3: Peak Hour (Rural)

Near Term No Project Traffic Conditions
1. Reed Avenue / South Avenue
Weekday PM (Weekend PM) Peak Hour



South Avenue Highest Approach Volume = 96 (87) VPH

Reed Avenue Total of Both Approaches = 910 (585) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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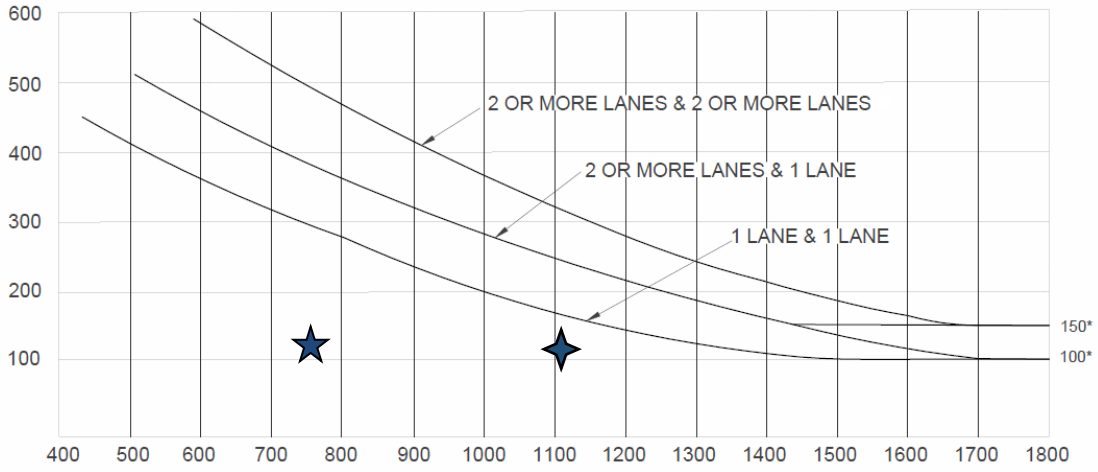
Warrant 3: Peak Hour (Urban)

Near Term No Project Traffic Conditions
2. Reed Avenue / Parlier Avenue
Weekday PM (Weekend PM) Peak Hour

Parlier Avenue Highest Approach Volume = 108 (115) VPH



Reed Avenue Total of Both Approaches = 1109 (769) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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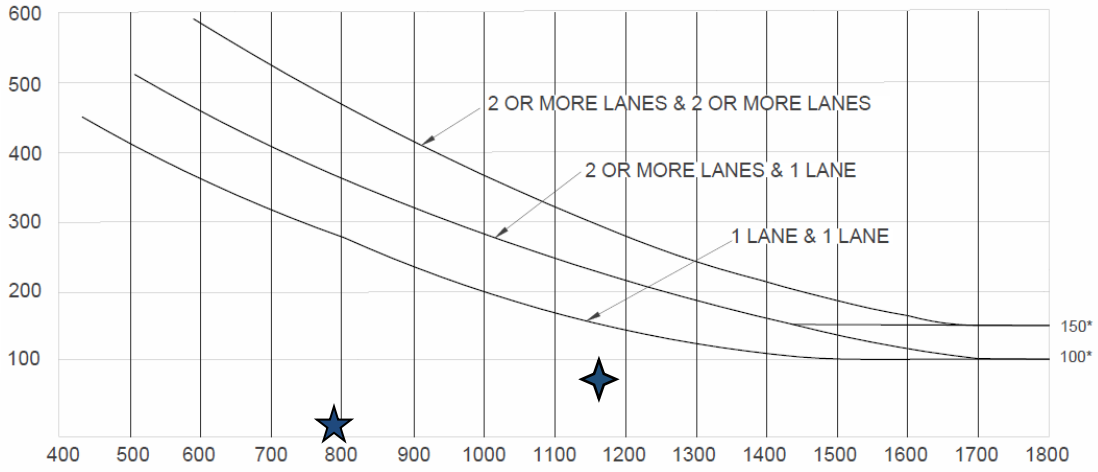
Warrant 3: Peak Hour (Urban)

Near Term No Project Traffic Conditions
3. Reed Avenue / College Driveway
Weekday PM (Weekend PM) Peak Hour

College Driveway Highest Approach Volume = 83 (14) VPH



Reed Avenue Total of Both Approaches = 1159 (793) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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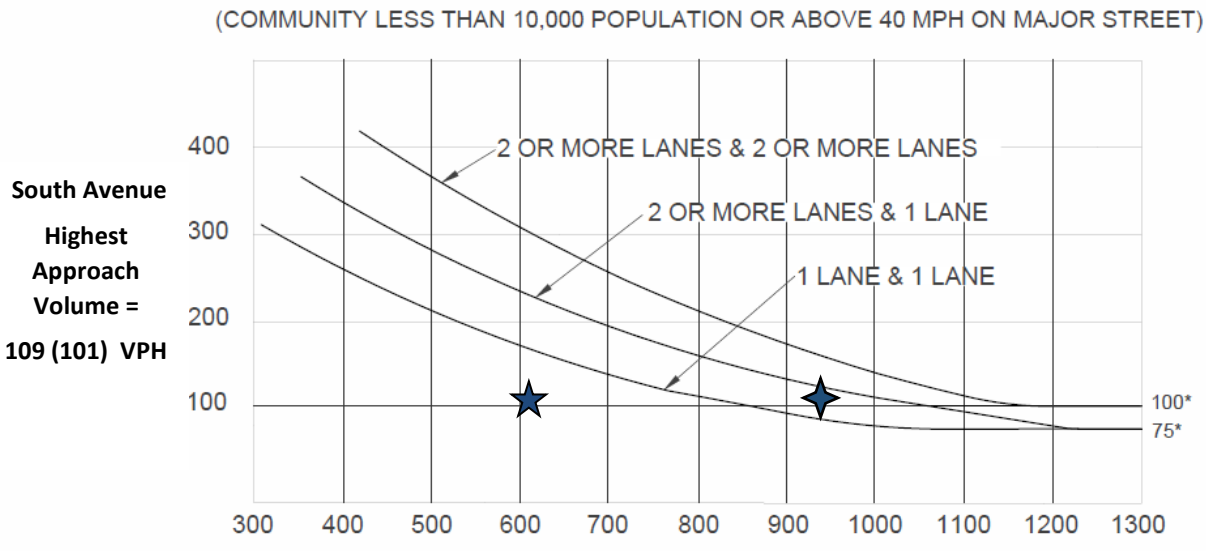
Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
1. Reed Avenue / South Avenue
Weekday PM (Weekend PM) Peak Hour



Reed Avenue Total of Both Approaches =

934 (610) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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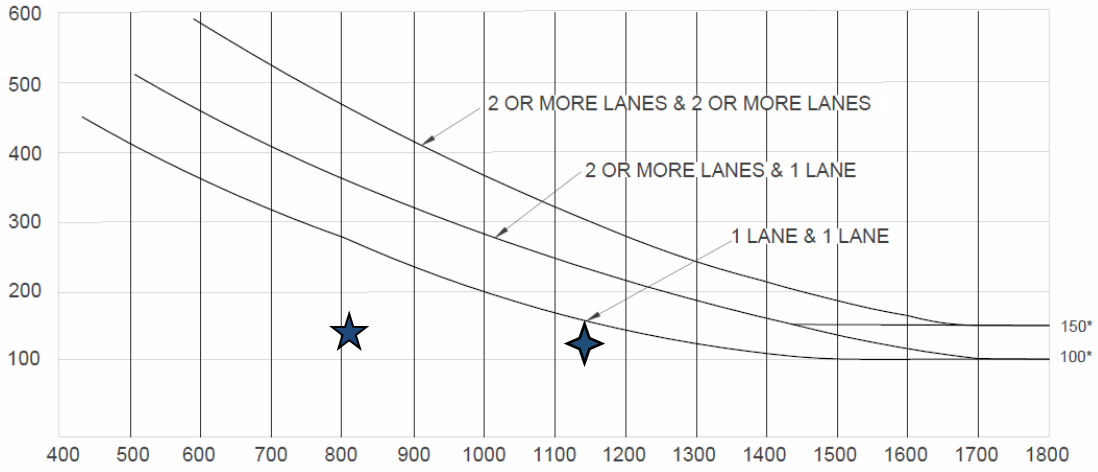
Warrant 3: Peak Hour (Urban)

Near Term plus Project Traffic Conditions
2. Reed Avenue / Parlier Avenue
Weekday PM (Weekend PM) Peak Hour

Parlier Avenue Highest Approach Volume = 127 (136) VPH



Reed Avenue Total of Both Approaches = 1149 (811) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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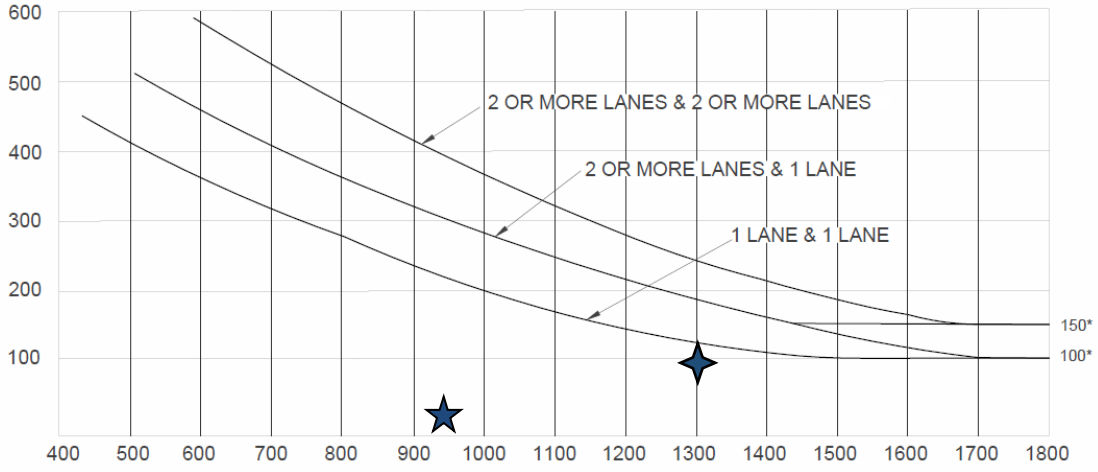
Warrant 3: Peak Hour (Urban)

Near Term plus Project Traffic Conditions
3. Reed Avenue / College Driveway
Weekday PM (Weekend PM) Peak Hour

College Driveway Highest Approach Volume = 95 (27) VPH



Reed Avenue Total of Both Approaches = 1300 (944) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Not Met
Weekend PM Peak Hour – Signal Warrant is Not Met

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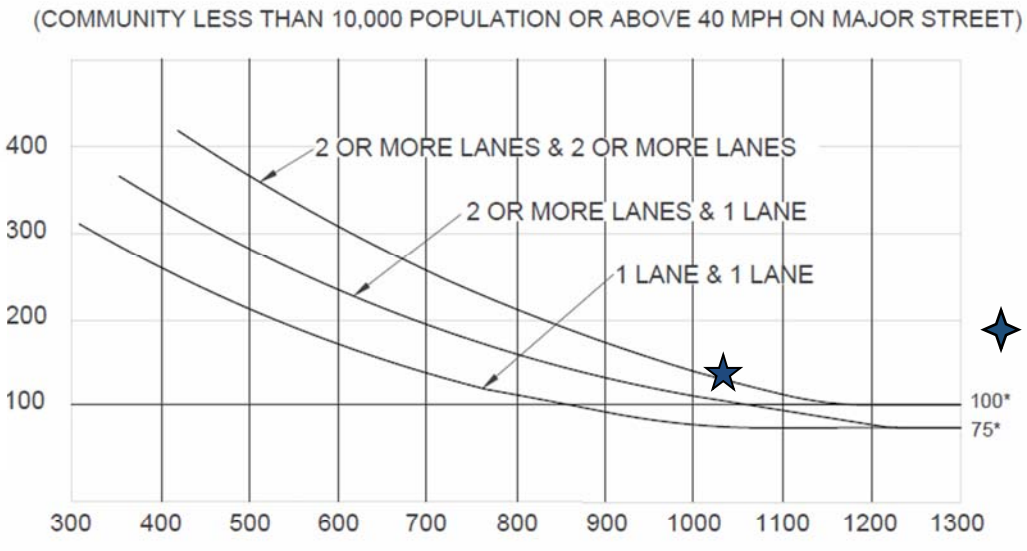
Warrant 3: Peak Hour (Rural)

Cumulative Year 2040 No Project Traffic Conditions
1. Reed Avenue / South Avenue
Weekday PM (Weekend PM) Peak Hour

South Avenue Highest Approach Volume = 191 (131) VPH



Reed Avenue Total of Both Approaches =

1636 (1036) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Met

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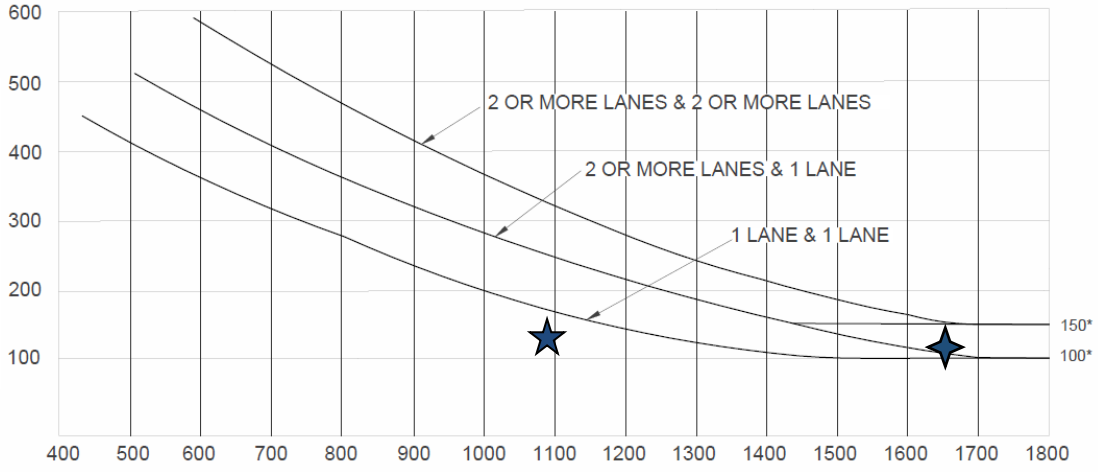
Warrant 3: Peak Hour (Urban)

Cumulative Year 2040 No Project Traffic Conditions

2. Reed Avenue / Parlier Avenue

Weekday PM (Weekend PM) Peak Hour

Parlier Avenue Highest Approach Volume = 117 (121) VPH



Reed Avenue Total of Both Approaches =

1659 (1089) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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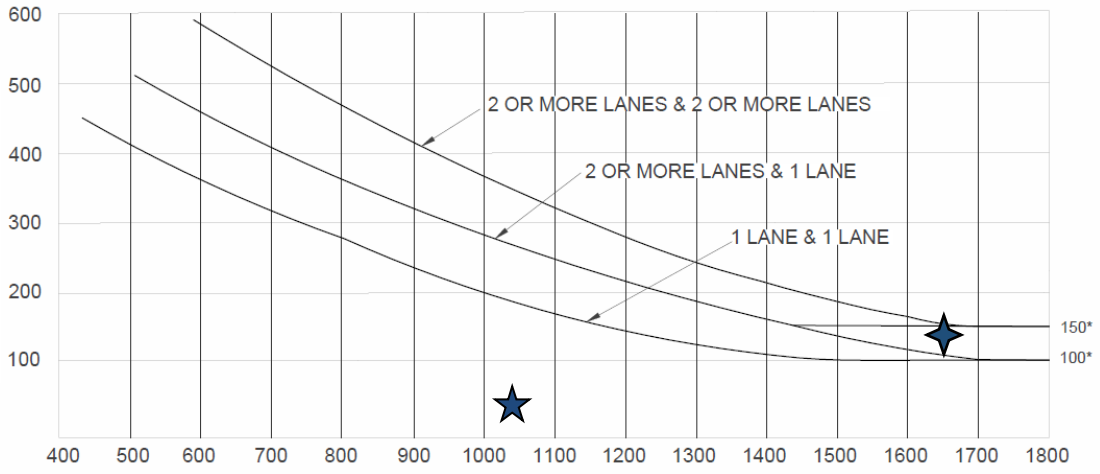
Warrant 3: Peak Hour (Urban)

Cumulative Year 2040 No Project Traffic Conditions
3. Reed Avenue / College Driveway
Weekday PM (Weekend PM) Peak Hour

College Driveway Highest Approach Volume = 132 (42) VPH



Reed Avenue Total of Both Approaches =

1652 (1045) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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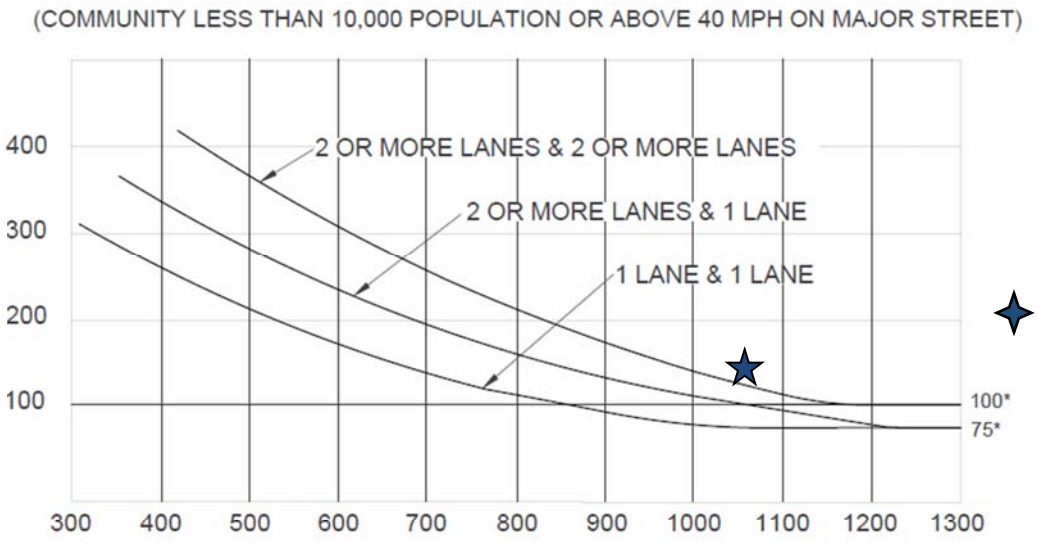
Warrant 3: Peak Hour (Rural)

Cumulative Year 2040 plus Project Traffic Conditions
1. Reed Avenue / South Avenue
Weekday PM (Weekend PM) Peak Hour

South Avenue Highest Approach Volume = 204 (145) VPH



Reed Avenue Total of Both Approaches =

1660 (1061) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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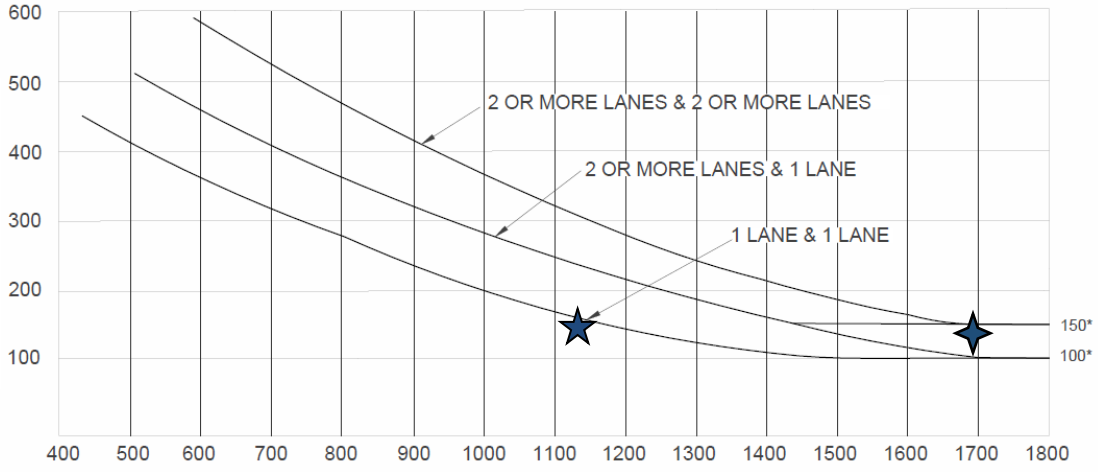
Warrant 3: Peak Hour (Urban)

Cumulative Year 2040 plus Project Traffic Conditions
2. Reed Avenue / Parlier Avenue
Weekday PM (Weekend PM) Peak Hour

Parlier Avenue Highest Approach Volume = 136 (142) VPH



Reed Avenue Total of Both Approaches =

1697 (1129) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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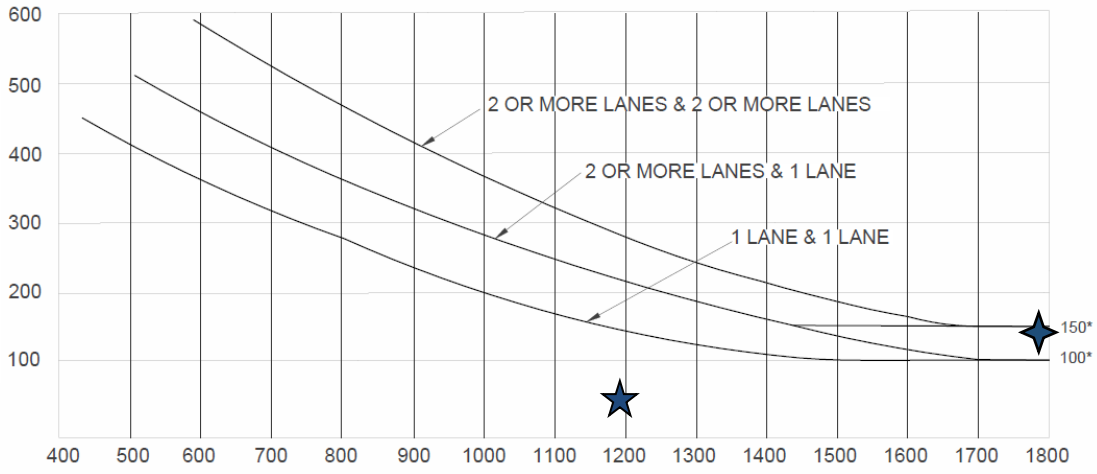
Warrant 3: Peak Hour (Urban)

Cumulative Year 2040 plus Project Traffic Conditions
3. Reed Avenue / College Driveway
Weekday PM (Weekend PM) Peak Hour

College Driveway Highest Approach Volume = 142 (53) VPH



Reed Avenue Total of Both Approaches =

1788 (1191) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Weekday PM Peak Hour – Signal Warrant is Met

Weekend PM Peak Hour – Signal Warrant is Not Met

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