Petaluma Station Transportation Impact Study

Final

Prepared for:
Hines

November 2020

SF20-1085

FEHR PEERS

Table of Contents

Appendices

List of Figures

List of Tables

Executive Summary

This report presents the analysis and findings of the Transportation Impact Study (TIS) prepared for the proposed Hines Downtown Station project ("the project"), a mixed-use development in the City of Petaluma.

Project Description and Analysis Approach

The project site is located at 315 East D Street in Petaluma, which is bordered by Copeland, East D, and East Washington streets and adjacent to the Petaluma Downtown Station for Sonoma-Marin Area Rail Transit (SMART). The proposed project comprises two buildings that will contain a total of 402 residential units, approximately 5,130 square feet of retail space, and 622 spaces of parking supply. Direct access to the project would be provided via East Washington Street, Copeland Street, and East D Street, with garage access provided on Copeland Street.

Potential project impacts under CEQA were evaluated based on a vehicle-miles traveled of travel metric, as well as the potential for the project to conflict with plans and policies related to the operation of the overall transportation system, including transit, bicycle and pedestrian facilities. Potential impacts related to hazards, emergency access and construction are also assessed. The study also includes recommendations related to the project site plan and access and circulation, and a discussion of potential intersection improvement measures to improve traffic operations in the study area.

VMT Findings and Other CEQA Topics

Results of the VMT analysis indicate the project would result in a *less than significant* impact on VMT, which reflects the central location of the project and its proximity to transit services (e.g., SMART, Copeland Street Transit Mall) and downtown Petaluma.

The study also identified a *significant impact* related to hazards for motorists exiting the proposed garages, since motorist sight distance would be periodically obstructed when a bus is present in the bus stops adjacent to the garage access points. Implementation of Mitigation Measure 1, which provides recommendations to improve sight distance for motorists exiting the garage, would reduce the project's significant impact related to hazards to a *less than significant* level.

The project's temporary construction impacts were identified as *potentially significant*, which would be reduced to a *less-than-significant* level with implementation of Mitigation Measure 2 – Construction Management Plan.

It was determined that the project would result in a *less than significant* impact on emergency access, transit operations and facilities, and pedestrian or bicycle facilities.

Access and Circulation Recommendations

Based on a detailed site plan review, the study also proposes several recommendations to enhance access and circulation to the site for all modes, such as:

- Coordinate with the City and local and regional transit operators to reassess bus stop positions on Copeland Street to improve sight distance for motorists exiting the proposed garages
- Coordinate with the City to implement traffic calming strategies on Copeland Street
- Improve pedestrian crossings directly adjacent to the project site to ensure they meet accessibility and safety standards
- Install high-visibility ladder crosswalks and rectangular rapid flashing beacons (RRFBs) at the proposed mid-block crossings on Copeland Street and consider raised crosswalks or intersection at this location with input from transit operators
- Coordinate with the City and adjacent developments to install pedestrian/bicycle wayfinding signage for suggested paths of travel to/from the SMART station

Proposed Traffic Operations Improvement Measures

The informational (non-CEQA) traffic operations analysis identified an unacceptable increase in vehicle delay as a result of the project, based on the City of Petaluma *2025 General Plan*, at the following study intersections:

- Lakeville Street/East Washington Street
- Lakeville Street/East D Street
- Lakeville Street/Caulfield Lane
- Copeland Street/East Washington Street
- Copeland Street/East D Street

To address these adverse effects, it is recommended that the project applicant coordinate with the City to determine its contribution to the City's Development Traffic Impact Fee program to fund the signalization of Copeland Street/East D Street and routine signal maintenance activities.

1. Introduction

This report presents the analysis and findings of the Transportation Impact Study (TIS) prepared for the proposed Hines Downtown Station project ("the project"), a mixed-use development in the City of Petaluma. This chapter presents the project description and study locations.

Project Description

The project is a mixed-use development located at 315 East D Street in Petaluma, which is bordered by Copeland, East D, and East Washington streets. It is also adjacent to the Petaluma Downtown Sonoma-Marin Area Rail Transit (SMART) station and the Copeland Street Transit Center. The project comprises two buildings containing a total of 402 residential units (including 11 affordable units) and approximately 5,130 square feet of retail space. The project also proposes 622 spaces of parking supply, to be located in two garage structures - one within each building. Direct access to the project site would be provided via East Washington Street, Copeland Street, and East D Street, with garage access provided on Copeland Street. The project's total parking supply would exceed the minimum parking requirement of 407 spaces for the project as described in the SmartCode,[1] the City of Petaluma's form-based regulatory code, and would result in a parking surplus of 215 parking spaces compared to the minimum parking requirement. The project site plan is shown on **Figure 1**, and the project site location is shown on **Figure 2**.

The project also includes a new Transverse Street and linear park that would bisect the project site, between the two project buildings, and connect the SMART station and the Copeland Street Transit Center for people walking and biking; vehicular access on this street would be prohibited for the segment through the project site. This street would connect with the Transverse Street proposed as part of the Haystack project, just west of the project site, which would create a longer street connecting the SMART station and the riverfront.

The project also proposes sidewalks up to 15 feet in width along East Washington and East D Streets, with certain pinch points narrowing the sidewalks to approximately 12.5 feet and 13.5 feet on East Washington and East D Street, respectively. Along Copeland Street, which includes the Copeland Street Transit Center, the project proposes a sidewalk width of 17 feet. Additional amenities proposed by the project for people walking and biking include a westbound (single direction) Class IV separated bicycle facility along the project's East D Street frontage, which would connect to the Class IV facilities proposed by the Haystack

[1] Petaluma SMART Rail Station Areas: TOD Master Plan, Appendix A: SmartCode Amendments https://cityofpetaluma.org/documents/smartcode/

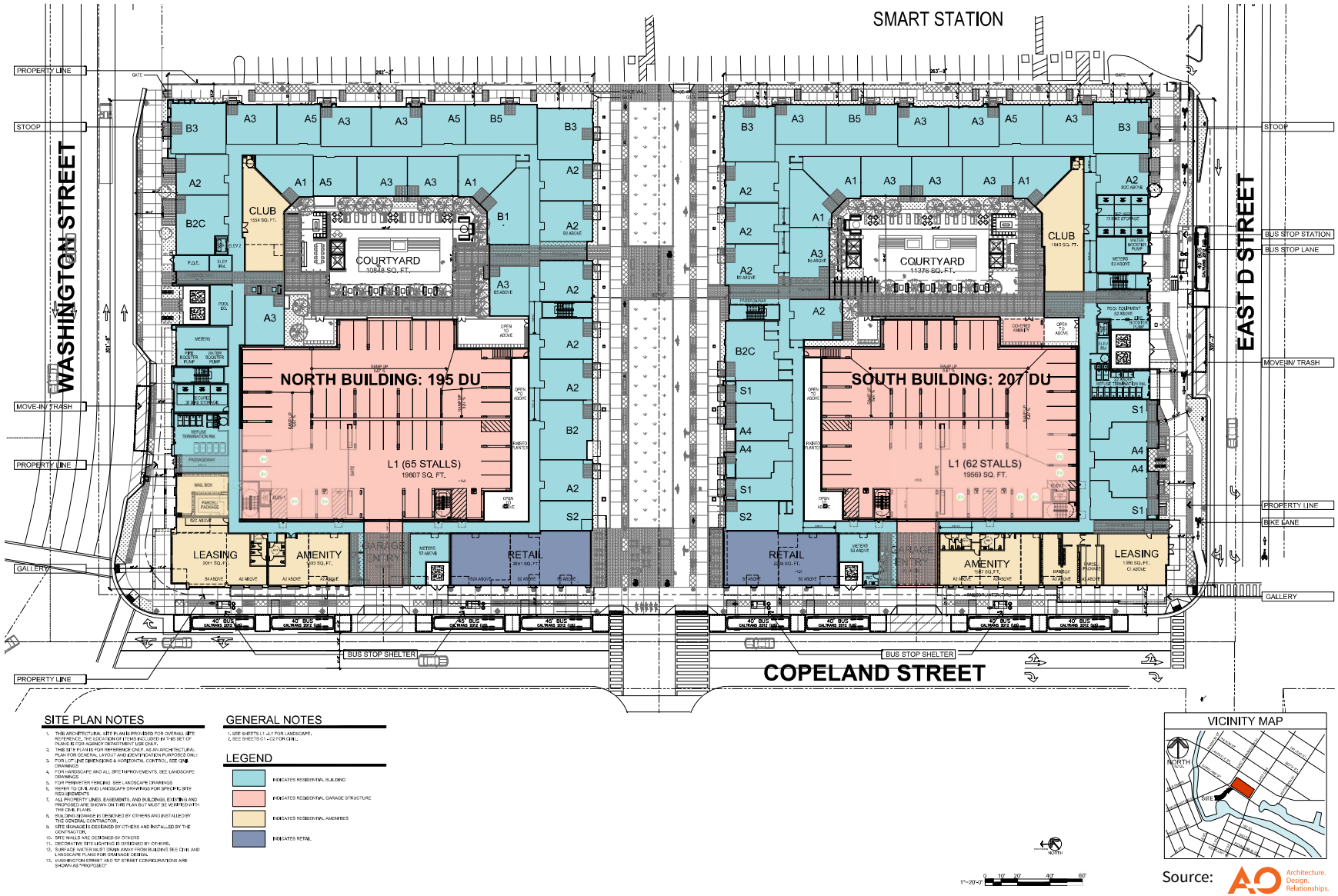


Figure 1

Site Plan

SH20-1085_1_SitePlan.ai

project and an eastbound Class II bicycle lane on the opposite side of the street, as well as both short- and long-term bicycle parking at the project site.

Study Parameters

The project effects on the local transportation system are primarily evaluated through a vehicle-miles traveled (VMT) analysis (see **Chapters 3-5** for more details). This study also measures, for informational purposes only, the effect project traffic would have on intersections in the vicinity of the site during weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods. The study intersections presented in **Figure 2** and **Table 1** were determined based on an initial assessment of project trip generation and distribution and with input from City of Petaluma staff.

Since the street network in Petaluma does not consistently align with cardinal directions (e.g. North, South, etc.) **Table 1** defines the cardinal orientations for the study intersections.

Table 1: Study Intersections and Cardinal Orientation

Intersection	North/South Street	East/West Street
1	Lakeville Street	East Washington Street
2	Lakeville Street	East D Street
3	Caulfield Lane	Lakeville Street
4	US-101 Northbound Ramps	East Washington Street
5	US-101 Southbound Ramps	East Washington Street
6	Ellis Street	East Washington Street
7	Payran Street	East Washington Street
8	Copeland Street	East Washington Street
9	Petaluma Boulevard South	East Washington Street
10	Copeland Street	East D Street
11	Petaluma Boulevard South	East D Street
12	First Street	East D Street

Source: Fehr & Peers, 2020.

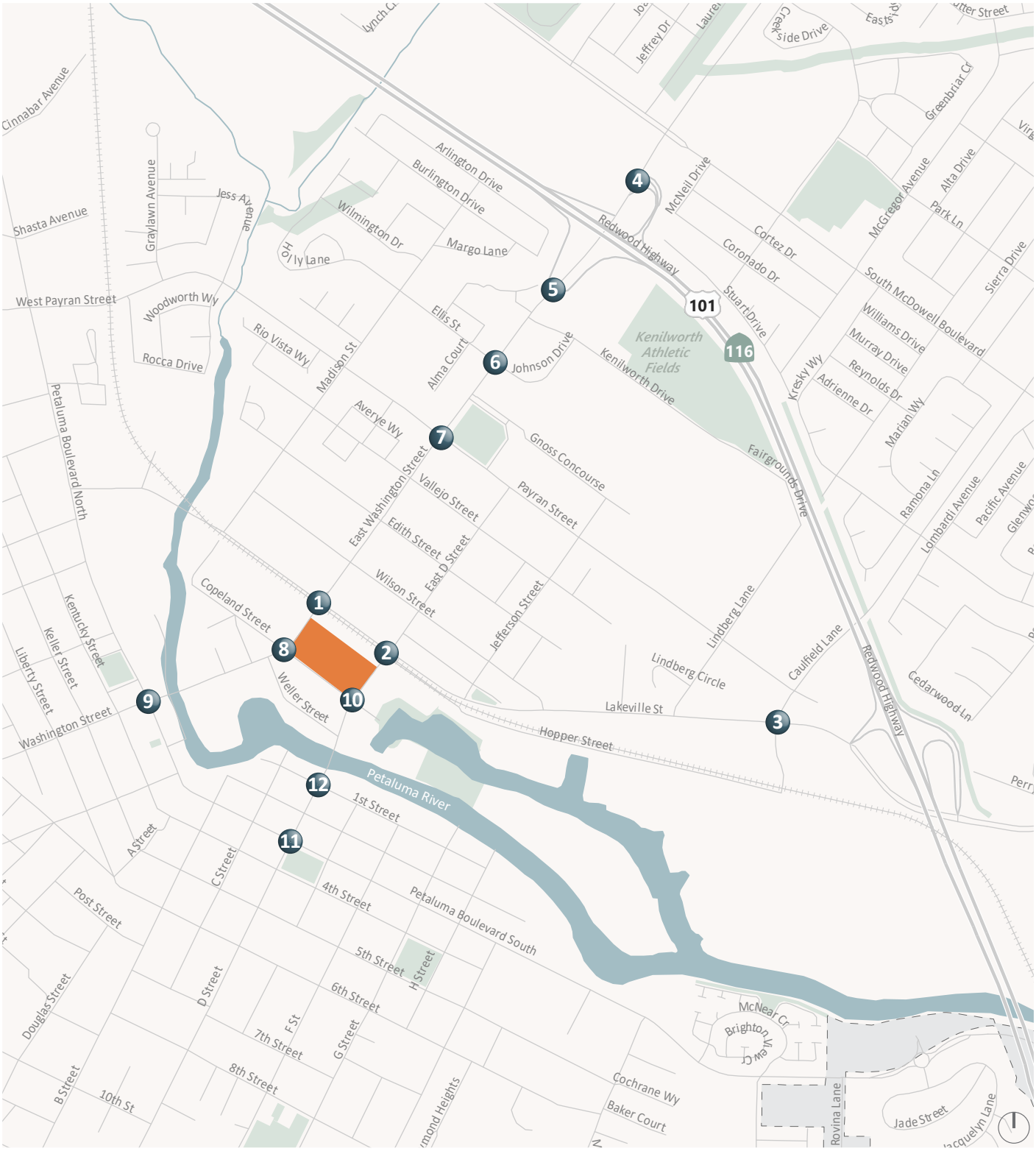


Figure 2

Project Site Location and Study Intersections

SF20-1085_2_StudyArea

Report Organization

This report is divided into seven chapters as described below:

Chapter 1 – Introduction discusses the purpose and organization of the report.

Chapter 2 – Existing Conditions describes the transportation system in the project vicinity, including the surrounding roadway network; existing bicycle, pedestrian, and transit facilities; and morning and evening peak period intersection turning movement volumes.

Chapter 3 –Regulatory Setting and Significance Criteria presents state and local policies and plans relevant to the project.

Chapter 4 – Analysis Approach describes the analysis methodology and presents relevant project information, such as project trip generation, distribution, and assignment.

Chapter 5 – Vehicle-Miles Traveled Assessment presents the VMT associated with the project.

Chapter 6 – Site Plan & Multimodal Access Review describes project access and circulation for all travel modes.

Chapter 7 – Traffic Operations Analysis addresses the existing, near-term (pipeline) projects and long-term vehicle travel conditions in the vicinity of the project site. Recommendations to improve traffic operations are provided.

2. Existing Conditions

This chapter describes transportation facilities in the project study area, including the surrounding roadway network, pedestrian and bicycle facilities, and transit service. Existing intersection volumes are also presented. Existing Conditions intersection Level of Service (LOS) are presented in **Chapter 7**.

Roadway System

Petaluma is located in southern Sonoma County, with the jurisdictions of Santa Rosa, Rohnert Park and Cotati located to the north, Novato and San Rafael to the south, western Marin County to the west, and Sonoma and Napa Valleys to the east. Regional access to the site is provided by U.S. Highway 101 (US-101), and California State Route 116 (SR 116, also known as Lakeville Highway in Petaluma). Local access to the site is provided by East Washington Street, East D Street, Lakeville Street and Copeland Street. The following section discusses the roadways that would provide access to the site and which are most likely to experience project-generated changes in traffic patterns.

Regional Roadways

U.S. Highway 101 (US-101) is a major north-south freeway serving the west coast between Los Angeles, California and northern Washington, near Tacoma. In the San Francisco Bay Area, US-101 extends northward from San Francisco and the Golden Gate Bridge as a four-to-eight lane divided freeway through Marin County, reducing to four lanes with alternating freeway and expressway segments through northern Marin County and into Sonoma County before continuing to the North Coast counties of Mendocino, Humboldt, and Del Norte. Near the project site in Petaluma, US-101 is a four-lane freeway. Primary access to the project site from US-101 is provided via interchanges at East Washington Street and Lakeville Street. US-101 is currently being widened to provide high-occupancy vehicle (HOV) lanes in both directions as part of the California Department of Transportation (Caltrans) Marin-Sonoma Narrows HOV Widening (MSN) Project. HOV lanes on US-101 have been completed north of Petaluma to Windsor, between SR 116 and the Marin-Sonoma county line, and from Sausalito to Novato; the MSN project will close the gap in HOV lanes between Novato and north of Petaluma.

State Route 116 (SR 116) is an east-west highway that orients northwest-southeast through Petaluma, and east-west near the project site. The route runs from State Route 1 (SR 1) on the coast near Jenner to State Route 121 (SR 121) south of Sonoma, connecting with US-101 at Lakeville Street, to the east of the project site, and running concurrently with US-101 throughout most of central and northern Petaluma. To the east of US-101, SR 116 is a surface street named Lakeville Highway and is a four-lane road with additional

storage lanes for turning movements. To the west of US-101, Lakeville Highway continues as a City-maintained (i.e. non-Caltrans) roadway named Lakeville Street.

Local Roadways

Since street network in Petaluma does not consistently align with cardinal directions (e.g. North, South, etc.), East Washington Street and East D Street are defined and described with an east/west orientation in the immediate project vicinity for simplicity, and intersecting streets within the study area are generally defined and described as north/south. See **Table 1** for the full list of study intersections and their defined orientations.

East Washington Street is a major east-west arterial street serving downtown Petaluma, which provides connections across US-101, the Petaluma River, and the SMART rail line. The facility forms the north border of the project site. The centralized location of the roadway, its regional function carrying traffic west to Bodega Bay and southwestern portions of Sonoma County, and its function as a major transit route (all Petaluma Transit routes travel on East Washington Street for portions of their routes) make it the street on which there are the most competing demands in Petaluma. East Washington Street carries approximately 24,000 vehicles per day[2], with the highest concentration of traffic volumes near the US-101 interchange during the PM peak hour. Petaluma Transit Route 11, Golden Gate Transit Route 101/101X, and Sonoma County Transit Route 44 have stops along East Washington Street near the project site. The roadway is proposed to be classified as a Class III bike route as part of the 2008 Bicycle and Pedestrian Plan. The corridor includes sidewalks along the length of the corridor, which are relatively narrow and approximately five feet wide adjacent to the project site. The speed limit on East Washington Street is 30 mph east of Lakeville Street and 25 mph west of Lakeville Street.

Lakeville Street borders the east side of the site and the Downtown Petaluma SMART station. It provides connections to US-101, SR 116/Lakeville Highway, East Washington Street and East D Street. Lakeville Street a two- to four-lane roadway which orients north-south adjacent to the project site and transitions to an east-west orientation east of Jefferson Street. Petaluma Transit Route 24 and Sonoma County Route 40 have stops along Lakeville Street near the project site. Class II bike lanes are provided on either side of the roadway, and a continuous sidewalk is provided on the east side of the roadway near the project site. Adjacent to the project site, the west side of the roadway is bordered by the SMART rail line and sidewalks are generally not provided on this side of the roadway. The posted speed limit is 30 mph.

East D Street is a two-lane arterial street that extends in an east-west direction and connects rural west Marin County (via Point Reyes-Petaluma Road) through downtown Petaluma to Payran Street. East D Street borders the south side of the project site. Along with East Washington Street and Lakeville Street, D

[2] Based on 2019 counts conducted by the City

Street provides one of the few roadway crossings of the Petaluma River; this connection is made over a City-operated drawbridge in downtown Petaluma. In addition to the Downtown Petaluma SMART station, stops for Petaluma Transit Route 10 are provided on East D Street. East D Street is a Class III bike route and includes sidewalks along the length of the corridor, which are relatively narrow and approximately five feet wide adjacent to the project site. The posted speed limit is 25 mph within the study area.

Petaluma Boulevard is an arterial street extending in the north-south direction, parallel to the Petaluma River and US-101 through the entire length of the City. Petaluma Boulevard was approved as Business Route US-101 between the two Petaluma Boulevard/US-101 interchanges by the American Association of State Highway and Transportation Officials (AASHTO) in 1997; business route signage is sporadic (if posted at all). Petaluma Boulevard is located to the west of the project site. Petaluma Boulevard is the principal north-south arterial street serving central Petaluma. South of D Street, Petaluma Boulevard is a four-lane roadway. North of D Street, Petaluma Boulevard is a two-lane roadway with a two-way left turn median. The City of Petaluma is scheduled to implement a road diet on Petaluma Boulevard from D Street east to Crystal Lane Roundabout in 2021, which would reduce the cross-section to two travel lanes with a center turn lane. Petaluma Transit Route 10, Golden Gate Transit Route 101/101X and 74, as well as Sonoma County Transit Route 48 have bus stops along Petaluma Boulevard near the project site. The roadway is a Class III shared bike route in the study area and features continuous sidewalks along most of its length. The posted speed limit varies between 25 and 30 mph within the study area.

Payran Street begins at Caulfield Lane near the US-101/Lakeville Street interchange and continues to Petaluma Boulevard where the roadway continues west as Magnolia Avenue. It is located to the east of the project site and is defined as north-south in this study. Near the project site, Payran Street is a two-way four-lane street, which provides access to residential neighborhoods north of the site and the Petaluma Fairgrounds. Contiguous sidewalks and on-street parking are present through the study area. The street is a Class III bike route and the speed limit is 25 mph within the study area.

Caulfield Lane is a two-way, four-lane roadway that runs north-south from the Petaluma Municipal Airport past Ely Boulevard to Hopper Street. It is located to the east of the project site. The City has long-term plans to extend Caulfield Lane further south by constructing a bridge over the Petaluma River. There are Class II bike lanes along the roadway from Hopper Street to Garfield Drive and continuous sidewalks. It is a truck route and the posted speed limit varies between 35 and 40 mph.

Copeland Street is a two-way, two-lane street that runs north-south and is two blocks in length. It currently serves industrial sites and borders the west side of the project site. The Copeland Street Transit Mall is located on the street and provides transit connections between the SMART train, and Petaluma Transit, Golden Gate Transit and Sonoma County Transit bus services. The roadway has sidewalks on both

sides of the street on the block where the Transit Mall is located but does not provide on-street parking or bike facilities.

Ellis Street / Johnson Street is a two-way, two-lane street that runs north-south to the east of the project site. On the west side of East Washington Street, it is called Ellis Street and provides access to residential neighborhoods. On the south side it is called Johnson Street and provides access to the Petaluma Fairgrounds and East Washington Place shopping mall. Parallel and angled parking is provided along Ellis Street and there are Class II bike lanes along Johnson Street.

Existing Pedestrian and Bicycle Facilities

The existing pedestrian and bicycle facilities near the project site are described below.

Pedestrian Facilities

Pedestrian facilities in the study area include sidewalks, crosswalks, and ADA curb ramps. Sidewalks along the perimeter of the project site vary in width, but generally measure at least 5 feet wide, meeting the City's minimum standard. There is one midblock, unsignalized ladder crosswalk on Copeland Street, which provides access to the Copeland Street Transit Mall.

Petaluma has many areas that are especially conducive to walking for enjoyment and as a form of transportation, particularly within the Downtown area and west side neighborhoods that include a grid of streets with a well-developed sidewalk network. The City has established policies to encourage the improvement of the pedestrian network. The most recent American Community Survey Data (2013-2018) indicates that 2.5 percent of Petaluma residents walk to and from work. In addition, 3.2 percent of Petaluma residents commute to and from work using public transit.[3] Since transit trips include a walking trip of some form, the number of residents that walk for a portion of their commute is considerable. The following details the presence of pedestrian crossing facilities at intersections immediately adjacent to the project site.

Lakeville Street / East D Street has ladder crosswalks across East D Street and a traditional crosswalk (two white stripes) across Lakeville Street on the north leg of the intersection. Pedestrians are discouraged from crossing on the south leg of the intersection across the rail tracks via "no sidewalk" signage and the lack of a marked crosswalk. The intersection also provides pedestrian push-buttons to actuate the pedestrian crossing signal phase, and a pedestrian refuge island between the SMART right-of-way and vehicle traffic on Lakeville Street. ADA accessible curb ramps are provided at most crossings, although the curb ramp at the northeast corner of the Lakeville Street crossing does not have a detectable warning surface (e.g.,

[3] U.S, Census Bureau. (2018). Journey to Work. American Community Survey 5-year estimates (2013-2018). Retrieved from censusreporter.org on August 6, 2020.

tactile domes) and the curb ramp at the southeast corner of the East D Street crossing is positioned diagonally rather than towards the marked crosswalk on the east leg of the intersection.

Lakeville Street / East Washington Street has ladder crosswalks and ADA accessible curb ramps at each intersection leg. There is a pedestrian refuge island in the center of East Washington Street on the west leg of the intersection, as well as between the SMART right-of-way and vehicle traffic on Lakeville Street on the north leg of the intersection. There are also pedestrian push-buttons to actuate the pedestrian signal phase at each crossing.

Copeland Street / East D Street has ladder crosswalks with two rectangular rapid flashing beacons (RRFBs) across East D Street and all four crossings have ADA accessible curb ramps. These facilities facilitate pedestrian access between the Transit Center, East D Street and the adjacent Steamer Landing Park.

Copeland Street / East Washington Street has crosswalks at each intersection leg with pedestrian push-buttons to actuate the pedestrian signal phase and ADA accessible curb ramps. Three of the crossings have ladder crosswalks while north leg of the intersection has a traditional crosswalk.

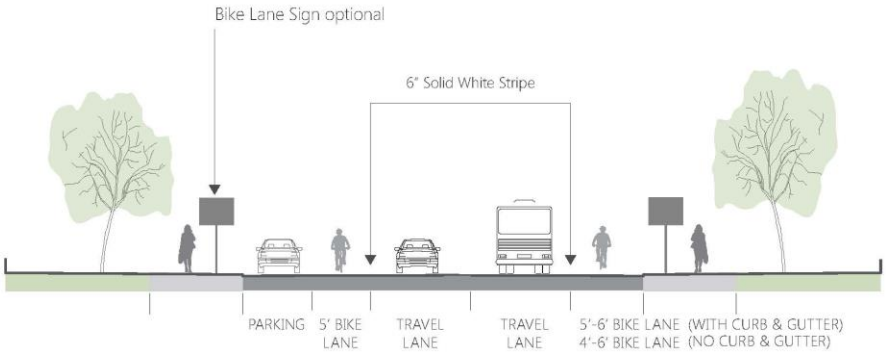
Bicycle Facilities

The Petaluma General Plan and 2008 Bicycle Master Plan call for the development of a comprehensive network of bikeways and bicycle support facilities. Caltrans recognizes four classifications of bicycle facilities:

- *Class I Bikeway (Bicycle Path)* provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

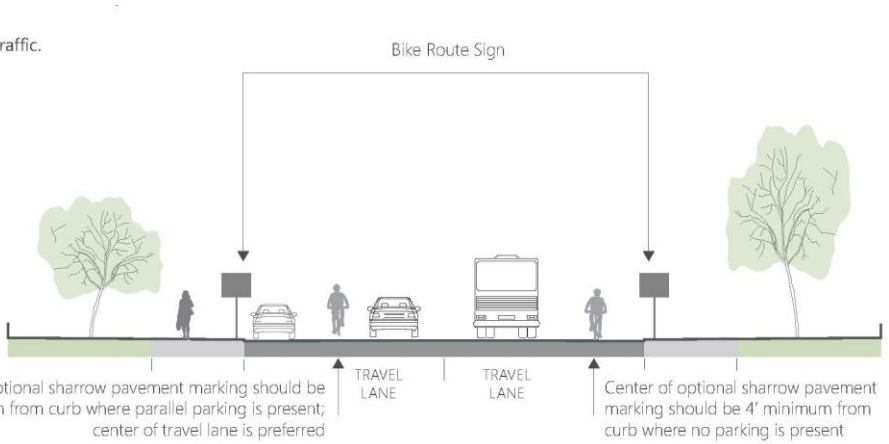
- *Class II Bikeway (Bicycle Lane)* provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally four to six feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.

Provides a striped lane for one-way bike travel on a street or highway.

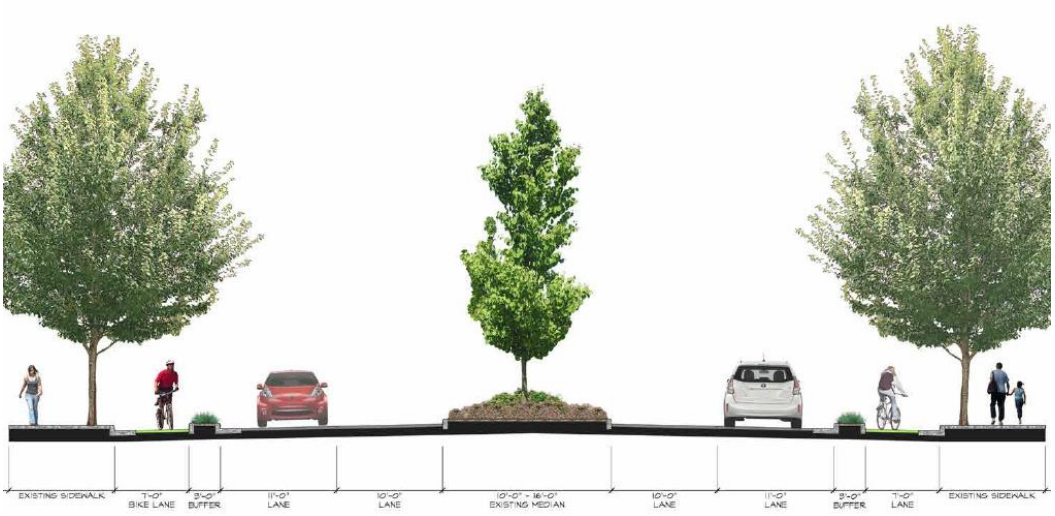


- *Class III Bikeway (Bicycle Route)* provides for a right-of-way designated by signs or pavement markings (sharrows) for shared use with pedestrians or motor vehicles. Sharrows are a type of pavement marking (bike and arrow stencil) placed to guide bicyclists to the best place to ride on the road, avoid car doors, and remind drivers to share the road with cyclists.

With Optional Sharrow Pavement Marking
Provides for shared use with motor vehicle traffic.



- *Class IV Bikeway*, also known as "cycle tracks" or "protected bike lanes," provide a right-of-way designated exclusively for bicycle travel within a roadway and which are protected from other vehicle traffic with devices, including, but not limited to, grade separation, flexible posts, inflexible physical barriers, or parked cars.



Bicycle facilities in the study area are described below and presented in **Figure 3**.

Class I bikeways near the project site include:

- Lynch Creek Trail
- SMART Trail between Payran Street and Southpoint Boulevard

The following roadways in the study area include Class II bike lanes:

- East D Street from the Petaluma city limits to Fourth Street in downtown Petaluma
- Caulfield Lane from Lakeville Street to Ely Boulevard
- Johnson Street
- Lakeville Street from the US-101 interchange to East D Street

The following roadways in the study area are classified as Class III bike routes:

- Lakeville Street from East D Street to Petaluma Boulevard
- East D Street from 4th Street to Payran Street
- Petaluma Boulevard
- East Washington Street
- Payran Street
- Ellis Street

The Downtown Petaluma SMART station provides traditional bicycle parking as well as secure bicycle parking through BikeLink near the project site.

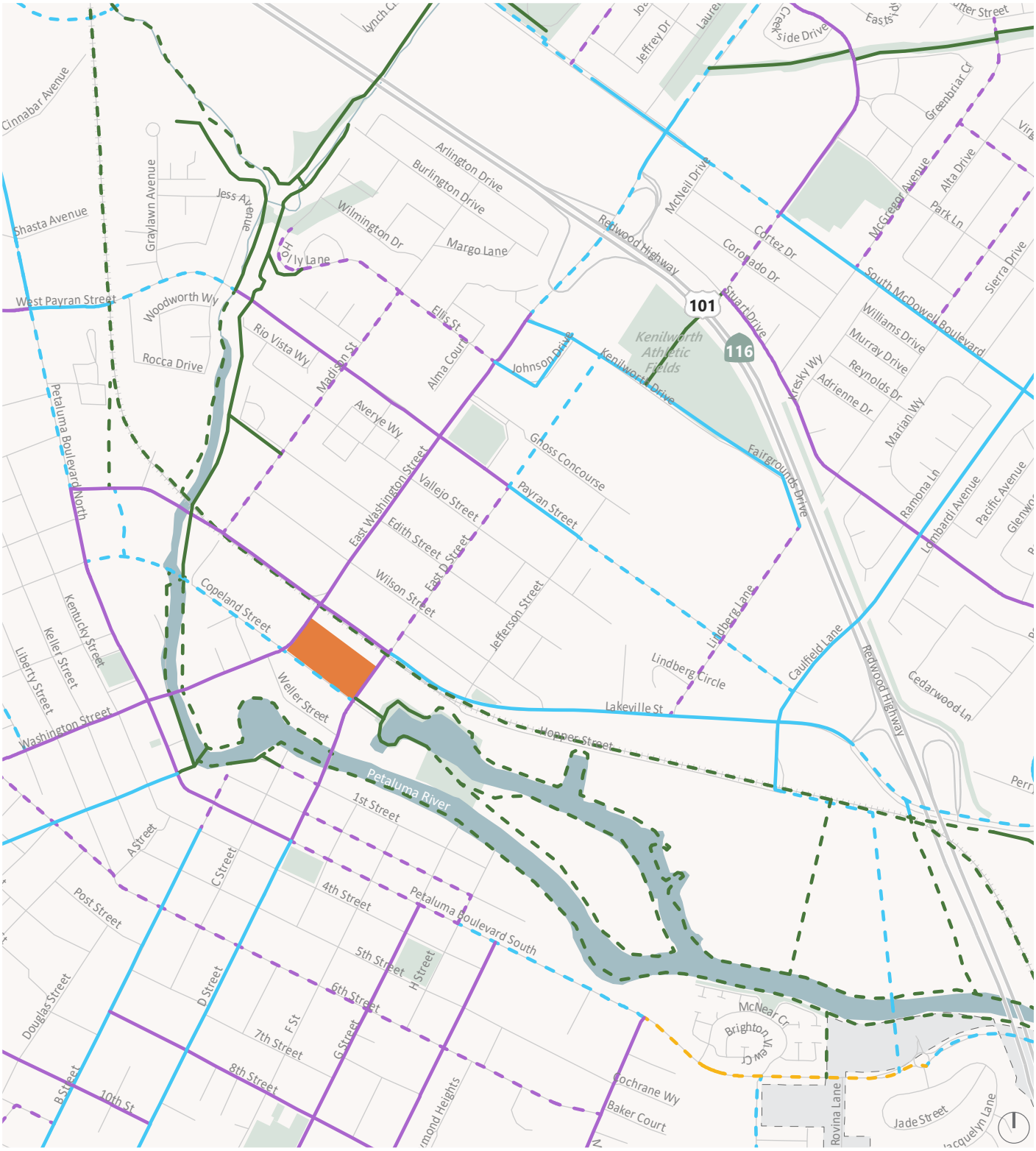


Figure 3

Existing Bicycle Facilities

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Existing Transit Service

Transit service within the study area is provided by Sonoma-Marin Area Rail Transit (SMART), Petaluma Transit, Golden Gate Transit, and Sonoma County Transit. The project site is located adjacent to the Downtown Petaluma SMART station and Copeland Street Transit Mall, which includes bus stops for Petaluma Transit, Golden Gate Transit and Sonoma County Transit as well as the Sonoma County Airport Shuttle Express with services to Oakland and San Francisco airports. Additionally, the project site is located within the Petaluma Paratransit service area. Amtrak Thruway Motorcoach also provides intercity bus service to Petaluma and stops at the Petaluma Regional Library at 100 Fairgrounds Drive. The existing transit network within the study area is presented in **Figure 4**.

Sonoma-Marin Area Rail Transit (SMART) is a passenger train and multi-use pathway project located in Sonoma and Marin counties. SMART shares use of the rail tracks with freight services to provide commuter rail service along 70 miles of railroad alignment; passenger services are provided parallel to the US-101 corridor, while freight services run east from the Ignacio Wye in Novato to access the remainder of the national railroad network. SMART currently serves 12 stations from between the Sonoma County Airport and Larkspur; several additional stations are planned – including infill stations along the route and north of the current terminus to Windsor, Healdsburg and Cloverdale. Petaluma is currently served by the Downtown Petaluma station (adjacent to the project site), and will be served by the future Petaluma North/Corona Station, which would be located on the north side of the City near McDowell Boulevard/Corona Road. SMART also plans to construct a rail-side trail system along the length of the tracks, which has been partially completed, including several segments within Petaluma.

Petaluma Transit is a local, public bus service serving commuter and community routes in Petaluma.

- Route 10 provides service between the Downtown Petaluma SMART station and Petaluma Boulevard North and Gossage Avenue to the northwest. It has stops adjacent to the project site on both East D Street and the Copeland Street and runs primarily on Petaluma Boulevard North. Route 10 operates Monday through Friday with 60-minute headways between 7:30AM and 6:30PM.
- Route 24 provides service between the Downtown Petaluma SMART station to Kaiser Medical Center on the west side of the city. Running primarily along Lakeville Street, it stops the Lakeville Street /East D Street intersection as well as the Copeland Street Transit Mall. Route 24 operates Monday-Friday between 6:15 AM and 7:10 PM with 30-minute headways during peak hours and 60-minute headways the remainder of the day.
- Route 11 East-West Connector provides service originating from Downtown Petaluma along East Washington Street. It stops at Copeland Transit Mall adjacent to the project site. Route 11 operates on 30-minute headways Monday through Sunday, while running longer hours on weekdays.

Golden Gate Transit provides inter-county bus service between neighboring counties. The services are separated into "basic" and "commuter" bus routes. Near the project site, Golden Gate Transit operates the following routes:

- Routes 101 and 101X provide bus service throughout the day and evening between San Francisco and Santa Rosa (via Redwood Highway) with a stop at the Copeland Street Transit Mall. There are also stops along Petaluma Boulevard and East Washington Street. These routes operate at approximately 60-minute headways during weekday peak hours, and also operate weekend service.
- Route 74 provides commute period service between San Francisco and Santa Rosa (via Redwood Highway). It travels along Petaluma Boulevard with stops near the project site at East D Street and the Petaluma Depot at 4th Street/C Street. It only operates during the morning and afternoon commute period on weekdays.

Sonoma County Transit

- Route 40 provides service between Downtown Petaluma and Sonoma. The route travels along Lakeville Street and terminates at the Copeland Street Transit Mall; it also serves a stop on East Washington Street south of Lakeville Street. It operates on weekdays with headways greater than 60 minutes.
- Routes 44 and 48 provide service between Downtown Petaluma and Santa Rosa. Route 44 travels along McDowell Boulevard and East Washington Street, whereas Route 48 travels along Old Redwood Highway and Petaluma Boulevard. Both routes serve the Copeland Street Transit Mall and Route 44 also stops at East Washington Street north of Lakeville Street. These routes operate at approximately 60-minute headways during weekday peak hours, and also operate weekend service.

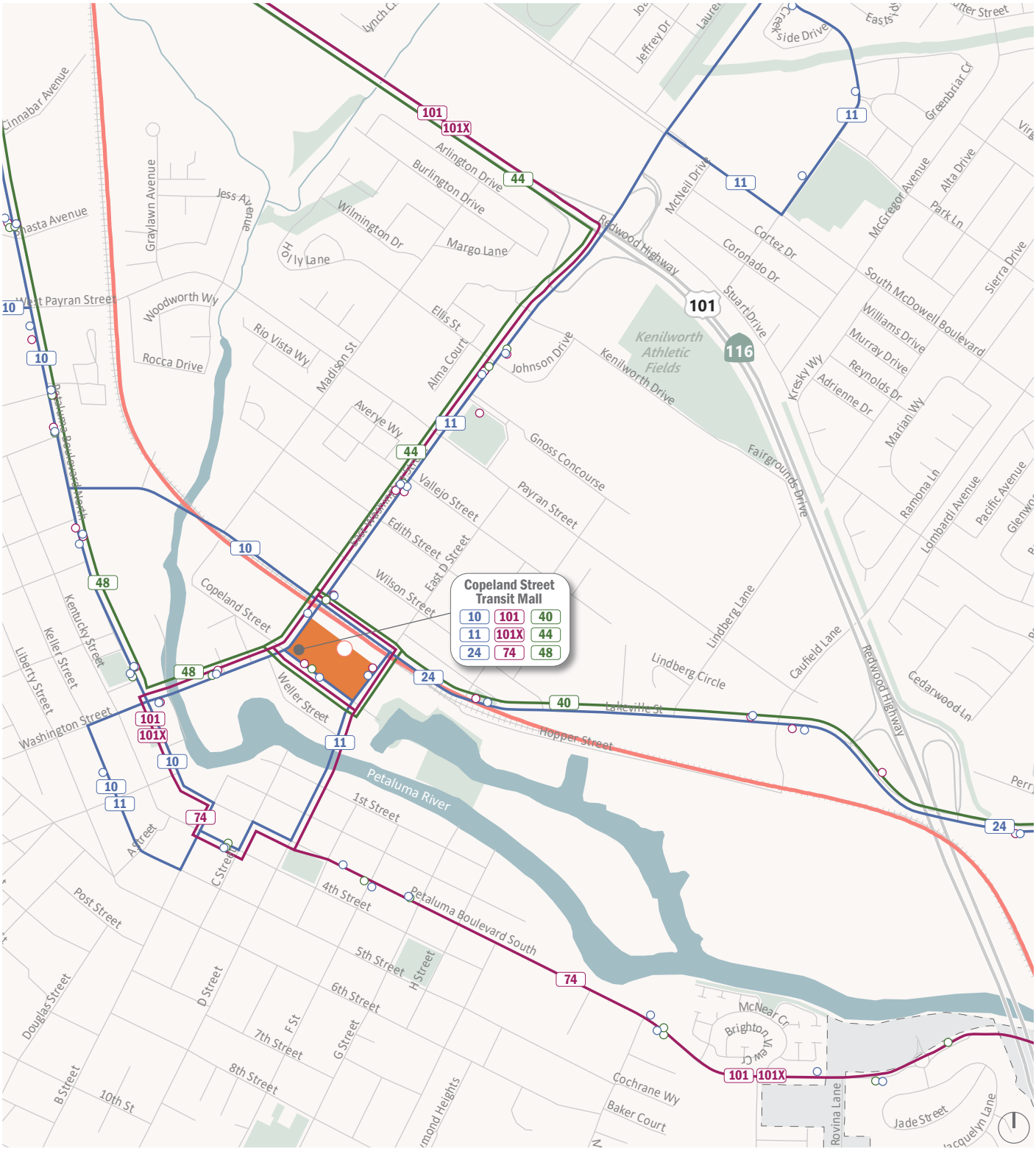


Figure 4

Existing Transit Facilities

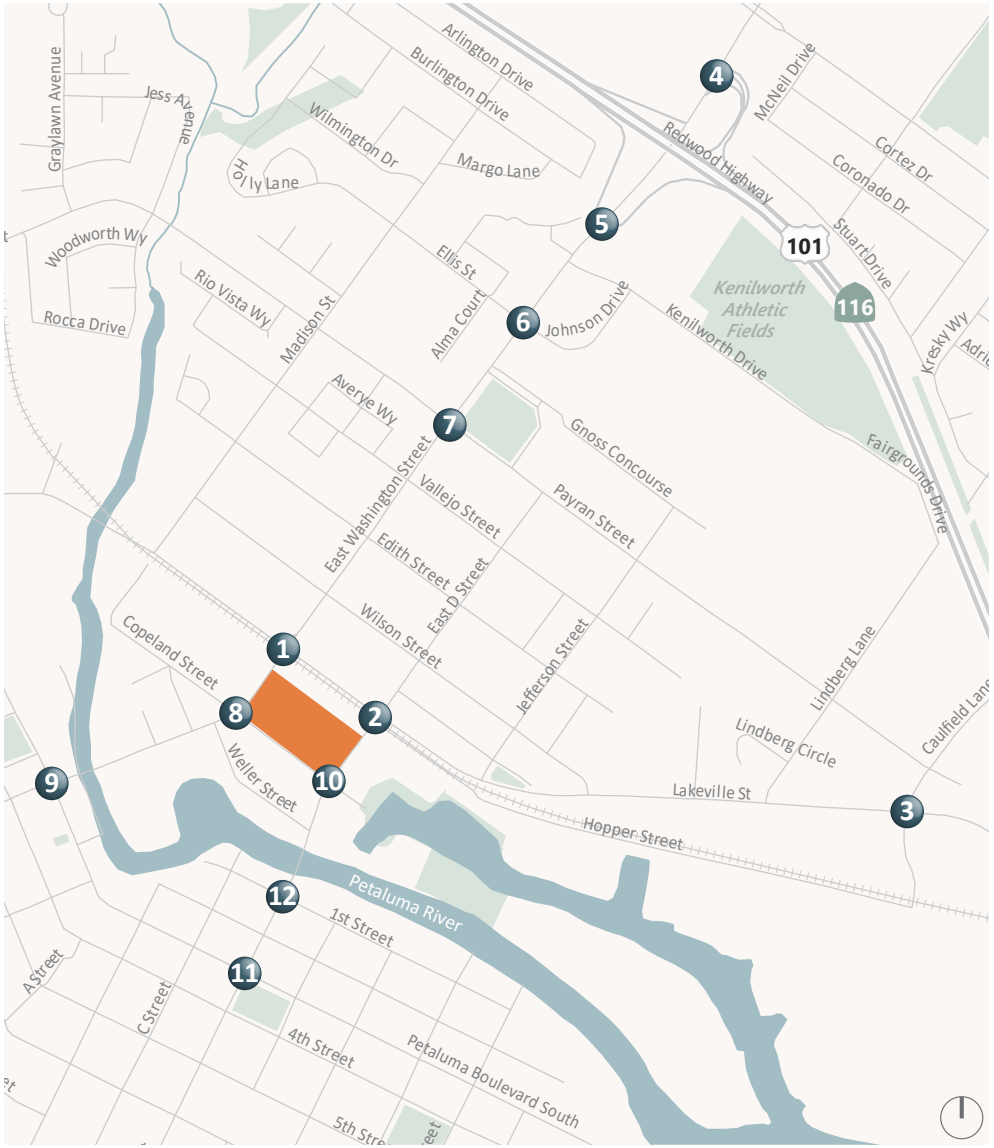
Existing Traffic Counts

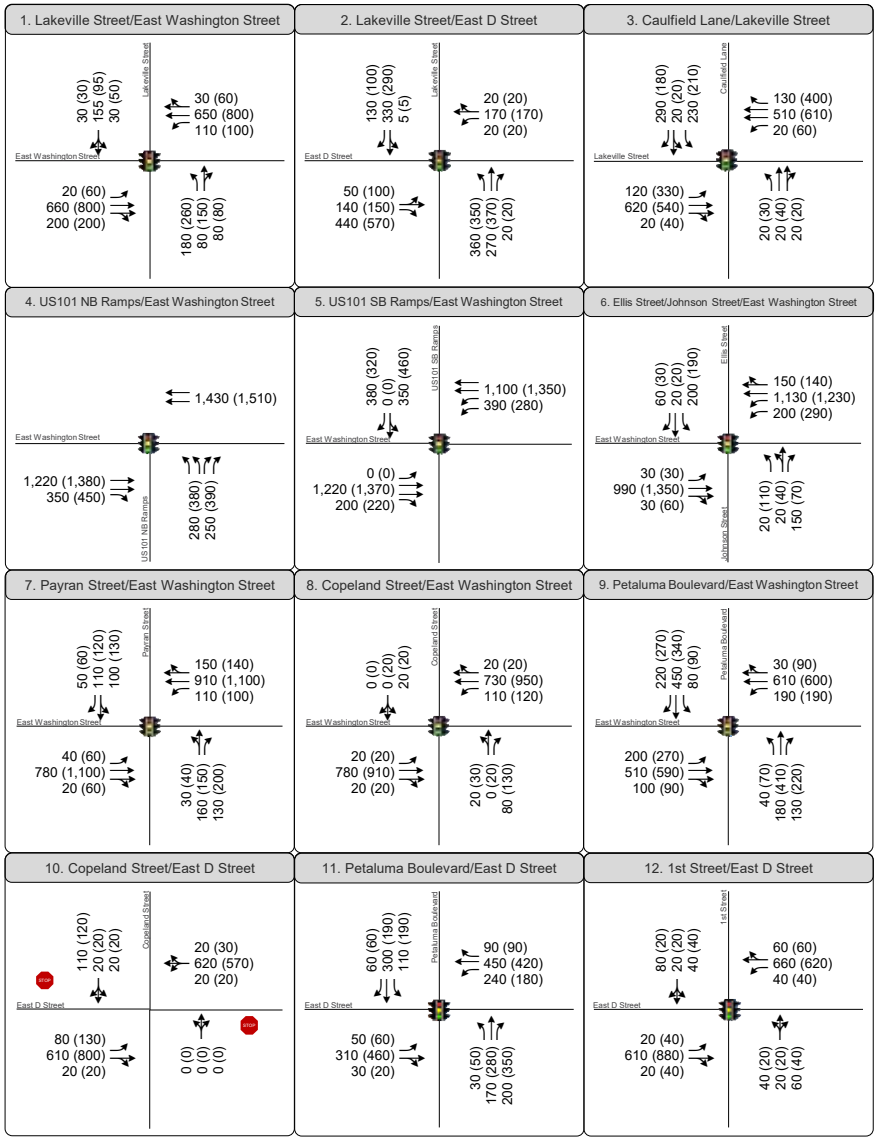
Since traffic patterns and travel behavior has shifted substantially in Petaluma (and throughout California) as a result of the COVID-19 pandemic and associated shelter-in-place orders, this study employed a novel method for estimating baseline traffic volumes using a "Big Data" approach. In early 2020, Fehr & Peers conducted an independent review of StreetLight volume estimates by comparing the volume estimates to historical count data. The review concluded that StreetLight volume estimates are a reasonable and acceptable source of data as a replacement for traditional traffic counts. Streetlight Data volume estimates are more robust than traditional traffic counts since they assess travel patterns across several months, rather than a single day.[4] Streetlight Data volume estimates were downloaded for Tuesdays, Wednesdays, and Thursdays during months which school is in session (i.e., February – May and September – November) and aggregated to averages for use in the informational (non-CEQA) intersection operations analysis.

In order to obtain better calibrated turning movement counts estimates from StreetLight for the study intersections, the City provided citywide average daily traffic (ADT) counts collected in 2019 as part of the City-wide speed survey project to improve the machine learning algorithm used to develop volume information for the study area. Fehr & Peers developed turning movement volume estimates using StreetLight Data, and compared them against previous counts information (where available) to refine estimates to reflect baseline conditions. City staff reviewed and confirmed the baseline estimates for use in this study.

Figure 5 presents the existing peak hour intersection volumes, lane configurations and traffic control for the study intersections.

[4] For more information about the Streetlight data collection approach, including the Fehr & Peers white paper "A Transformative Data Collection Solution", visit: https://www.fehrandpeers.com/transformative-data-collection-solution/





XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 5

Existing Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

3. Regulatory Setting and Significance Criteria

Regulatory Considerations

The City of Petaluma *2025 General Plan* and City of Petaluma Municipal Code provide local policies related to transportation that are applicable to the project. There are currently no Federal transportation plans, policies or regulations that apply to this project. Therefore, the local policies and guidelines associated with circulation and transportation, as defined by the City of Petaluma, were utilized for this analysis, in addition to the thresholds of significance outlined in Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*.

State Plans and Policies

Senate Bill 375

Senate Bill 375 (SB 375) (Stats. 2008, chapter 728) requires Metropolitan Planning Organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction targets through integrated land use, housing and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board. While MPOs have consistently produced SCSs that contain forecasts demonstrating compliance with SB 375 GHG reduction targets, observed data related to VMT and GHG mobile emission trends tell a different story. The *2018 Progress Report California's Sustainable Communities and Climate Protection Act, California Air Resources Board,* November 2018, VMT per capita and GHG per capita rates have been increasing after 2012.[5] According to the report, "California – at the state, regional, and local levels – has not yet gone far enough in making the systemic and structural changes to how we build and invest in communities that are needed to meet state climate goals." Of note, local agencies have not changed land use patterns or housing amounts consistent with SCS expectations. Further, improved economic activity, new vehicle travel options (i.e., Uber and Lyft), internet shopping and delivery, higher visitation, and low fuel prices have contributed to increased vehicle travel that was not fully accounted for in SCS forecasts. The COVID-

[5] 2018 Progress Report: California's Sustainable Communities and Climate Protection Act https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

19 pandemic has stalled these trends, with a reduction of VMT and GHG emissions in 2020.[6] However, the long-term effects on travel of the health, economic, and behavior changes due to the pandemic are uncertain.

Senate Bill 743

Senate Bill 743 (Stats. 2013, ch. 386) (SB 743) creates several statewide CEQA changes. First, it requires the Governor's Office of Planning and Research (OPR) to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allows OPR to extend use of the metrics beyond TPAs. OPR selected vehicle-miles traveled (VMT) as the preferred transportation impact metric and applied their discretion to require its use statewide. Second, this legislation establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment. Third, the new CEQA Guidelines that implement this legislation, state that vehicle LOS and similar measures related to vehicle delay shall not be used as the sole basis for determining the significance of transportation impacts, and that as of July 1, 2020, this requirement shall apply statewide. Finally, it establishes a new CEQA exemption for a residential, mixed-use, or employment center project a) within a transit priority area, b) consistent with a specific or general plan for which an EIR has been certified, and c) consistent with a RTP/SCS. This exemption requires further review if the project or circumstances changes significantly.

To aid in SB 743 implementation, the following non-binding state guidance has been produced.

- *Technical Advisory on Evaluating Transportation Impacts in CEQA,* California Governor's Office of Planning and Research, December 2018[7]
- *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*, California Air Resources Board, January 2019[8]
- *Draft VMT-Focused Transportation Impact Study Guide*, Caltrans, February 28, 2020[9]

The *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals* provides recommendations for VMT reduction thresholds that would be necessary to achieve the State's GHG reduction goals. CARB finds per-capita light-duty vehicle travel would need to be

[6] Special Report : Post-COVID Climate Impact
https://www.streetlightdata.com/special-report-post-covid-climate-impact/
[7] Technical Advisory on Evaluating Transportation Impacts in CEQA
http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf
[8] California Air Resources Board 2017 Scoping Plan
https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf
[9] Senate Bill 743 Implementation
https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743

approximately 16.8 percent lower than existing, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels under that scenario. CARB also acknowledges that the SCS targets are not sufficient to meet climate goals. As stated in the report, "…the full reduction needed to meet our climate goals is an approximately 25 percent reduction in statewide per capita on-road light-duty transportation-related GHG emissions by 2035 relative to 2005." This estimate was made with a model that does not fully capture emerging transportation trends such as greater internet shopping, growing use of Uber and Lyft, future transitions to autonomous vehicles, nor behavior changes due to the COVID-19 (e.g., telecommuting). As such, the level of VMT reduction necessary to reach the State's GHG reduction goals may exceed 25 percent if travel patterns return to pre-COVID levels.

OPR considered this research when developing recommended VMT thresholds. In the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold. This threshold is based on the abovementioned research documents from CARB as well as evidence that suggests a 15 percent reduction in VMT is an achievable reduction at the project level in a variety of place types[10] and would help the State towards achieving its climate goals based on currently available information. Caltrans' *Draft VMT-Focused Transportation Impact Study Guide* supports the use of the OPR recommendations for land use projects and plans. The City is currently reviewing options for VMT methodologies and thresholds and expects to adopt guidelines by the end of 2020 on this topic.

Caltrans Traffic Impact Study Guidelines

Caltrans is responsible for the maintenance and operation of State routes and highways. In Petaluma, Caltrans facilities include US-101 and SR 116. Caltrans maintains a volume monitoring program and reviews local agencies planning documents (such as this TIS) to assist in its forecasting of future volumes and congestion points. The Guide for the Preparation of Traffic Impacts Studies published by Caltrans[11] is intended to provide a consistent basis for evaluating traffic impacts to State facilities. The City recognizes that "Caltrans endeavors to maintain a target level of service at the transition between LOS C and LOS D on State highway facilities;" however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target level of service. Caltrans states that, for existing State highway facilities operating at less than the target level of service, the existing level of service should be maintained.

[10] Place types refer to the context of a project, whether it is urban, suburban, or rural. The research is presented int eh following report: CAPCOA (2010) Quantifying Greenhouse Gas Mitigation Measures, p. 55, available at http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

[11] Caltrans, 2002. Guide for the Preparation of Traffic Impacts Studies, December.

Caltrans released the *VMT-Focused Transportation Impact Study Guide* (February 28, 2020) that recommends use of the OPR recommendations for land use projects and plans. For transportation projects, Caltrans has suggested that any increase in VMT would constitute a significant impact. This has been referred to as the "Net Zero VMT threshold." Caltrans also recently released the *Interim Land Development and Intergovernmental Review (LDIGR) Safety Review Practitioners Guidance* (July 2020) to provide guidance about the analysis of safety on the state highway system.

Regional Plans and Policies

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area (Bay Area). It is responsible for developing the regional transportation plan and prioritizing regional transportation projects for State and federal funding. MTC maintains the Travel Demand Model used for this VMT analysis.

Sonoma County Transportation Authority

The Sonoma County Transportation Authority (SCTA) is the County's Congestion Management Agency. The SCTA works with the local jurisdictions to provide countywide transportation planning to help meet demands and improve Sonoma County's transportation system. SCTA produces long range documents including the Comprehensive Transportation Plan and the Countywide Bicycle and Pedestrian Master Plan. The SCTA also assists local jurisdictions in local specific plans, like Station Area Plans around transit stations and Priority Development Area plans for transit oriented and walkable communities. SCTA prepared the Sonoma County Travel Demand Model that was used to estimate trip distribution, cumulative volume forecasts, and VMT estimates for this study.

Local Plans and Policies

City of Petaluma 2025 General Plan

The following transportation-related policies in the City of Petaluma *2025 General Plan* (effective June 2008) are applicable to the proposed project. The City of Petaluma has initiated an update to the General Plan in 2020 and expects to finish this effort in 2022 or 2023.

Chapter 5 Mobility

Goal 5-G-1: **Mobility Framework**

To improve Petaluma's mobility system to increase efficiency for all modes of travel.

Policy 5-P-1: Develop an interconnected mobility system that allows travel on multiple routes by multiple modes.

Develop a network that categorizes streets according to function and type, considering the surrounding land use context.

Develop a network for off-street paths and routes according to function and type, considering the intensity of use and purpose.

Review and update the City's Street Design Standards to be consistent with street function and typology.

Explore the redesign of existing streets to potentially reduce the width and/or number of travel lanes, improve the multimodal function of intersections and street segments, and introduce amenities such as wider sidewalks, special paving treatments, bus priority treatments, landscaped medians, and street trees within parking lanes.

Evaluate the feasibility of road diets on streets with projected excess capacity at buildout (see Section 5.3).

Policy 5-P-2: Ensure the identified mobility system is provided in a timely manner to meet the needs of the community by updating the City's transportation impact fee program to insure that necessary citywide improvements are funded.

Transportation impact fees will be determined based on each project's fair share of the aggregate costs of roadway improvements identified within the Mobility Element and EIR.

The fee program is intended to ensure that new developments pay its proportionate share of traffic infrastructure improvements to mitigate direct traffic impacts from new development.

Some portion(s) of the identified mobility system improvements will be constructed as part of project related frontage improvements.

Allocation of mitigation funds shall be designated to the capital improvement project for which it was exacted.

Transportation impact fees will be routinely updated to reflect project timing and costs.

Policy 5-P-4: New development and/or major expansion or change of use may require construction of off-site mobility improvements to complete appropriate links in the network necessary for connecting the proposed development with existing neighborhoods and land uses.

Policy 5-P-5: Consider impacts on overall mobility and travel by multiple travel modes when evaluating transportation impacts.

Policy 5-P-6: Ensure new streets are connected into the existing street system and encourage a grid-based network of streets.

Policy 5-P-7: Where aesthetic, safety, and emergency access can be addressed, allow narrower streets in residential development to create a pedestrian scaled street environment.

Policy 5-P-8: The priority of mobility is the movement of people within the community including the preservation of quality of life and community character.

Chapter 5.3: Motor Vehicle Circulation

Goal 5-G-2: Motor Vehicle Circulation

Promote the safe movement of people and goods through Petaluma's streets.

Policy 5-P-10: Maintain an intersection level of service (LOS) standard for motor vehicle circulation that ensures efficient traffic flow and supports multi-modal mobility goals. LOS should be maintained at Level D or better for motor vehicles due to traffic from any development project.

A lower level of service may be deemed acceptable, by the City, in instances where the City finds that potential vehicular traffic mitigations (such as adding additional lanes or modifying signal timing) would conflict with the Guiding Principles of the General Plan, particularly with regard to:

Guiding Principle #2. Preserve and enhance Petaluma's historic character.

Guiding Principle #6. Provide a range of attractive and viable transportation alternatives, such as bicycle, pedestrian, rail and transit.

Guiding Principle #7. Enhance Downtown by preserving its historic character, increasing accessibility, and ensuring a broad range of business and activities and increasing residential activities.

The above does not relieve any need to mitigate development related impacts, which may include multi-modal improvements to reduce identified impacts.

Chapter 5.5: Bicycle and Pedestrian Circulation

Goal 5-G-5: Bicycle and Pedestrian Improvements

Create and maintain a safe, comprehensive, and integrated bicycle and pedestrian system throughout Petaluma that encourages bicycling and walking and is accessible to all.

Policy 5-P-15: Implement the bikeway system as outlined in the Bicycle and Pedestrian Plan and expand and improve the bikeway system wherever the opportunity arises.

Fund and implement the Bicycle Plan and complete gaps in the bikeway network through new development, redevelopment and the Capital Improvements Program.

Develop and update guidelines and standards for the design of bicycle facilities.

Design and maintain bikeways at or above local, state, and federal standards in order to maximize safety for bicyclists (e.g. width).

Develop and implement a uniform bicycle signage program to enhance safety and ease of travel for all who use the city transportation network.

Identify loop detectors along bikeways with stencils where (a) the outline of the loop is not identifiable on the surface of the roadway, or (b) where it is unclear which of the identifiable loops will activate the signal.

Preserve the Highway 101 pedestrian/bicycle over-crossing south of East Washington Street interchange.

Continue to outfit local transit busses with bike racks; and encourage regional transit providers to provide bike racks as well.

Note the following bicycle facilities in the project site's vicinity (Petaluma General Plan, Figure 5-2):

D Street – Existing Class II – on-street, striped bikeway

Lakeville Street – Existing Class II – on-street, striped bikeway

Washington Street – Proposed Class III – on-street, shared bikeway

Petaluma Boulevard – Proposed Class III – on-street, shared bikeway

Policy 5-P-19: All new and redesigned streets shall be bicycle and pedestrian friendly in design.

Policy 5-P-20: Ensure that new development provides connections to and does not interfere with existing and proposed bicycle facilities.

Policy 5-P-22: Preserve and enhance pedestrian connectivity in existing neighborhoods and require a well-connected pedestrian network linking new and existing developments to adjacent land uses.

Improve the pedestrian experience through streetscape enhancements, focusing improvements where there is the greatest need, and by orienting development toward the street.

Improve street crossings and complete gaps in the sidewalk system through development review and capital improvement projects.

Policy 5-P-23: Require the provision of pedestrian site access for all new development.

Policy 5-P-25: Establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel. At the minimum, Class I standards shall be applied unless otherwise specified.

Policy 5-P-26: Require all new development and those requiring new city entitlements with "frontage" along creeks and the river to permit through travel adjacent to creeks and the river with access points from parallel corridors spaced at minimum intervals of 500–1,000 feet.

Policy 5-P-28: Allow bicyclists and pedestrians use of all emergency access routes required of existing and new developments.

Policy 5-P-30: Require all new development abutting any public trail to provide access to the trail.

Policy 5-P-31: Make bicycling and walking more desirable by providing or requiring development to provide necessary support facilities throughout the City.

Require projects subject to discretionary approval to install public benches where appropriate.

Chapter 5.7: Traffic Calming/Neighborhood Traffic Management

Goal 5-G-7: Neighborhood Traffic Management

Enhance quality of life and community character within neighborhoods through the use of neighborhood traffic management techniques.

Policy 5-P-48: The City should not assume public responsibility for maintenance of private streets not built consistent with current public street standards.

Require private streets to be consistent with public street standards where deemed necessary and appropriate by the City (e.g., for utilities, street lights, sidewalks, street trees, parking) as well as to include traffic calming measures where appropriate.

Central Petaluma Specific Plan

The 2003 Central Petaluma Specific Plan (CPSP) is intended to redirect growth in Central Petaluma with a specific emphasis on the Petaluma River as a source of connectivity and identity. It seeks to promote sustainable and mixed-use development, historic preservation, and multi-modal transportation to facilitate this growth. The Petaluma Station project is in the Turning Basin East subarea, which calls for an employment-oriented office and retail center with residential development on upper stories. It encourages pedestrian-oriented development that is connected both to the river and to the Petaluma Train Depot, which is now served by the SMART train.

SMART Station Area Master Plan

The Petaluma Station project is also located in the 2013 Station Area Master Plan (SAMP). The SAMP encourages the development and redevelopment of the Downtown Station Area into a pedestrian-oriented, livable, mixed-use environment that both capitalizes on and supports SMART train ridership. The project site is identified as one of three Catalyst sites that are intended to bring the area in line with the goals of both the SAMP and the CPSP. The SAMP calls for the project to be bisected by 104-foot-wide street and linear park to improve pedestrian and vehicular access to the SMART station; this street is also intended to function as part of a larger network of open spaces and connect the station and riverfront both physically and visually. The intention was for this street to connect with a new north-south street (Station Access Road) directly west of the station. However, at the time of publication, construction of this new roadway was determined not feasible by the City, since it would require the City to purchase land from SMART. As a result, the original intention of the SAMP has been modified by Petaluma's City Council as a non-vehicular corridor and linear park.

SmartCode

The SmartCode is a form-based regulatory code that implements the objectives of the CPSP and SAMP. It prescribes not only allowed uses, but also development standards for both the public and private realm. The SmartCode is based on the Transect, a method of organizing land usage along a spectrum of rural to

urban. The Petaluma Station site is falls under two Transect Zones within the SmartCode. The T-6-O Urban Core Zone is prescribed for areas within 50 feet of East Washington Street, East D Street and the SMART station. This zone anticipates the highest building density and height, with a diversity of residential, commercial, and civic uses. The rest of the site falls under the T-5 Urban Center Zone, which anticipates a tight network of streets with retail, offices, rowhouses, and apartments between 3 and 5 stories. Both zones encourage wide sidewalks and steady street tree planting. The SmartCode also specifies a minimum parking requirement for residential uses in zone T-5 and T-6 of 1.0 space per market rate unit and 0.5 space per affordable unit.

City of Petaluma Development Impact Fees

Transportation impact fees are assessed through the City of Petaluma Development Impact Fees initially adopted on May 19, 2008 and adjusted annually as provided for in the adopting resolutions for each fee. The purpose of the Traffic Development Impact Fee is to provide funds for the construction and implementation of improvements to key elements of the citywide transportation system sufficient to accommodate the development's share of traffic volumes generated by the new development. Fees are based on a "per unit" measure for single-family residential, multi-family residential, mobile home, senior housing, assisted living units and commercial lodging. For retail, office, and industrial uses, fees are calculated on a "per square foot" basis.

CEQA Significance Criteria

The following subsection outlines the CEQA significance criteria applied in the analysis.

CEQA Checklist Guidance

Appendix G of the *California Environmental Quality Act (CEQA) Guidelines* provides guidance on the required elements of analysis to document the project's environmental effects on the transportation for CEQA. An affirmative answer to any of the following questions generally indicates a significant impact would occur and mitigation would be required to alleviate the significant impact.

Would the project:

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

b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d. Result in inadequate emergency access?

The subsections below describe the criteria which the City of Petaluma considers to be significant impacts.

Vehicle-Miles Traveled

As a component of the City of Petaluma's on-going SB 743 implementation, the City is currently engaged in a process to update the performance metrics and thresholds used to measure transportation system impacts of discretionary projects. Since the City has not yet adopted a VMT threshold, OPR's recommended threshold of 15 percent below the City average is used for analyzing VMT impacts of the project (*Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR, 2018).

For the Petaluma Station project, a significant impact would occur if the project generates greater than 16.4 VMT per resident under existing plus project conditions based on 15 percent below the existing City average of 19.3 home-based VMT per resident. The existing City average value was calculated using the 2015 base year of the most recent available version of the Sonoma County Transportation Authority (SCTA) travel demand model, which was updated in August 2020 to incorporate 'Big Data' and refine trip length estimates, especially for inter-county trips that were partially truncated in an earlier version of the model. The 2015 horizon year was chosen as a baseline due to the effects of 2017 and 2019 Sonoma County wildfires and the 2020 COVID-19 pandemic. Note that cumulative VMT analysis is not required for CEQA per OPR guidance in the *Technical Advisory*.

Hazards and Emergency Access

The proposed project would have a significant impact related to hazard and emergency access if it does not provide an adequate internal circulation system, if it substantially increases hazards due to a geometric design feature, or if it substantially impacts emergency access.

Public Transit

The proposed project would have a significant impact on public transit if it would:

- result in a significant unanticipated increase in transit patronage; or
- be inconsistent with or preclude an adopted policy in the City of Petaluma *2025 General Plan*.

Bicycle and Pedestrian System

The proposed project would have a significant impact on bicyclists or pedestrians if it would:

- cause unsafe pedestrian and/or bicycle traffic flow patterns;
- exacerbate currently unsafe pedestrian and/or bicycle condition within the area;
- restrict or compromise pedestrian and/or bicycle flows within the area;

- fail to provide good pedestrian and bicycle linkages internal to the project and connecting to adjacent facilities;
- fail to provide secure and safe bicycle parking in adequate proportion to anticipated demand for bicycle parking; or
- be inconsistent with or preclude an adopted policy in the City of Petaluma 2025 General Plan.

Construction

Construction of the project would have a significant effect on the environment if it would require a substantially extended duration or intense activity and the effects would disrupt emergency access or accessibility for people traveling on the surrounding roadway network.

Informational (non-CEQA) Intersection Operations Analysis

An assessment of the project's effect on intersection operations and parking supply in relation to City policies are presented for informational purposes and are not used for determining environmental impacts (per Senate Bill 743 and CEQA Guidelines §15064.3).

Intersection LOS is compared to the intersection LOS standards and policies in the City of Petaluma *2025 General Plan*. These results are documented for informational purposes only, and no CEQA impact significance findings are made for intersection LOS. According to the City of Petaluma *2025 General Plan*, the proposed project would result in unacceptable operations at the study intersections if it would cause:

- operations at a signalized or unsignalized intersection to degrade from an acceptable level (LOS D or better) under conditions without the project to an unacceptable level (LOS E or F) under Project conditions,
- unacceptable intersection operations (signalized or unsignalized) to be exacerbated by degrading the service level from LOS E under conditions without the project to LOS F under Project conditions; or
- any increase in vehicle trips under Project conditions at a signalized or unsignalized intersection operating at unacceptable service level LOS F under conditions without the project.

However, according to Policy 5-P-10-A in the City's *2025 General Plan* (listed above), a lower level of service may be deemed acceptable by the City, in instances where the City finds that potential vehicular traffic mitigations (such as adding additional lanes or modifying signal timing) would conflict with the Guiding Principles of the General Plan. The City's *2025 General Plan* EIR identified several intersections where a lower level of service was deemed acceptable due to physical constraints that limited feasible improvements, including Lakeville Street/East D Street, Lakeville Street/Caulfield Lane, and Petaluma Boulevard/D Street, where LOS E or F were found acceptable and overrides were adopted by the City Council when the General Plan EIR was certified.

4. Analysis Approach

This traffic impact study assesses the project's impact on the transportation network in terms of both vehicle-miles traveled (VMT) and level of service (LOS) (for informational purposes only). This chapter includes a description of the methods used to estimate vehicle-miles traveled and to analyze traffic operations across the following scenarios: Existing, Existing Plus Project, Pipeline, Pipeline Plus Project, Cumulative, and Cumulative Plus Project. The methodologies use to forecast traffic volumes for future analysis scenarios and estimate trip generation, distribution and assignment for the project are also described.

Vehicle-Miles Traveled Analysis

The methodology for assessing and estimating VMT for this study – in terms of potential screening opportunities and use of the SCTA Travel Demand Model – is described below.

Potential Screening Opportunities

VMT screening is a process related to reviewing the location and operating parameters of land use projects and programs to determine if a project or program does not need to perform a VMT analysis because it is presumed to generate a low amount of VMT. The *Technical Advisory* provides a number of potential screening criteria, including:

- Development in a low VMT generating area per the SCTA travel model (relative to suggested CEQA impact criteria presented in the *Technical Advisory*)
- Development located within a 0.5-mile walkshed of an existing major transit stop or existing stop along a high-quality transit corridor
- Development in infill locations that are (1) 100 percent affordable and (2) in an area where a jobs/housing imbalance exists such that the infill development would promote shorter commute trips
- Small developments that generate or attract fewer than 110 trips per day
- Local-serving retail, which tends to shorten trips and reduce VMT

The residential component of the project does not meet the VMT screening criteria for proximity to a major transit station, since the project's total parking supply exceeds the minimum parking requirement for the project as specified in the SmartCode. Therefore, a VMT assessment for the project was conducted. However, the retail component (approximately 5,130 square feet) will be primarily local-serving, and is

therefore presumed to create *a* ***less-than-significant*** *t*ransportation impact and is screened out from further CEQA analysis.

SCTA Travel Demand Model

VMT analysis for the project was completed using the latest available version of the SCTA Travel Demand Model for the Base Year and Base Year with Project scenarios to understand VMT per resident under Existing and Existing Plus Project Conditions.[12] A Cumulative (Year 2040) plus Project analysis was also performed for informational (non-CEQA) purposes.

The latest version of the SCTA Travel Demand Model, which was updated in August 2020, has been refined to reflect a Year 2015 base year as well as to incorporate "Big Data" trip length estimates at the model gateways. The incorporation of Big Data trip length estimates provides a more precise understanding of the length of trips that occur beyond the County boundary, thus alleviating the trip length truncation issues associated with earlier versions of the model.

One known constraint of the Base Year model, which reflects year 2015 conditions, is that it does not include SMART passenger rail service, which became operational in 2017. Therefore, the degree to which the presence of SMART train service influences travel behavior and VMT is not captured in the model's Base Year and Base Year Plus Project VMT estimates. VMT estimates using the Base Year model – for both the project and threshold values – are therefore likely to be conservative as they do not take into account the additional transit connectivity provided by the SMART train.

The model uses daily, home based VMT per resident for the project and total City-wide VMT. The project-generated VMT per resident was evaluated per the significance criteria presented in **Chapter 3**. The retail portion of the development is screened out from CEQA analysis based on the small, locally-serving retail project exemption outlined in the *Technical Advisory*, as noted above. For projects with significant impacts with respect to VMT, applicants will be required to develop a TDM plan that includes VMT-reducing mitigation measures, such as incentives for non-auto travel or project changes that could reduce the impact to a less than significant level, if feasible.

Informational (Non-CEQA) Intersection Operations Analysis

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-

[12] Note that the analysis of VMT under pipeline and cumulative conditions is not required for CEQA. The available travel demand models do not reflect a pipeline conditions scenario, therefore, an analysis of VMT per capita for pipeline conditions was not conducted.

flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and operations are designated LOS F.

Analysis Scenarios

Descriptions of the scenarios used to analyze intersection operations follow:

- ***Scenario 1: Existing Conditions***—represent the baseline condition (2019) upon which project effects are measured, as described in **Chapter 2**.
- ***Scenario 2: Existing Plus Project Conditions***—represent existing (2019) conditions with project-related traffic.
- ***Scenario 3: Pipeline Conditions***—represent existing (2019) conditions considering the traffic that could be generated by pipeline projects within the study area that are reasonably foreseeable to be constructed and/or occupied in the next five to ten years.
- ***Scenario 4: Pipeline Plus Project Conditions***—represent pipeline project conditions with project-related traffic.
- ***Scenario 5: Cumulative Conditions***—represent conditions with planned future development and transportation network changes by 2040.
- ***Scenario 6: Cumulative Plus Project Conditions***—represent cumulative conditions with project-related traffic.

Intersection Analysis Methodology

Signalized Intersection Methodology

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board (TRB), as documented in the *Highway Capacity Manual, 6th Edition* (HCM 6th Edition) for vehicles. Most study intersections were evaluated using the Synchro 10 analysis software package.

The intersections nearest to the site, Lakeville Street/East Washington Street, Lakeville Street/East D Street, East Washington Street/Copeland Street, and East D Street/Copeland Street were evaluated using the SimTraffic analysis software to better model traffic operations at and adjacent to the SMART at-grade rail crossings. Conducting a microsimulation analysis at these intersections represents a more technically robust approach, since the intersections have been traditionally analyzed using Synchro, which generally ignores the effects of railroad grade crossing events. The use of SimTraffic microsimulation analysis for grade crossings is standard practice throughout the Bay Area, including for analysis of grade crossings along the Caltrain and Capitol Corridor passenger rail lines.

Since SMART service commenced in mid-2017, traffic congestion in the area around the Downtown Petaluma SMART station is substantially influenced by train crossings, which occur approximately four

times per hour during the AM and PM peak hours. When trains arrive at the Lakeville Street/East Washington Street and Lakeville Street/East D Street intersections, allowed vehicle movements are generally limited to only the northbound through and right turn movements; this situation results in vehicle queues that spillback to upstream intersections at East Washington Street/Copeland Street, and East D Street/Copeland Street. The SimTraffic analysis program captures the effects of these grade crossing events.

The HCM methodologies calculate control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay is summarized in **Table 2** for signalized intersections.

Table 2: Signalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels, and most cycles fail to clear the queue.	> 80.0

Source: Highway Capacity Manual, 6th Edition

Unsignalized Intersection Methodology

For unsignalized intersections, the *HCM 6th Edition* method for side-street stop-controlled intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and

moving up in queue. **Table 3** summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections.

Table 3: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Substantial traffic, delays where intersection capacity exceeded	> 50.0

Source: Highway Capacity Manual, 6th Edition

Volume Forecasting Approach

This section describes the methodology for developing traffic volume forecasts for Pipeline, Cumulative, and Plus Project conditions.

Pipeline Conditions Scenario Development

The pipeline conditions scenario considers the traffic that would be generated by projects within the study area for which it is reasonably foreseeable that they would be constructed and occupied in the next five to ten years. The projects reflected in this analysis have either been approved for development by the City of Petaluma or are in the approval process.

Pipeline Roadway Assumptions

No roadway improvements were assumed at any of the study intersections for the analysis of pipeline conditions.

Pipeline Forecasts

The pipeline scenario reflects existing traffic counts plus traffic from approved and pending developments within or adjacent to the study area. Therefore, pipeline conditions represent the likely traffic levels at the time the project is completed and occupied. Projects that could generate additional traffic in the study area are summarized in **Table 4** and their locations are shown on **Figure 6**.

Table 4: Pipeline Projects

Project Name	Project Address	Size[1]	Land Use (ITE Land Use Code)
Commercial Developments			
Adobe Road Winery	1 C Street	15.85 KSF	970, winery
Valero Gas Station	532 East Washington Street	3.04 KSF	945, gas station
Mixed Use Developments			
Omahony Mixed Use Building	131 Liberty Street	10 DU; 1.5 KSF Commercial	820, shopping center; 220, multi-family housing, low rise
Riverfront 2010	500 Hopper Street	273 DU; 30 KSF Office; 60 KSF Hotel	710, general office; 310, hotel; 220, multi-family housing, low rise; 210, single family detached housing
Haystack Pacifica	215 Weller Street	178 DU; 14.52 KSF Commercial	820, shopping center; 220, multi-family housing, low rise
Scannell Mixed Use Development	500 Hopper Street	275 DU; 190 KSF Office	710, general office; 220, multi-family housing, low rise; 210, single family detached housing
North River Apartments	368, 402 Petaluma Boulevard N	184 DU; 3.0 KSF Commercial; 1.7 KSF Office	826, specialty retail center; 710, general office; 220, multi-family housing, low rise
Residential Developments			
109 Ellis Street	109 Ellis Street	13 DU	220, multi-family housing, low rise
Baywood Apartments	2592 Casa Grande Road	299 DU	220, multi-family housing, low rise
Sepaher Residential Building	315 Lakeville Street	4 DU	220, multi-family housing, low rise
East Washington Commons	817, 822, 825 East Washington Street	24 DU	220, multi-family housing, low rise
Sid Commons	End of Graylawn Ave.	278 DU	220, multi-family housing, low rise
Riverbend	529 Madison Street	30 DU	210, single-family housing, detached

Note:
1. DU=dwelling units; KSF=thousand square feet
Source: City of Petaluma, Pending Projects Summary March 3, 2020; ITE *Trip Generation Manual, 10th Edition*

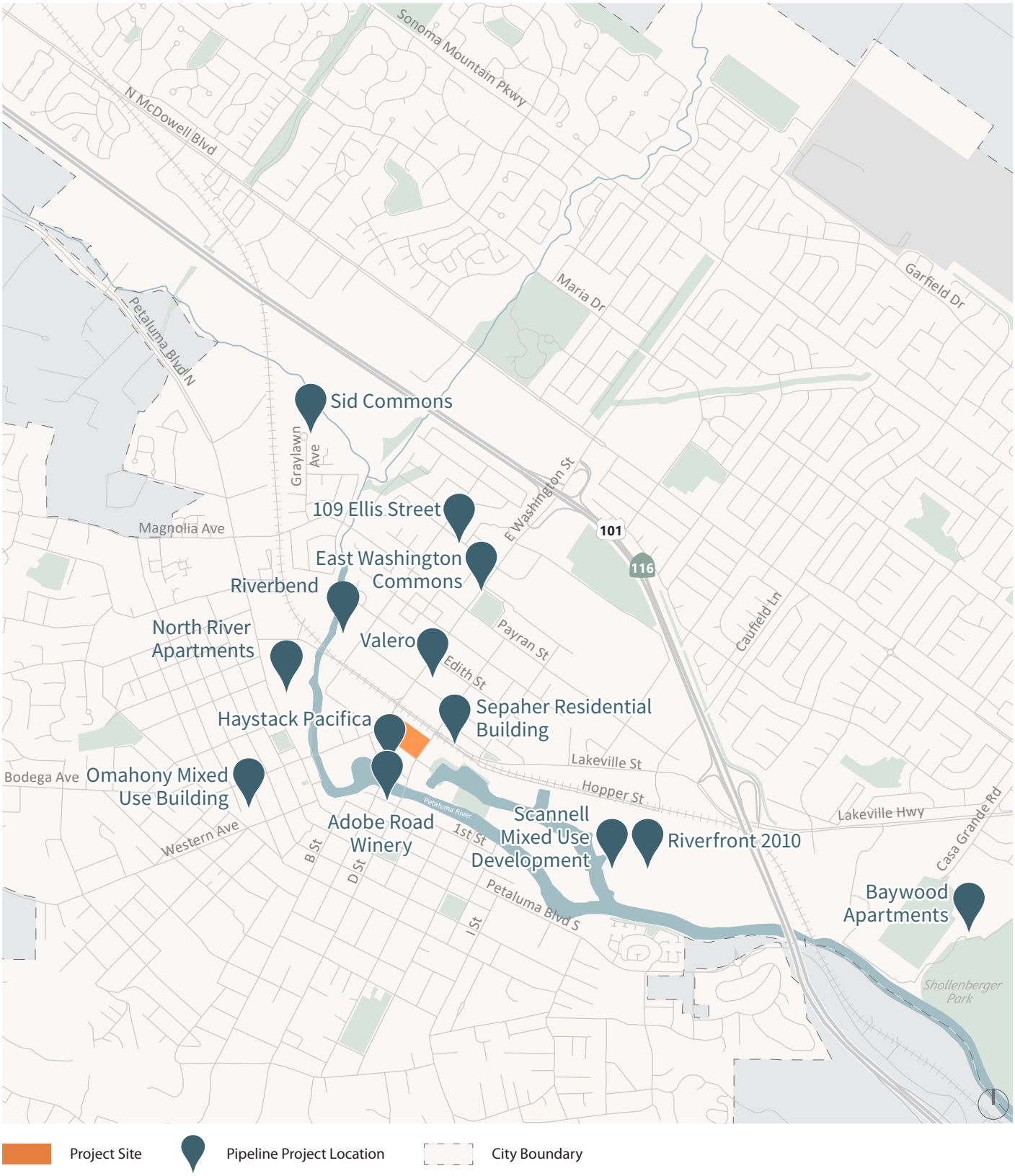


Figure 6

Pipeline Project Locations

SF20-1085_6_PipelineProjects

Vehicle trip generation for pipeline conditions was estimated using trip generation rates and equations for the proposed land uses from ITE's *Trip Generation Manual* (10th Edition). The results are provided in **Appendix B**. Traffic generated by approved and pending developments[13] was added to the existing traffic volumes to provide the basis for the pipeline project trip generation. This information was added to a spreadsheet model developed by Fehr & Peers to approximate travel patterns through study intersections for the project and determine the trip distribution for the pipeline projects. The Pipeline No Project and Pipeline Plus Project traffic volumes and operations analysis are presented in **Chapter 7.**

Cumulative Conditions Scenario Development

Cumulative conditions represent conditions with planned transportation network changes and planned future land use development.

Cumulative Roadway Assumptions

The cumulative analysis for this study is based on the buildout of the City under the *2025 General Plan*, which at the time of preparation of the City of Petaluma *2025 General Plan* was predicted to occur by 2025. Due to economic factors and a slowdown in the economy, this buildout likely will not be reached until after 2025. Therefore, the cumulative analysis is assumed as 2025 or later, based on buildout of development foreseen in the City of Petaluma *2025 General Plan*. Major roadway improvements assumed for the cumulative analysis are consistent with the *2025 General Plan* and include the projects described below. With the exception of the Highway 101 widening, these major roadway improvements are included in the City's Capital Improvement Plan and are assumed to be fully funded through development contribution and the City's Traffic Impact Fee program.

Highway 101 Widening. Highway 101 would be widened to provide high-occupancy vehicle (HOV) lanes in both directions. This project is a part of the Caltrans Marin-Sonoma Narrows HOV Widening (MSN) Project, component MSN-C, which is included as a top priority for Tier 1 funding in the Metropolitan Transportation Commission Regional Transportation Plan. At the time of writing the HOV lanes on US-101 had been completed north of Petaluma to Santa Rosa and from Central Marin County through Novato. In addition, at the time of writing, several interchanges in Petaluma were under construction to close the gap in HOV lanes between Novato and north of Petaluma.

Rainier Avenue Extension and Interchange Project. Rainier Avenue would be extended from McDowell Avenue to Petaluma Boulevard North. An interchange would be constructed at Rainier Avenue between the Old Redwood Highway and East Washington Street interchanges. The new interchange would consist of a partial-cloverleaf design with auxiliary lanes in both directions between the Rainier Avenue and East

[13] The analysis did not include minor renovation projects that would have negligible impact on traffic volumes within the study area.

Washington Street interchanges. Ramp metering and HOV bypass lanes would be provided at all onramps. The Rainier Avenue extension and Interchange projects are two separate projects that would be built separately as money becomes available.

North Petaluma Boulevard Grid. A grid of streets would be developed near North Petaluma Boulevard adjacent to the Rainier Avenue extension and a planned southward extension of Industrial Avenue.

Caulfield Lane Petaluma River Bridge. Caulfield Lane would be connected between its existing terminus at Hopper Street and Petaluma Boulevard South via a new bridge over the Petaluma River.

Cumulative Forecasts

Traffic volumes for cumulative conditions were forecasted using the summer 2020 version of the SCTA Travel Demand Model, which uses land use and transportation network information to predict traffic volumes on local roadways. The traffic model forecasts traffic volumes on roadway segments, but it does not predict intersection turning movement volumes. The SCTA model base year is representative of 2015 conditions; the 2015 base year model was calibrated and validated by SCTA's consultants at a regional level, but local, Petaluma intersection turning movement level calibration was not performed.

To provide a basis for forecasts, the annual straight-line percent change between the model's base year (2015) and Year 2040 cumulative traffic forecasts was calculated at the study intersections. This annual percent change was applied to the 2019 existing traffic volumes (see **Figure 5**) to estimate cumulative traffic forecasts that account for growth that has occurred between 2015 and 2019. The reasonableness of these forecasts was compared against the estimated traffic volumes under pipeline conditions, as presented in **Chapter 7**. In general, the traffic forecasts under cumulative conditions are greater than those under pipeline conditions to reflect anticipated land use changes between pipeline and cumulative conditions. However, since the cumulative forecasts account for the Rainier Avenue Extension and Interchange and Caulfield Lane Connection projects, which would provide alternate parallel routes to East Washington Street and East D Street, in some cases the cumulative traffic forecasts are lower along these two corridors as compared to pipeline conditions.

Estimated traffic volumes at the study intersections under cumulative conditions are presented in **Chapter 7** (see **Figure 12**).

Plus Project Scenario Development

In order to develop the volume estimates for the Plus Project scenarios and determine the project effects on the surrounding roadway network, the amount of traffic associated with the project was estimated using a three-step process:

1. **Trip Generation** – The estimated *amount* of vehicle traffic entering/exiting the project site.
2. **Trip Distribution** – The *direction* trips are projected to approach and depart the project site.
3. **Trip Assignment** – The project trips were then *assigned* to specific roadway segments and intersection turning movements.

Project Trip Generation

The project includes two buildings that will contain a total of 402 residential units and approximately 5,130 square feet of retail space. The project land use components are the primary inputs in the estimation of trip generation. For a more detailed project description refer to **Chapter 1**.

The project's trip generation was estimated using the MXD+ methodology for the weekday daily, weekday AM peak hour, and weekday PM peak hour. This methodology is more precise than conventional methods for estimating the number of trips generated by mixed-use projects, such as use of the Institute of Traffic Engineers (ITE) Trip Generation Manual, which is based on data derived primarily from single-use and freestanding sites. The MXD+ trip generation methodology, based on Environmental Protection Agency (EPA) and National Cooperative Highway Research Program (NCHRP) research, more precisely estimates trip generation of mixed-use projects by accounting for the travel within the project (i.e., between uses), trips made by non-automobile modes, and the project's land use context.[14] This approach has been successfully applied and defended throughout Northern California to more precisely estimate external trip generation for mixed-use projects. While this approach accounts for a variety of factors noted above, it does not account for transportation demand management (TDM) measures, such as a constrained parking supply, subsidized transit passes, or other incentives to travel by non-auto modes.

Table 5 presents the project's trip generation for the weekday daily, AM peak hour, and PM peak hour periods. The MXD+ trip generation methodology is presented as a trip reduction from the ITE calculation of trips and categorizes the trips by whether they would switch to transit, walking, biking, or remain internal to the project site.

[14] For more information on the MXD+ methodology please visit https://www.fehrandpeers.com/mainstreet/ or see *Getting Trip Generation Right Eliminating the Bias Against Mixed Use Development* by the American Planning Association, May 2013.

Table 5: Project Trip Generation

Land Use	Trip Rates[1]			Trip Generation Estimates						
	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
Base Trip Generation Calculation from ITE Trip Generation Manual, 10th Edition										
Residential (402 units)	5.44	0.36	0.44	2,187	145	38	107	177	108	69
Retail (5.13 KSF[2])	37.82	0.97	3.90	194	5	3	2	20	10	10
ITE Trip Generation Subtotal				*2,381*	*150*	*41*	*109*	*197*	*118*	*79*
MXD+ Trip Reductions										
Internal	-1.4%	-1.3%	-3.0%	-34	-2	-1	-1	-6	-4	-2
Transit	-4.2%	-4.0%	-4.1%	-101	-6	-2	-4	-8	-5	-3
Walk/Bike	-7.8%	-7.9%	-7.1%	-185	-12	-3	-9	-14	-8	-6
Total External Vehicle Trips				***2,061***	***130***	***36***	***95***	***169***	***101***	***68***

Notes:
1. ITE trip generation estimated using the following ITE Land Use codes:
   a. Residential – 221 Multifamily Housing Mid-Rise
   b. Retail – 820 Shopping Center
2. KSF = thousand square feet

Sources: ITE *Trip Generation Manual, 10th Edition;* Fehr & Peers, 2020.

As presented in **Table 5**, the project would generate 2,061 daily external vehicle trips, 130 external vehicle trips during the AM peak hour and 169 external vehicle trips during the PM peak hour. Approximately 13.4 percent of all project trips would be non-automobile trips.

Project Trip Distribution and Assignment

The project's trip distribution is based in part on the Sonoma County Transportation Authority (SCTA) Travel Demand Model. The output generated from the model was refined to account for the project's residential and retail mix of land uses, and local knowledge of travel patterns with input from City staff. The general directions of approach and departure for the project site are shown in **Table 7.**

Project trips were assigned to the roadway network based on local knowledge of residential and retail travel patterns in Petaluma and commonly used paths of travel. **Table 8** presents the project's trip assignment for the weekday AM and PM peak hours.

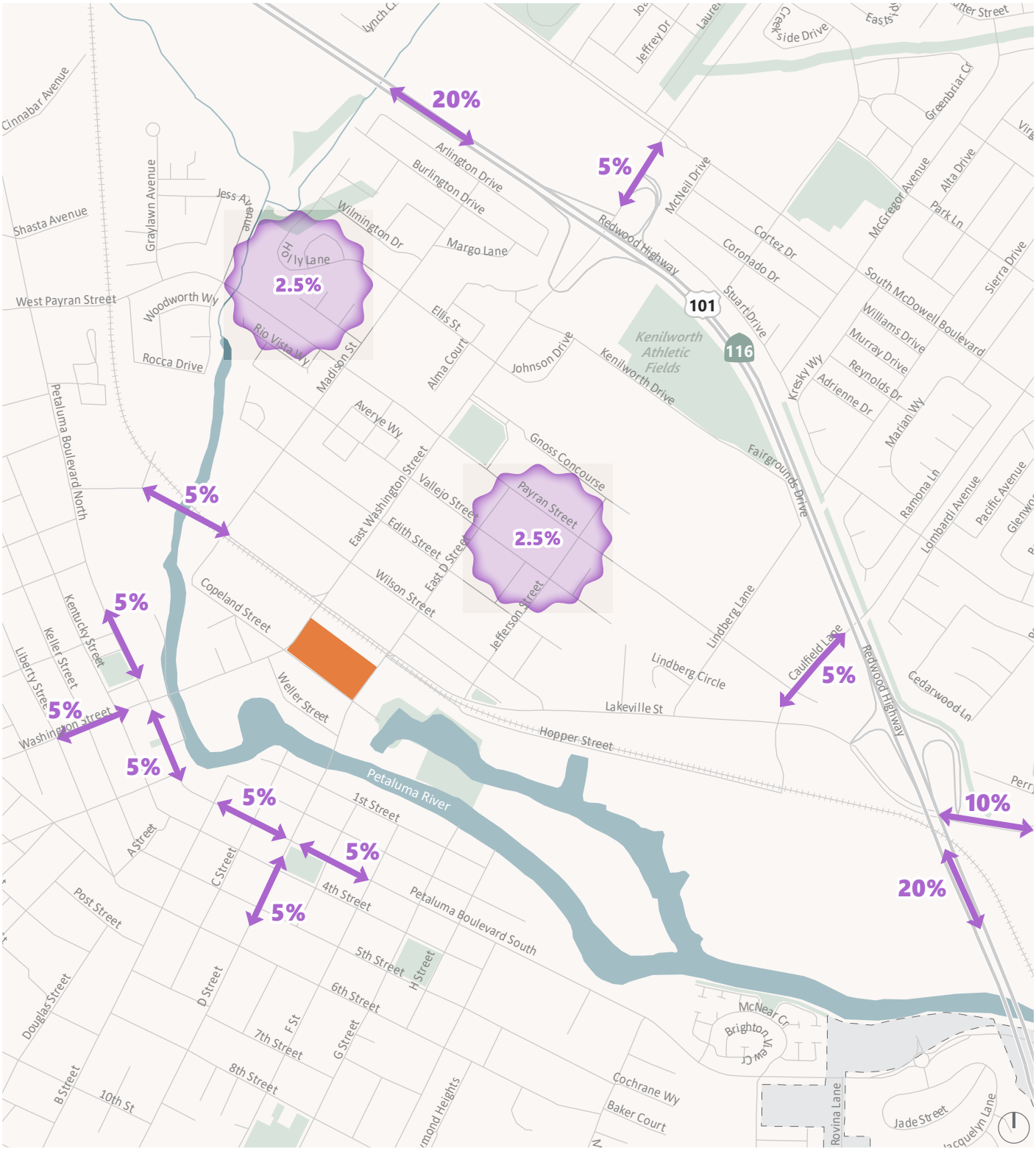
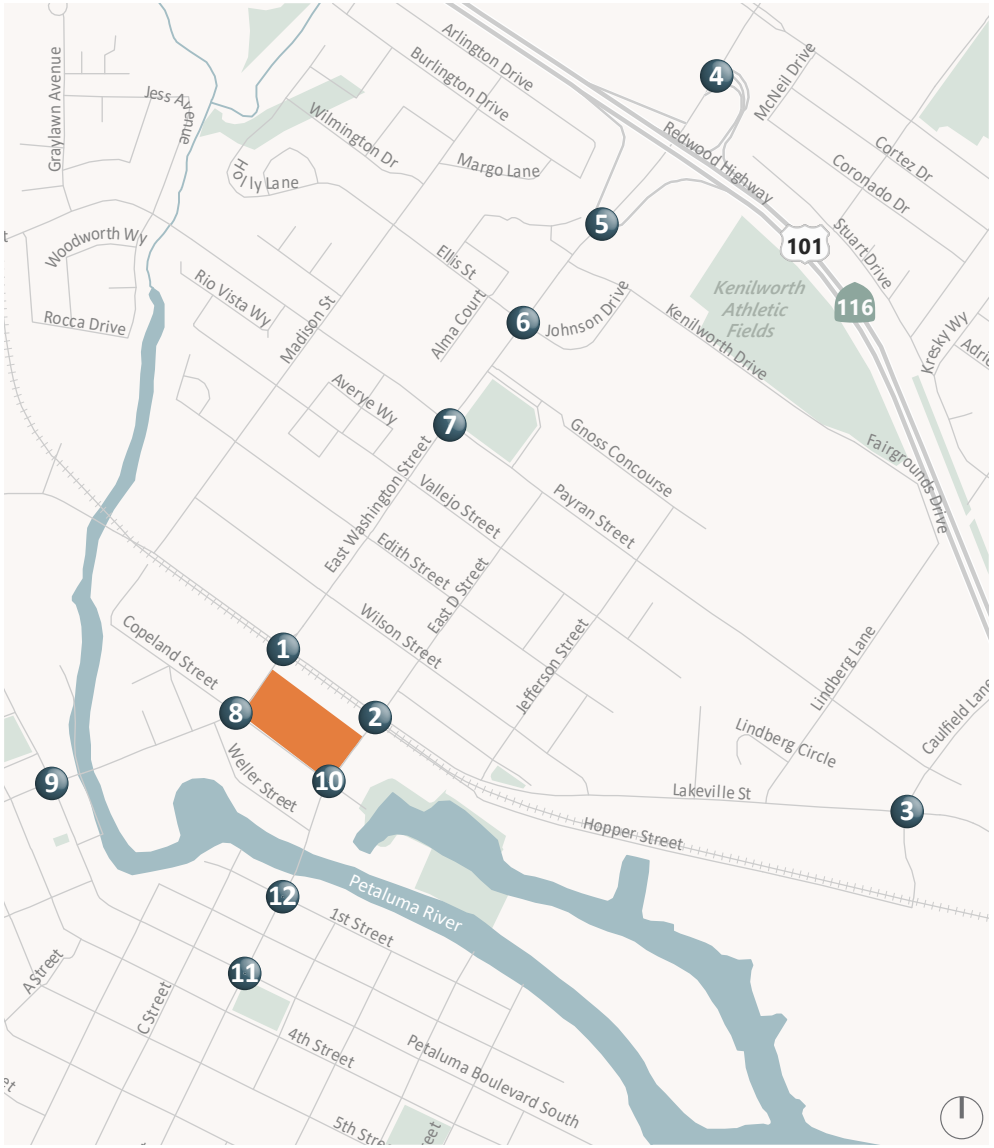
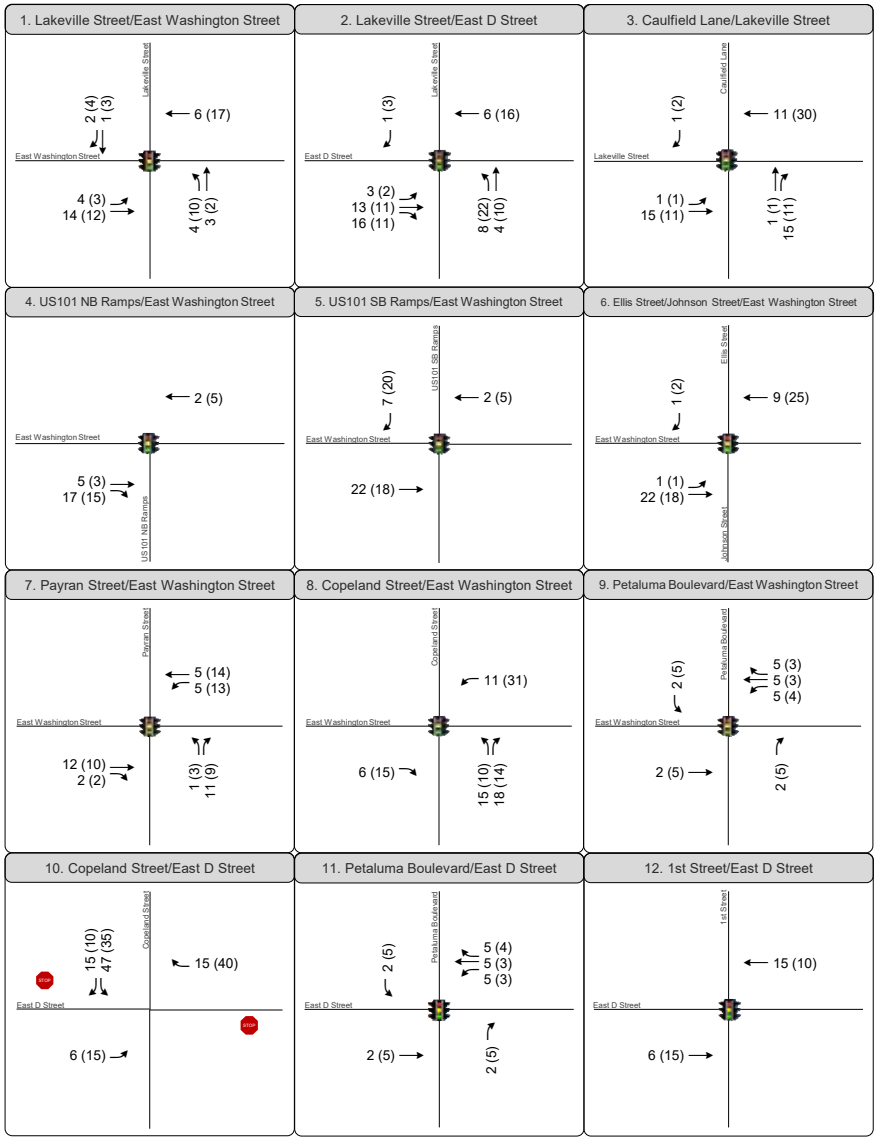


Figure 7

Project Trip Distribution

SF20-1085_7_TripDistro





XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 8

Project Trip Assignment

5. CEQA VMT Assessment

This chapter describes the results of the VMT assessment conducted for the project.

Project VMT Analysis

Home-based VMT per resident from the summer 2020 version of the SCTA model (the most recent available version) were output for the Existing (Year 2015), and Existing Plus Project scenarios. Cumulative plus Project scenario VMT information was provided for informational purposes only. This data is from the project's SCTA model traffic analysis zone (TAZ) based on the most recent available version of the SCTA in August 2020, which was updated to incorporate 'Big Data' and refine trip length estimates, especially for inter-county trips, which were partially truncated in an earlier version of the model. The results of the analysis are presented below in **Table 6**.

Table 6: Residential Component VMT Analysis

Analysis Scenario	Residential VMT Data		
	Total Home-Based VMT per Resident (Project TAZ)	Threshold Value[1]	Impact?
Existing Plus Project	13.3	16.4	No
Cumulative Plus Project (Informational)	8.6	--	--

Source: Fehr & Peers, 2020.
Notes:
1. Threshold value discussed in Chapter 3. Threshold is based on 15 percent below city average home-based VMT per resident based on the SCTA model.

As noted in **Table 6**, under Existing Plus Project conditions, VMT per resident in the project's TAZ adjacent to the Downtown Petaluma SMART station is estimated as 13.3 vehicle-miles traveled per resident, which is less than the threshold value of 16.4 miles. Therefore, the project would result in a ***less-than-significant impact*** on VMT. Since the Base Year model is reflective of 2015 conditions, it does not include the SMART train, which began operations in 2017. The degree to which the presence of SMART train service influences travel behavior and VMT (e.g. reduced VMT per resident for the project) is not well-captured in these estimates. Therefore, the VMT estimates for both the project and threshold values are likely conservative, as discussed in **Chapter 4**.

The Cumulative Plus Project scenario analysis shows that in Year 2040, VMT per resident in the project's TAZ is expected to decrease compared to Existing Plus Project conditions to 8.6 vehicle-miles traveled. Since the cumulative scenario analysis is not considered as part of the CEQA analysis, it is not compared to a threshold value.

6. Site Access, Site Circulation & Multimodal CEQA Analysis

This chapter analyzes site access and internal circulation for vehicles, pedestrians, bicycles, and emergency vehicles based on the site plan presented previously on **Figure 1**. This chapter also presents the findings of the CEQA analysis for non-automobile modes of travel.

Site Access and Site Circulation

Motor Vehicles

The project is located in the center of Petaluma, northeast of downtown. Vehicle access to the site is provided by driveways on Copeland Street. A detailed description the roadways that provide access to the site is provided in **Chapter 2**. The project's two proposed parking garages would be accessed along Copeland Street.

Copeland Street was determined the best location for the garage access points with input from the City, since Copeland Street experiences lower traffic volumes than East Washington Street and East D Street. Sight distances for motorists exiting the proposed garages could be limited by adjacent bus stops when a bus is present.

On-street loading spaces, identified for services to the building such as move-in and garbage services, would be provided on both East D Street and East Washington Street. Per ***Recommendation 1***, the appropriate curb color and signage for these spaces should be determined in coordination with the City Traffic Engineer to accommodate not move-in, garbage services, and other commercial loading activities (e.g., delivery trucks).

> ***Recommendation 1:*** In coordination with the City Traffic Engineer, determine the appropriate curb color and signage for proposed on-street loading spaces on East D Street and East Washington Street (e.g., yellow curb and commercial loading signage). Garbage services and/or tenant move-in should be scheduled for weekdays outside of peak traffic hours (e.g., before 7am or after 7pm) or on weekends when traffic volumes on East D Street and East Washington Street are generally lower.

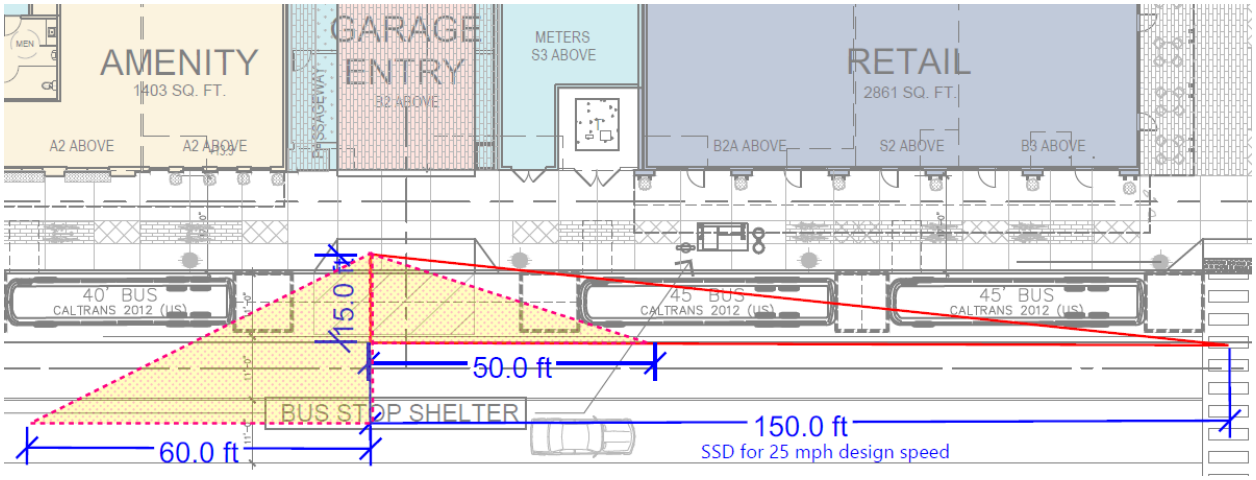
Sight Distance Considerations

As part of our assessment of the proposed site access, we performed a sight distance assessment using criteria from the Caltrans *Highway Design Manual* (HDM) as it pertains for sight distance guidance and requirements. The presence of bus stops along the southern site frontage would present periodic line of sight obstructions between motorists exiting the garage and westbound Copeland Street traffic. Other potential elements that could limit sight distances include tall plantings, but none are proposed as part of the site plan. For this private driveway, Caltrans HDM requires that the Stopping Sight Distance be provided.

Using the 15 feet setback dimension required by the Caltrans HDM calculation of sight distance, only approximately 50 to 60 ft of sight distance would be provided when a bus is present at the bus stop adjacent to the proposed garage access points (see *Inset Figure* below), which corresponds to a design speed of 10 mph.

While adequate stopping sight distance would not be provided, this situation is common to other urban contexts, and in practice, the motorized vehicle existing the garage would be expected to stop at the garage exit, and proceed across the sidewalk once it is clear of pedestrians. As the exiting motorist crosses the sidewalk, their line of sight around a stopped bus increases. The lateral setback from edge of travel way and eye of the exiting motorists eye with the current bus stop location would be about 5 feet (see *Inset Figure*). This means the nose of the exiting vehicle may encroach into the roadway during this maneuver.

Inset Figure 1 – Garage Egress Sight Distance



Therefore, ***Recommendations 2-5*** are proposed below to maintain and increase site distance for motorists exiting the garages. Since vehicle speed is one of the most significant factors influencing the frequency and severity of collisions, encouraging low vehicle speeds on Copeland Street is a key recommendation. ***Recommendation 6*** described below, to consider installing audible warning devices at

garage exits would alert pedestrians along Copeland Street when a vehicle is exiting a garage and help with multimodal circulation.

In general, Copeland Street is anticipated to continue to serve lower vehicle volumes compared to adjacent arterials, and to prioritize transit, people walking and biking, and project-related vehicle trips. The project is anticipated to generate 130 and 169 total vehicle trips during the AM and PM peak hours, respectively – and 95 and 68 vehicle 'out' trips (see **Table 5**). Therefore, during peak hours, approximately 30-50 vehicles are expected to exit from each of the two garages. Based on the existing transit service described in **Chapter 2**, approximately 10 buses serve the Transit Mall during peak hours.

> ***Recommendation 2:*** Coordinate with the City and transit operators to reposition bus stops on Copeland Street to meet industry standards for stopping sight distance for motorists exiting the proposed garages and increase the amount of red painted curb (i.e., 'curb daylighting') adjacent to garage access points.
>
> ***Recommendation 3:*** Coordinate with the City to designate Copeland Street between East Washington Street and East D Street as a "transit priority street," implement traffic calming strategies and/or set a 15-mph speed limit, if consistent with local and state laws, to reduce the speed of traffic. A speed survey may be required to support speed limit setting.
>
> ***Recommendation 4:*** Coordinate with the City and transit operators to site any planned bus layovers at bus stops that are not directly adjacent to garage access points to help maintain sight distances for vehicles exiting the garages.
>
> ***Recommendation 5:*** Design landscaping near garage access points to not obstruct sight distances for vehicle exiting the garages (e.g., do not install street trees or landscaping that could obstruct sight lines).
>
> ***Recommendation 6:*** Consider installing audible warning devices at garage exits to alert pedestrians along Copeland Street when a vehicle is exiting a garage.

Emergency Vehicle Access

Several factors determine whether a project has sufficient access for emergency vehicles, including the number of access points, width of access points, and width of internal roadways. The project can be accessed by emergency vehicles from a number of access points along East Washington Street, East D Street and Copeland Street, which are sufficiently wide to accommodate emergency vehicles. The project does not propose altering the existing roadway network and does not propose new vehicular roadways. The project site is located one-quarter mile away from the nearest fire station, located on D Street in downtown Petaluma.

Public Transit

The project site is well-served by local and regional transit services, since it is adjacent to both the Downtown Petaluma SMART station and the Copeland Street Transit Mall, which serves Petaluma Transit, Sonoma County Transit and Golden Gate Transit bus services. In addition to the Transit Mall, bus stops are also located on East D Street and East Washington Street near the project site (see **Chapter 2** and **Figure 4** for more details on existing transit service).

The project site plan facilitates transit access and connections. In particular, the Transverse Street improves access between the SMART station and Transit Mall by providing a more direct route for people walking and biking.

Along Copeland Street and the Transit Mall, the project proposes 17-foot wide sidewalks, which would accommodate transit shelters, street trees and landscaping, and other pedestrian amenities (e.g. pedestrian scale lighting or garbage cans). The project also proposes siting its retail uses, leasing offices and resident amenity spaces, as well as its two garage access points along Copeland Street. ***Recommendation 4*** noted above, which proposes siting planned bus layovers at bus stops that are not directly adjacent to garage access points would aid in maintaining sight distances for motorists existing the garages, as discussed above.

Bicycle and Pedestrian

Pedestrians and bicyclists can access the site using East D Street, East Washington Street and Copeland Street using mid-block pedestrian entryways or the parking garage entrances. Pedestrians and bicyclists can also access the project on the proposed non-vehicular Transverse Street which bisects the project site. The Transverse Street connects the Downtown Petaluma SMART station with the amenities and crosswalks on Copeland Street and aligns with the Transverse Street extension proposed as part of the Haystack development, located west of the project site.

The project proposes to expand the existing sidewalks directly adjacent to the project site. Sidewalk widths would be increased up to 15 feet in width along East Washington and East D Streets, with certain pinch points narrowing the sidewalks to approximately 12.5 feet and 13.5 feet on East Washington and East D Street, respectively. Along Copeland Street, adjacent to the Transit Center, the project proposes a sidewalk width of 17 feet, which would accommodate transit shelters as well as street trees and landscaping. This would improve conditions for people walking adjacent to the site by increasing the width of the existing 5-6 feet wide sidewalks.

Pedestrians can access the site using crosswalks at the four closest intersections. Each intersection includes crosswalks at each leg of the intersection with the exception of the Lakeville Street/East D Street

intersection, where pedestrians are discouraged from crossing on the south leg of the intersection across the rail tracks via "no sidewalk" signage and the lack of a marked crosswalk. Three of the four closest intersections are currently signalized and Copeland Street/East D Street is controlled by side-street stop signs on Copeland Street and two RRFBs across East D Street, which pedestrians and bicyclists can use when crossing East D Street. Copeland Street/East D Street has been identified for future signalization in the *Central Petaluma Specific Plan (CPSP)*, and a signal warrant analysis for this intersection is discussed in more detail in **Chapter 7**.

One crosswalk currently exists mid-block on Copeland Street, where the Transverse Street is proposed to bisect the roadway, and the site plan proposes marking a second crosswalk at this location to improve pedestrian connectivity between the SMART station and the adjacent Haystack project – and ultimately the Petaluma River by way of the Transverse Street extension proposed as part of the Haystack project. The project also proposes installing two RRFBs at the Copeland Street crossing with the Transverse Street.

Currently, both East Washington Street and East D Street are existing Class III bike routes adjacent to the project site. Lakeville Street has Class II bike lanes near the project site, between the Lakeville Street/US-101 Interchange and East D Street (see **Chapter 2** and **Figure 3** for more details on existing bicycle facilities).

The project proposes installing a westbound (single direction) Class IV separated bicycle facility along the project's East D Street frontage, which would connect to the Class IV facilities proposed by the Haystack project, and an eastbound Class II bicycle lane on the opposite side of the street. The site plan proposes the Class IV facility on East D Street be sited behind the bus stop and garage and loading area on East D Street (in a separate right-of-way) to help minimize potential conflicts between bicyclists, buses, and garbage activities. The project also proposes installing a Class IV separated bikeway along the Transverse Street, which would improve bicycle access for the SMART station.

> ***Recommendation 7:*** Improve crossings directly adjacent to the project site, at the intersections of East D Street, East Washington Street, Lakeville Street, and Copeland Street, to ensure they meet accessibility standards, including ADA accessible curb ramps that are bidirectional and include a detectable warning surface (e.g., truncated domes).
>
> ***Recommendation 8:*** Install high-visibility ladder crosswalks and rectangular rapid flashing beacons (RRFBs) at the proposed mid-block crossings on Copeland Street, and consider installing raised crosswalks or a raised intersection at this location, with input from transit operators regarding geometric configuration, which would also serve as a traffic calming device and discourage through traffic, consistent with ***Recommendation 3***. To promote a reduction in

bicycle-pedestrian conflicts in the crosswalk, use a crosswalk/crossbike treatment[15] for the southern crosswalk at the mid-block crossing.

Recommendation 9: Design bus stop and garbage/loading facility on East D Street to reduce potential conflicts with proposed Class IV bikeway.

Recommendation 10: Coordinate with the City and adjacent developments (e.g., Haystack) to install pedestrian/bicycle wayfinding signage to indicate suggested paths of travel to/from the SMART station (e.g., along the Transverse Street).

Parking

The project proposes two parking structures, one in each of the two buildings, which would be accessed on Copeland Street. The project proposes a total of 622 vehicle parking spaces, which represent a parking ratio of approximately 1.5 vehicles per residential unit, or one parking space per bedroom. Sixty-two spaces are proposed as designated electric vehicle spaces. The project also proposes a car share program for residents.

The SmartCode requires a minimum of 407 vehicle parking spaces – one space per market-rate residential unit, 0.5 spaces per affordable residential unit, and two spaces per 1,000 square feet of retail area. The project provides 215 spaces beyond the minimum parking requirement.

There is no on-street parking proposed adjacent to the project site on East Washington, East D Street or Copeland Street.

The project also proposes providing 152 bicycle parking spaces, 108 of which will be located in secure bicycle rooms, which exceeds the required 41 bicycle parking spaces. Two bicycle parking rooms are proposed – one accessible on East D Street, and one accessible on East Washington Street.

Recommendation 10: Include bicycle repair stations in secure bicycle rooms consistent with *2008 Petaluma Bicycle and Pedestrian Plan*.

Other CEQA Topics

This section describes the project's impact on the following topics, based on the significance criteria described in **Chapter 3**: hazards and emergency access, transit, bicycle and pedestrian, and construction.

[15] Crosswalk/crossbike treatment conceptual example: https://streetsillustrated.seattle.gov/wp-content/uploads/2017/01/B27_Intersection-crossbike-01.jpg. Final design should confirm to City standards and be approved by City Engineer.

Hazards and Emergency Access

This section describes the project's impacts related hazards and emergency access. Based on the discussion in the previous sub-section, the project would not affect emergency access. Therefore, Therefore, the proposed project would have a ***less than significant*** impact on emergency access.

As discussed in the previous section, adequate sight distance for motorists exiting the garage would not be provided periodically when a bus is present at the stop adjacent to the proposed garage access points, as shown in the proposed site plan. Periodic obstruction of sight distances would present a potential hazard for motorists exiting the garages. Therefore, the proposed project would result in a ***significant*** impact related to hazardous conditions for motorists exiting the garages. Mitigation Measures are set forth below to reduce this significant impact to a less than significant level.

Mitigation Measure 1: Sight Distance Improvement Recommendations for Motorists Exiting Garages

While a significant impact related to hazards is identified as the project is currently designed, this impact could be mitigated by implementing the following strategies to improve sight distances for motorists exiting the proposed garages:

- Bus stop positioning: Coordinate with the City and transit operators to reposition bus stops on Copeland Street to meet industry standards for stopping sight distance for vehicles exiting the proposed garages and increase the amount of red painted curb (i.e., 'curb daylighting') adjacent to garage access points.
- Transit priority & traffic calming measures: Coordinate with the City to designate Copeland Street between East Washington Street and East D Street as a "transit priority street," implement traffic calming strategies and/or set a 15-mph speed limit, if consistent with local and state laws, to reduce the speed of traffic. A speed survey may be required to support speed limit setting.
- Bus layovers siting: Coordinate with the City and transit operators to site any planned bus layovers at bus stops that are not directly adjacent to garage access points to help maintain sight distances for vehicles exiting the garages.
- Landscaping: Design landscaping near garage access points to not obstruct sight distances for vehicle exiting the garages (e.g., do not install street trees or landscaping that could obstruct sight lines).

Significance after Mitigation: Implementation of **Mitigation Measure 1** would reduce the project's significant impact related to hazards to a ***less than significant*** level.

Public Transit

Based on the site access and circulation evaluation in the previous section, the project does not propose elements that would impact access to transit facilities or affect current transit service. The project is anticipated to generate demand for 101 daily transit trips, and less than 10 transit trips during AM and PM peak hours (see **Table 5**); these trips would be spread across SMART and local and regional bus services, which would not represent a significant increase in transit patronage for any one transit service or route. The project supports the goals of the City of Petaluma *2025 General Plan* and would improve access to the SMART station for people walking and biking via the proposed Transverse Street. Therefore, the proposed project would have a ***less than significant*** impact on transit facilities and access.

Mitigation Measures: No mitigation measures are required.

Bicycle and Pedestrian System

Based on the access & circulation evaluation in the previous section, the proposed project would generally improve conditions for pedestrian and bicyclists at and adjacent to the project site by expanding sidewalk widths on East Washington Street, East D Street and Copeland Street, installing new bicycle facilities on East D Street, and implementing the Transverse Street. Implementation of ***Recommendations 6-10*** described in the previous section would further improve pedestrian/bicycle facilities and/or access.

Overall, the project would not cause unsafe pedestrian and/or bicycle traffic flow patterns, exacerbate currently unsafe pedestrian and/or bicycle condition within the area, or restrict or compromise pedestrian and/or bicycle flows within the area. The project supports the goals of the City of Petaluma *2025 General Plan* and provides good pedestrian and bicycle linkages internal to the project and connecting to adjacent facilities through the proposed expanded sidewalks, new bike facilities, and the Transverse Street noted above.

The project also proposes providing 152 bicycle parking spaces (108 in secure bicycle rooms), which exceeds the required 41 bicycle parking spaces. Implementation of ***Recommendation 10*** presented in the previous section would ensure the project is consistent with the recommendations set forth in the *2008 Petaluma Bicycle and Pedestrian Plan*.

Therefore, the proposed project would have a **less than significant impact** on bicycle and pedestrian facilities and access.

Mitigation Measures: No mitigation measures are required.

Temporary Construction Impacts

Construction of the project would have a significant effect on the environment if it would require a substantially extended duration or intense activity and the effects would disrupt emergency access or accessibility for people traveling on the surrounding roadway network. Project construction is anticipated to occur over a duration of approximately 32 months. Construction phasing is anticipated to be minimal, with one building being constructed first, following the second building. Construction activities would be required to comply with applicable City construction standards.

Some grading, soil evacuation, and fill activities are anticipated, which will result in an import of approximately 4,000 cubic yards of soil to the site. This would require approximately 225 truck haul-trips on regional roads over the course of the project's construction; these truck trips would be distributed over the course of these activities and, therefore, would not have a substantial effect on the roadway network.

Construction of improved sidewalks, curbs, and street improvements is anticipated to occur in the East Washington Street, East D Street, and Copeland Street rights-of-way. Some temporary construction staging activities may also be required in these rights-of-way; however, staging would generally be focused within the project site and/or on the Transverse Street, to minimize impacts on adjacent streets. Temporary closures of transportation facilities, including sidewalks, travel lanes, transit facilities, or bike lanes, would require approval by the City of Petaluma to ensure construction activities do not substantially interfere with access to the SMART station and Copeland Transit Mall for the duration of construction.

Traffic generated by construction workers and trucks would occur primarily during off-peak times, and the City and emergency services would be notified of any roadway restrictions, alternative emergency routes, and detours due to construction. Nonetheless, additional heavy vehicle traffic would be added to the street network in the vicinity of the project site, and the proposed project would have the potential to result in potentially significant temporary impacts on the transportation network during construction, such as the effect of slow moving trucks and lane closures on disrupting emergency access or accessibility for people traveling on the surrounding roadway network, or damage to road pavement from truck movement. Mitigation Measures are set forth below to reduce this ***potentially significant*** impact to a less than significant level.

Mitigation Measure 2: Construction Management Plan

A construction management plan shall be prepared for review and approval by the City of Petaluma Public Works Department. In addition, activities that would potentially affect transit operations at the Copeland Street Transit Mall should be reviewed by local and regional transit agencies, as needed. The plan shall include at least the following items:

a) Development of a construction truck route that would appear on all construction plans to limit truck and auto traffic on nearby streets.
b) Comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures if required, sidewalk closure procedures if required, cones for drivers, and designated construction access routes.
c) Evaluation of the need to provide flaggers or temporary traffic control at key intersections along the truck route(s).
d) Notification procedures for adjacent property owners and public safety personnel regarding schedules when major deliveries, detours, and lane closures would occur.
e) Location of construction staging areas for materials, equipment, and vehicles if there is insufficient staging area within the work zone of the proposed project.
f) Identification of truck routes for movement of construction vehicles that would minimize impacts on vehicular and pedestrian traffic, circulation and safety; provision for monitoring surface streets used for truck movement so that any damage and debris attributable to the proposed project's construction trucks can be identified and corrected by the proposed project applicant.
g) A process for responding to and tracking complaints pertaining to construction activity, including identification of an on-site complaint manager.
h) Documentation of road pavement conditions for all routes that would be used by construction vehicles both before and after proposed project construction. Roads found to have been damaged during construction shall be repaired to the level at which they existed prior to construction of the proposed project.

Significance after Mitigation: Implementation of **Mitigation Measure 2** would reduce the temporary construction impacts of the proposed project to a **less-than-significant** level.

7. Intersection Operations Analysis

This chapter presents the results of the informational (non-CEQA) intersection operations analysis conducted for the project.

Existing Intersection Operations

Study intersections, listed in **Chapter 2** (see **Table 1** and **Figure 2**), were analyzed to determine Existing conditions LOS. Existing intersection lane configurations, signal timings, and peak hour turning movement volumes were used to calculate the levels of service for the study intersections during the AM and PM peak hours, using the methods described in **Chapter 4**. These levels of service are presented in **Table 7** (presented on the next page). Detailed intersection LOS calculation worksheets are presented in **Appendix A**.

One study intersection, Copeland Street/East D Street, which is side-street stop-controlled, was found to operate below the City's LOS standard of LOS D; the worst side street approach was analyzed as LOS F during the PM peak hour. However, this intersection likely performs better in real-world conditions as drivers on East D Street periodically let vehicles from Copeland Street enter East D Street – especially during congested periods (e.g., the PM peak hour) when vehicle speeds on East D Street are reduced as a result of traffic congestion.

Peak Hour Signal Warrants

The Peak Hour Signal Warrant (Warrant 3B in the California Manual on Uniform Traffic Control Devices) was reviewed at unsignalized study intersections that operate below the City's LOS D standard. Detailed signal warrant worksheets are presented in **Appendix C**. The Peak Hour Signal Warrant is met at Copeland Street/East D Street based on existing traffic volumes.[16] This intersection has also been identified for future signalization in the *Central Petaluma Specific Plan*.

[16] Unsignalized intersection warrant analysis is intended to examine the general correlation between existing conditions and the need to install new traffic signals. Existing peak-hour volumes are compared against a subset of the standard traffic signal warrants recommended in the Manual on Uniform Traffic Control Devices (MUTCD) and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely on the warrants because the installation of signals can lead to certain types of collisions. The responsible State or local agency should undertake regular monitoring of actual traffic conditions and accident data and conduct a timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

Table 7: Existing Conditions Peak Hour Intersection LOS Summary

Intersection	Analysis Software[1]	Intersection Control[2]	Peak Hour[3]	Delay[4,5]	LOS
1. Lakeville Street/ East Washington Street	SimTraffic	Signal	AM PM	38 48	D D
2. Lakeville Street/East D Street	SimTraffic	Signal	AM PM	45 53	D D
3. Lakeville Street/Caulfield Lane	Synchro	Signal	AM PM	21 30	C C
4. East Washington Street/ US-101 Northbound Ramps	Synchro	Signal	AM PM	10 15	A B
5. East Washington Street/ US-101 Southbound Ramps	Synchro	Signal	AM PM	31 32	C C
6. East Washington Street/ Ellis Street	Synchro	Signal	AM PM	18 31	B C
7. East Washington Street/ Payran Street	Synchro	Signal	AM PM	28 33	C C
8. East Washington Street/ Copeland Street	SimTraffic	Signal	AM PM	14 24	B C
9. East Washington Street/ Petaluma Boulevard South	Synchro	Signal	AM PM	46 43	D D
10. East D Street/Copeland Street	SimTraffic	SSSC[2,5]	AM PM	5 (35) 13 **(79)**	A (D) B **(F)**
11. East D Street/ Petaluma Boulevard South	Synchro	Signal	AM PM	26 48	C D
12. East D Street/First Street	Synchro	Signal	AM PM	12 13	B B

Notes:
1. See *Chapter 4 Analysis Approach* for more details on analysis software used for study intersections.
2. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled)
3. AM = Weekday morning peak hour; PM = Weekday evening peak hour
4. Delay calculated per HCM 6th Edition methodologies.
5. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay).
Bold indicates LOS E or LOS F operations.
Source: Fehr & Peers, September 2020.

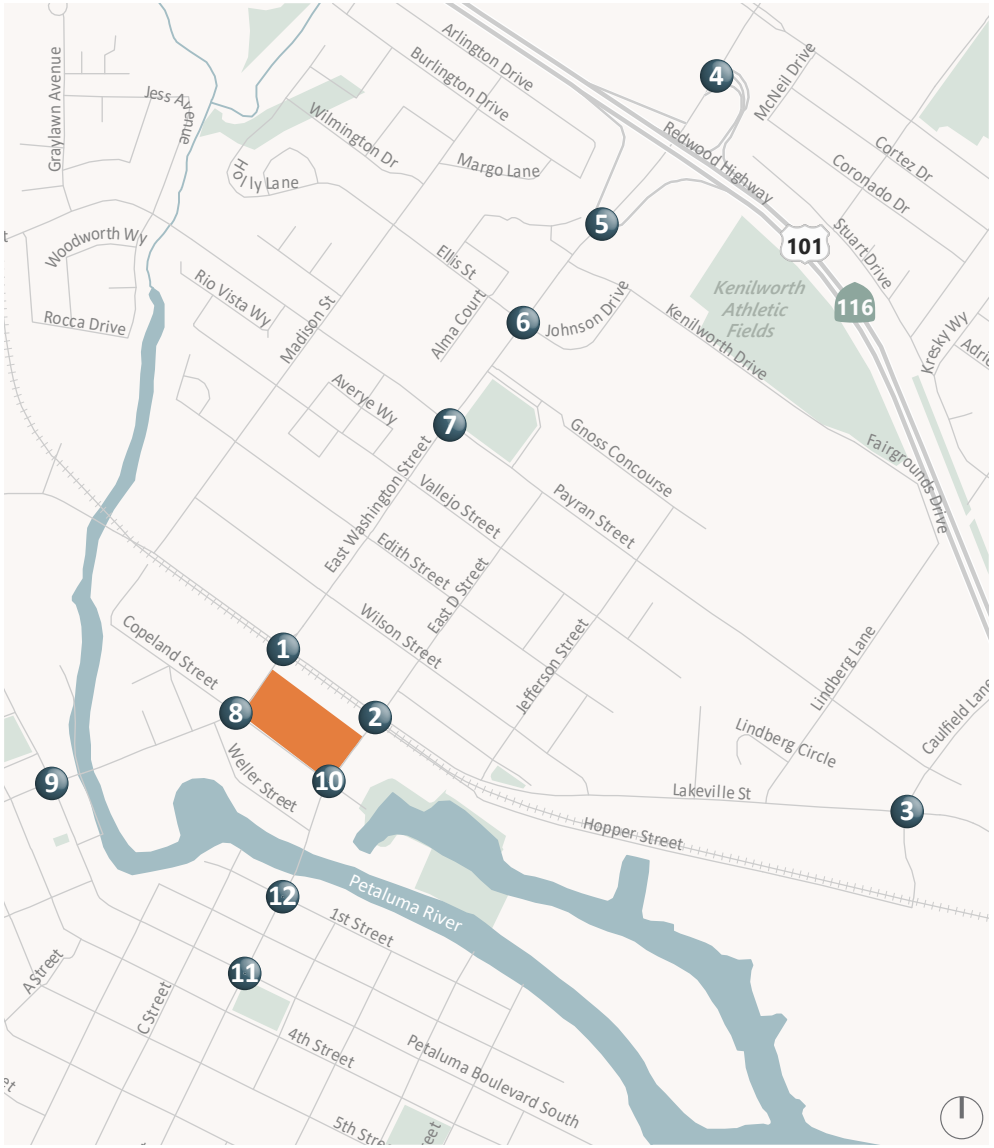
Existing Plus Project Intersection Operations

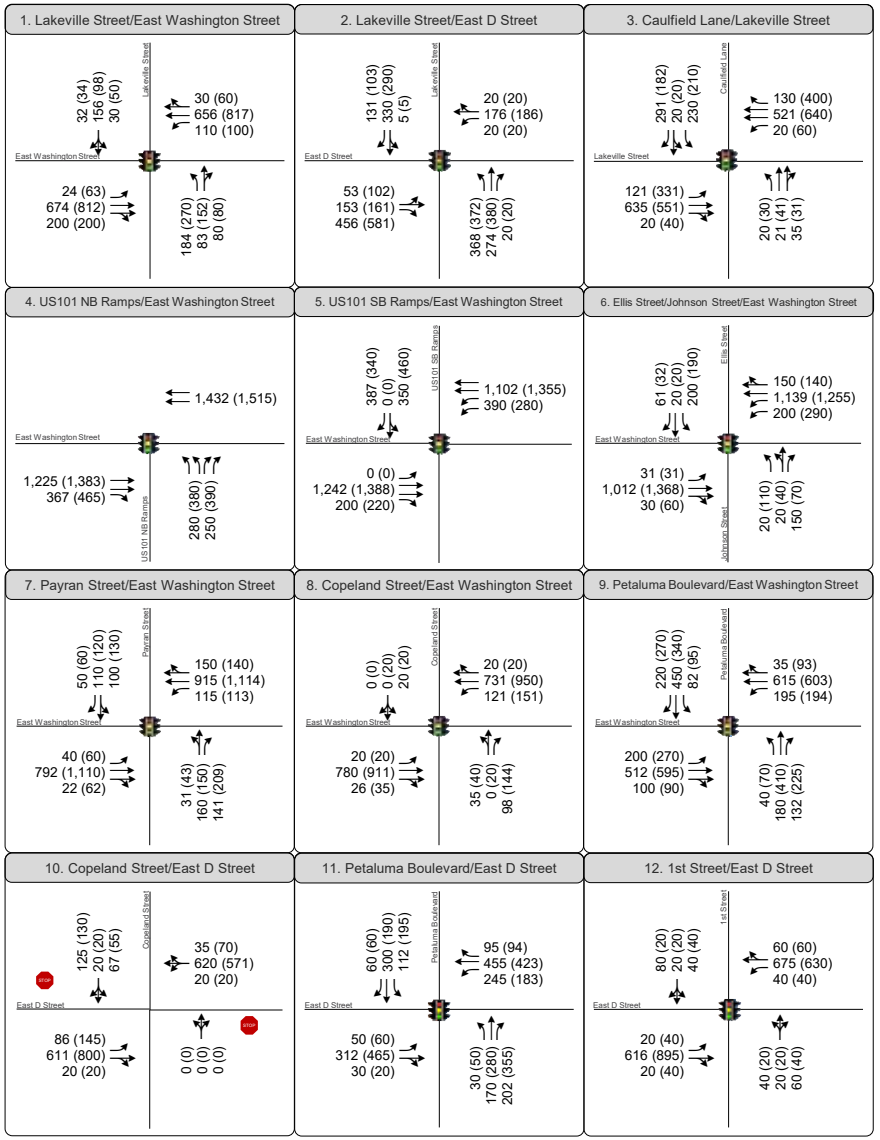
Intersections were evaluated under Existing Plus Project conditions using the methods described in **Chapter 4**. The project traffic volumes presented in **Figure 8** were added to the existing traffic volumes presented in **Figure 5** to estimate the Existing Plus Project traffic volumes, as shown on **Figure 9.** The Existing Plus Project analysis results are presented in **Table 8**, based on the traffic volumes and intersection configurations presented on **Figure 9**.

Table 8: Existing Plus Project Conditions Peak Hour Intersection LOS Summary

Intersection	Analysis Software[1]	Intersection Control[2]	Peak Hour[3]	Existing Conditions		Existing Plus Project Conditions	
				Delay[4,5]	LOS	Delay[4,5]	LOS
1. Lakeville Street/ East Washington Street	SimTraffic	Signal	AM PM	38 48	D D	41 54	D D
2. Lakeville Street/ East D Street	SimTraffic	Signal	AM PM	45 53	D D	45 **79**	D **E**
3. Lakeville Street/ Caulfield Lane	Synchro	Signal	AM PM	21 30	C C	21 30	C C
4. East Washington Street/ US-101 Northbound Ramps	Synchro	Signal	AM PM	10 15	A B	9 14	A B
5. East Washington Street/ US-101 Southbound Ramps	Synchro	Signal	AM PM	31 32	C C	30 32	C C
6. East Washington Street/ Ellis Street	Synchro	Signal	AM PM	18 31	B C	17 30	B C
7. East Washington Street/ Payran Street	Synchro	Signal	AM PM	28 33	C C	28 34	C C
8. East Washington Street/ Copeland Street	SimTraffic	Signal	AM PM	14 24	B C	17 22	B C
9. East Washington Street/ Petaluma Boulevard South	Synchro	Signal	AM PM	46 43	D D	45 43	D D
10. East D Street/ Copeland Street	SimTraffic	SSSC[2,5]	AM PM	5 (35) 13 **(79)**	A (D) B **(F)**	11 **(72)** 33 **(>150)**	B **(F)** D **(F)**
11. East D Street/ Petaluma Boulevard South	Synchro	Signal	AM PM	26 48	C D	25 47	C D
12. East D Street/First Street	Synchro	Signal	AM PM	12 13	B B	12 12	B B

Notes:
1. See *Chapter 4 Analysis Approach* for more details on analysis software used for study intersections.
2. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled)
3. AM = Weekday morning peak hour; PM = Weekday evening peak hour
4. Delay calculated per HCM 6th Edition methodologies.
5. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay).
Bold indicates LOS E or LOS F operations.
Source: Fehr & Peers, September 2020.





XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 9

Existing Plus Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

The addition of project traffic would generally result in a marginal increase in delay at most study intersections during both time periods studied, with the exception of the Lakeville Street/East D Street and Copeland Street/East D Street intersections, where implementation of the project results in **adverse effects** on intersection operations.

Average delay during the PM peak period at Lakeville Street/East D Street is expected to increase during the PM peak period, with operations degrading from LOS D under Existing conditions to LOS E under Existing Plus Project conditions.

Side street delay for the worst approach at the two-way stop-controlled Copeland Street/East D Street intersection is expected to increase during the AM peak hour, with operations degrading from LOS D under Existing conditions to LOS F under Existing Plus Project conditions. This intersection is anticipated to continue operating at LOS F during the PM peak hour similar to Existing conditions. As noted previously, this intersection is likely to operate better in the field as vehicles on East D Street periodically let vehicles in from the side streets more frequently than assumed by the traffic simulation software.

Potential traffic operations improvement measures to improve the adverse effect of the project on the Lakeville Street/East D Street and Copeland Street/East D Street intersections are discussed at the end of this chapter.

Peak Hour Signal Warrants

The Peak Hour Signal Warrant (Warrant 3B in the California Manual on Uniform Traffic Control Devices) was reviewed at the unsignalized study intersections that operate deficiently with respect to the City's LOS D standard. Since the Peak Hour Signal Warrant is met at Copeland Street/East D Street based on Existing traffic volumes, it is also met based on Existing Plus Project traffic volumes.

Pipeline Traffic Conditions

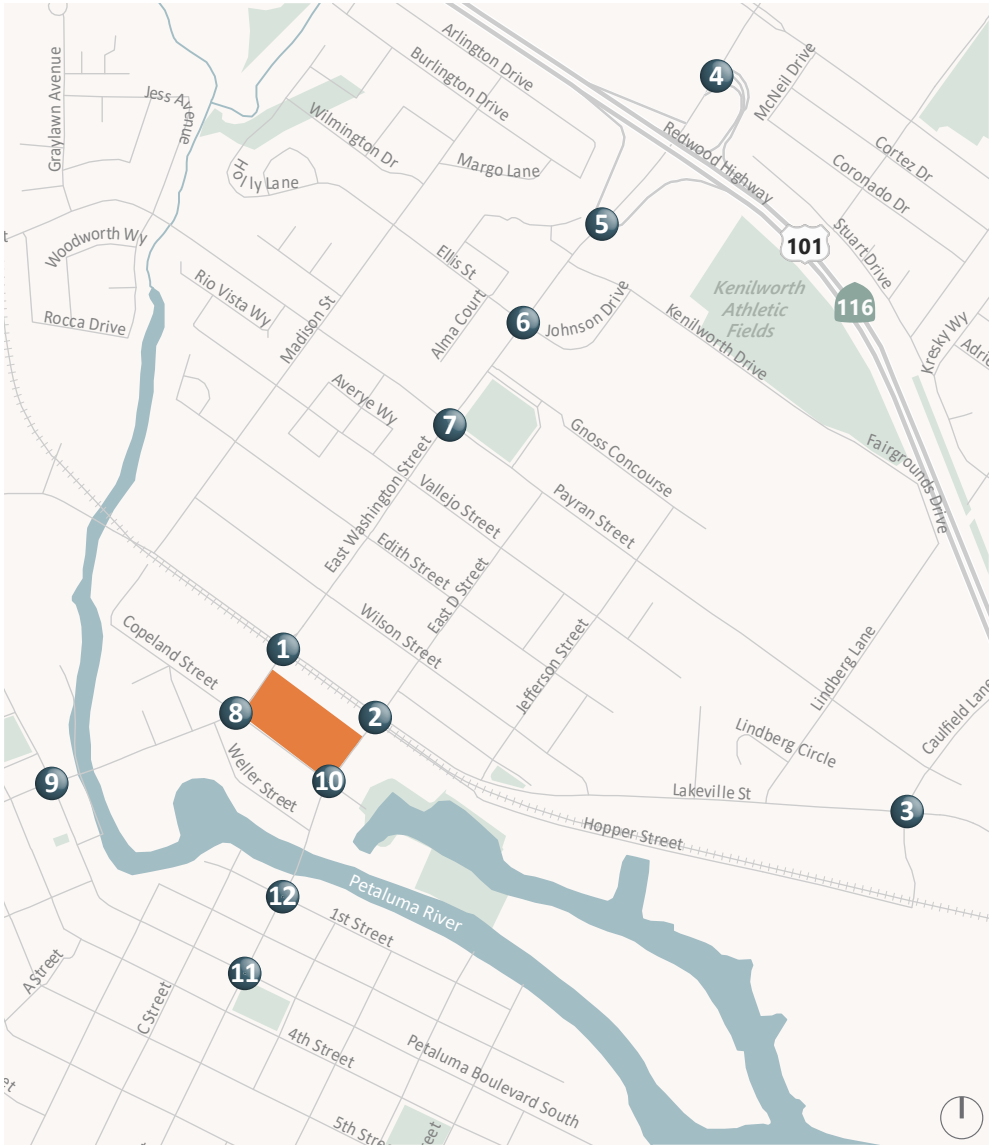
This section discusses Pipeline traffic conditions both without and with the project (i.e. Pipeline No Project and Pipeline Plus Project). As described in **Chapter 4**, the Pipeline conditions analysis considers approved projects within the study area that are reasonably anticipated to be constructed and occupied in the next five to ten years (see **Table 4** and **Figure 6** for more details).

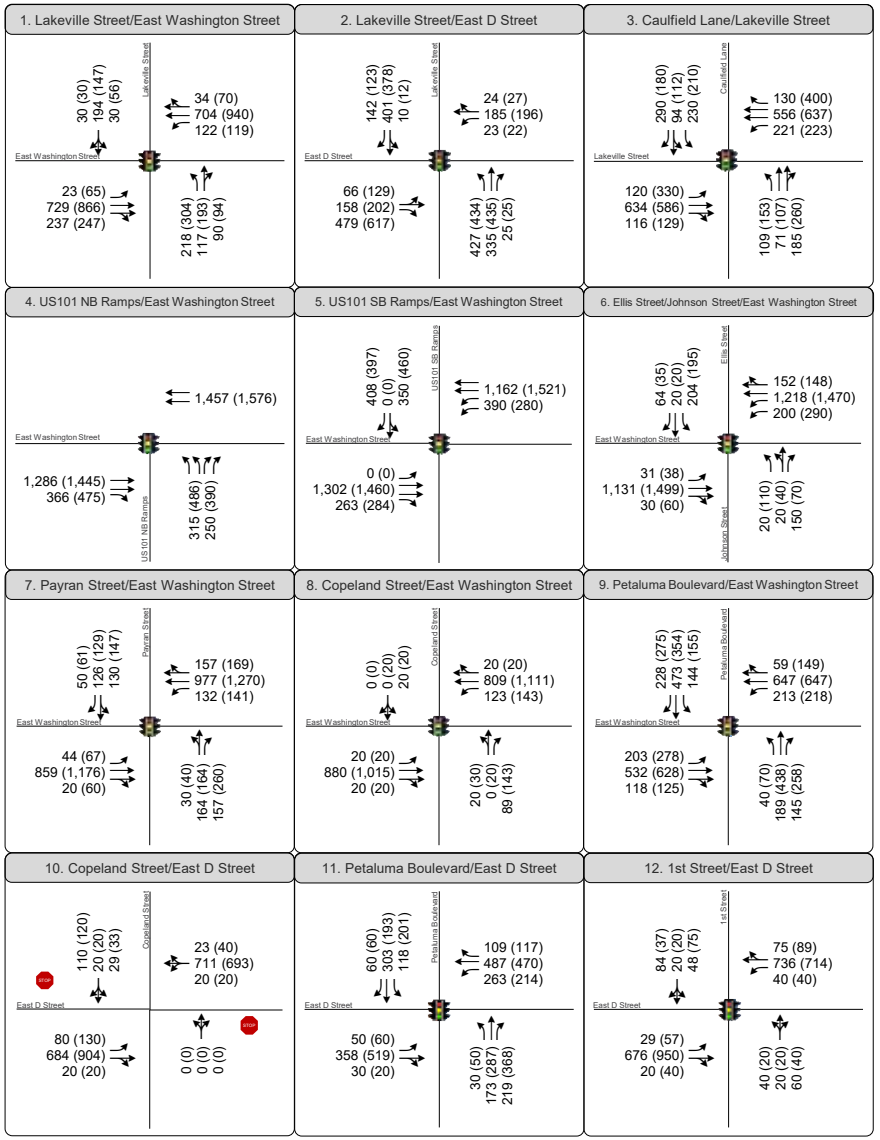
Pipeline conditions without and with the project were evaluated using the methods described in **Chapter 4**. The analysis results are presented in **Table 9**, based on the traffic volumes and lane configurations presented on **Figure 10** and **Figure 11.** For the analysis of Pipeline conditions, peak hour factors, signal timings, pedestrian and bicycle volumes, and heavy vehicle percentages remain consistent with existing conditions.

Table 9: Pipeline Conditions Peak Hour Intersection LOS Summary

Intersection	Analysis Software[1]	Control[2]	Peak Hour[3]	Pipeline No Project Conditions		Pipeline Plus Project Conditions	
				Delay[4,5]	LOS	Delay[4,5]	LOS
1. Lakeville Street/East Washington Street	SimTraffic	Signal	AM PM	**74** **123**	**E** **F**	**78** **150**	**E** **F**
2. Lakeville Street/East D Street	SimTraffic	Signal	AM PM	**76** **139**	**E** **F**	**86** **>150**	**F** **F**
3. Lakeville Street/Caulfield Lane	Synchro	Signal	AM PM	29 43	C D	30 45	C D
4. East Washington Street/US-101 Northbound Ramps	Synchro	Signal	AM PM	10 17	B B	10 17	B B
5. East Washington Street/US-101 Southbound Ramps	Synchro	Signal	AM PM	30 35	C C	30 37	C D
6. East Washington Street/Ellis Street	Synchro	Signal	AM PM	18 33	B C	18 33	B C
7. East Washington Street/Payran Street	Synchro	Signal	AM PM	31 43	C D	32 45	C D
8. East Washington Street/Copeland Street	SimTraffic	Signal	AM PM	38 **106**	D **F**	53 **110**	D **F**
9. East Washington Street/Petaluma Boulevard South	Synchro	Signal	AM PM	48 51	D D	49 52	D D
10. East D Street/Copeland Street	SimTraffic	SSSC[2,5]	AM PM	13 (**107**) **51** (**>150**)	B (**F**) **F** (**F**)	**29** (**>150**) **53** (**>150**)	**D** (**F**) **F** (**F**)
11. East D Street/Petaluma Boulevard South	Synchro	Signal	AM PM	26 50	C D	26 50	C D
12. East D Street/First Street	Synchro	Signal	AM PM	18 17	B B	18 17	B B

Notes:
1. See *Chapter 4 Analysis Approach* for more details on analysis software used for study intersections.
2. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled)
3. AM = Weekday morning peak hour; PM = Weekday evening peak hour
4. Delay calculated per HCM 6th Edition methodologies.
5. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay).
Bold indicates LOS E or LOS F operations.
Source: Fehr & Peers, September 2020.

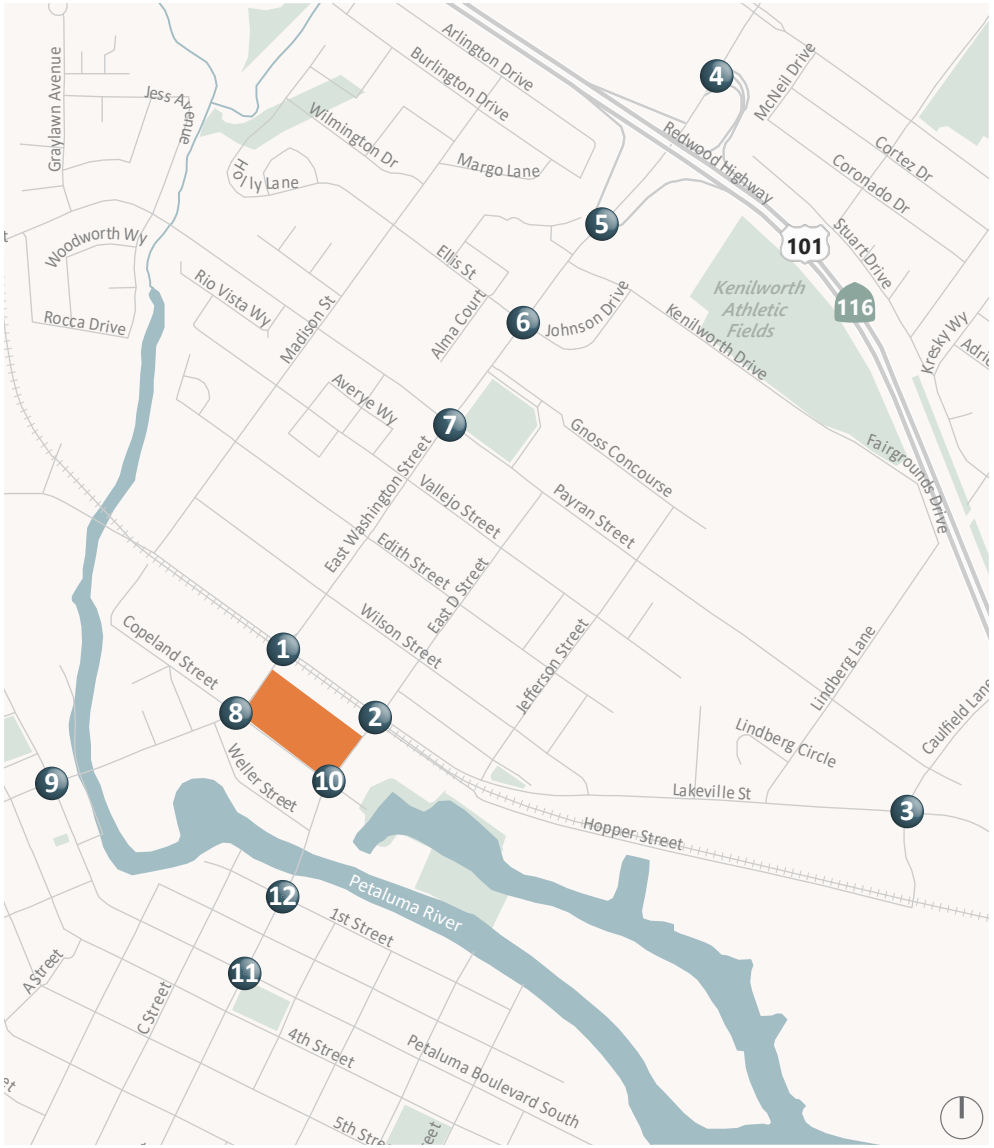


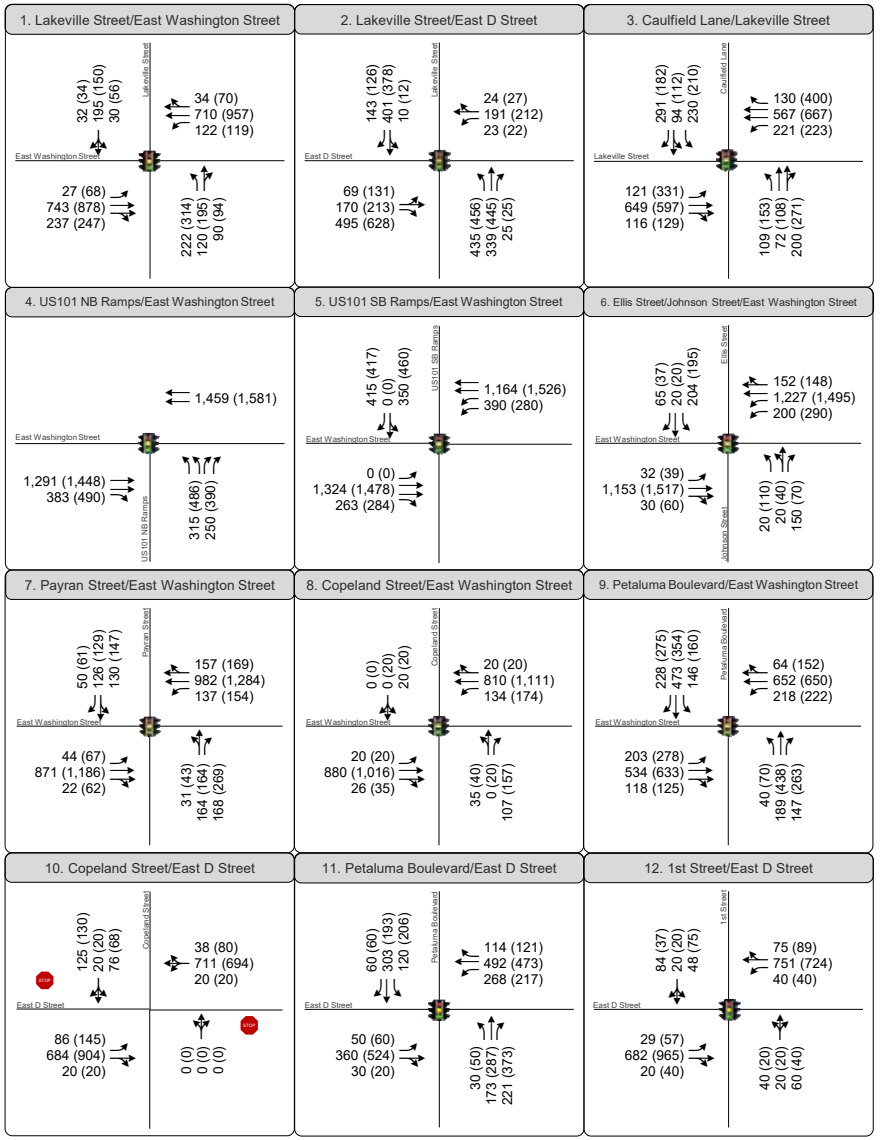


XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 10

Pipeline No Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Control





XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 11

Pipeline Plus Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

Under Pipeline No Project conditions, operations of the following study intersections are projected to degrade to LOS E or F, prior to the addition of project traffic:

- Lakeville Street/East Washington Street (*AM peak hour: LOS E; PM peak hour: LOS F*)
- Lakeville Street/East D Street (*AM peak hour: LOS E; PM peak hour: LOS F*)
- Copeland Street/East Washington Street (*PM peak hour: LOS F*)
- Copeland Street/East D Street (*AM and PM peak hours: LOS F for worst stop-controlled approach*)

The project would result in **adverse effects** on the following study intersections, which already operate at LOS F during at least one of the peak hours studied under Pipeline No Project conditions:

- Lakeville Street/East Washington Street *(PM peak hour)*
- Lakeville Street/East D Street *(AM and PM peak hour)*
- Copeland Street/East Washington Street *(PM peak hour)*
- Copeland Street/East D Street *(AM and PM peak hours)*

All other intersections are projected to operate at LOS D or better under Pipeline conditions, even with the addition of project traffic.

Potential traffic operations improvement measures to improve the adverse effect of the project on the Lakeville Street/East Washington Street, Lakeville Street/East D Street, Copeland Street/East Washington Street, and Copeland Street/East D Street intersections are discussed at the end of this chapter.

Peak Hour Signal Warrants

The Peak Hour Signal Warrant (Warrant 3B in the California Manual on Uniform Traffic Control Devices) was reviewed at the unsignalized study intersections that operate deficiently with respect to the City's LOS D standard. Since the Peak Hour Signal Warrant is met at Copeland Street/East D Street based on Existing traffic volumes, it is also met based on Pipeline and Pipeline Plus Project traffic volumes. Further discussion of potential improvements for this intersection is included on page 73.

Cumulative Traffic Conditions

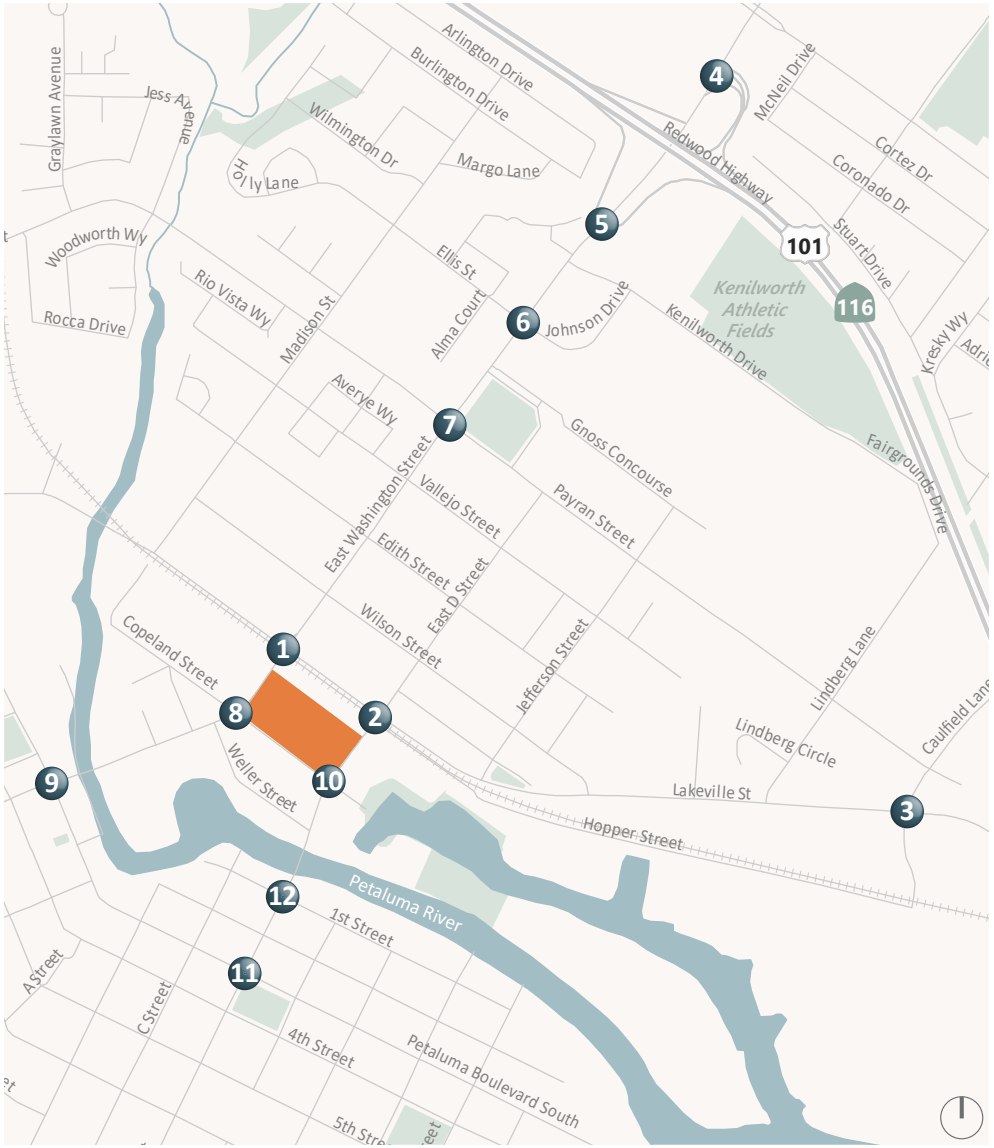
This section discusses Cumulative traffic conditions both without and with the project. The future conditions analysis considers development within the City of Petaluma as described in the *2025 General Plan*, as described in **Chapter 4**. Cumulative conditions without and with the project (i.e. Cumulative No Project and Cumulative Plus Project conditions) were evaluated using the methods described in **Chapter 4**.

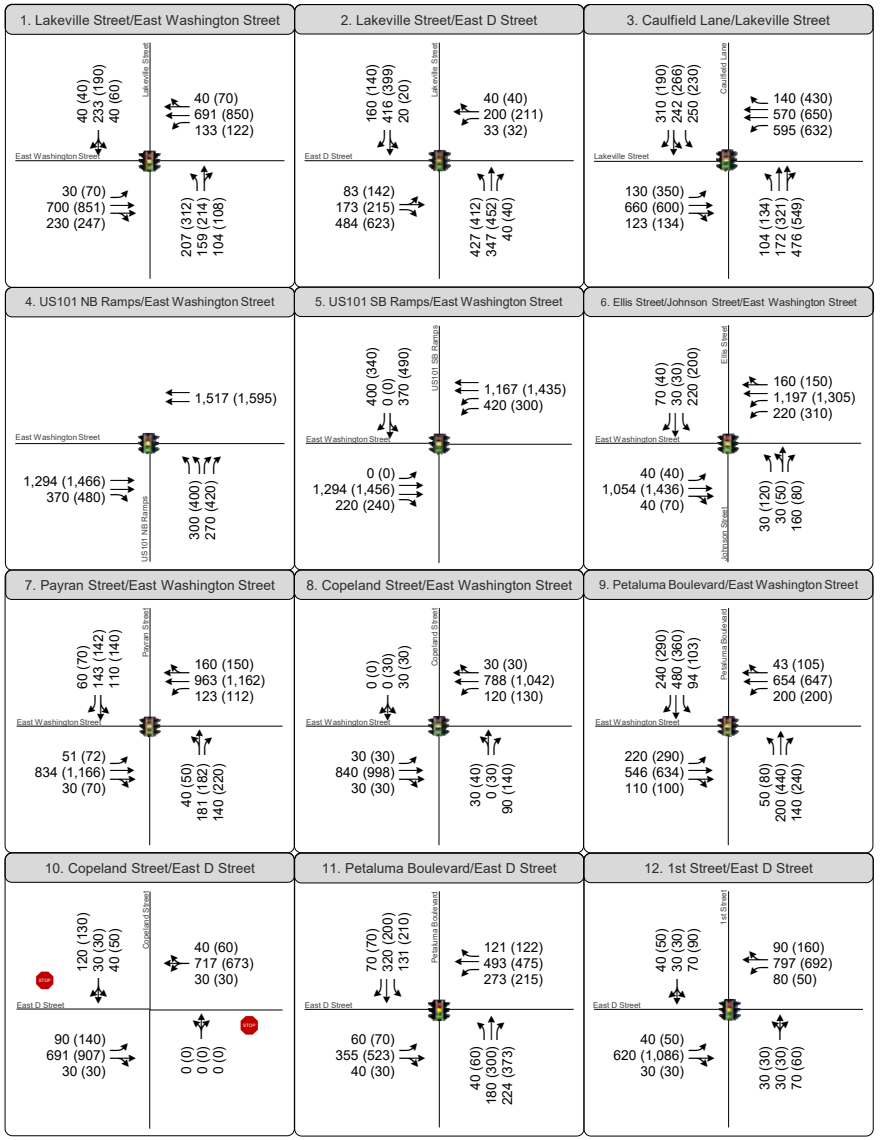
The analysis results are presented in **Table 10** (presented on the next page), based on traffic volumes presented on **Figure 12** and **Figure 13**. For the analysis of cumulative conditions, peak hour factors, pedestrian and bicycle volumes, and heavy vehicle percentages were left unchanged. To better account for changed traffic volumes, signal timing cycles and splits were optimized reflecting that the City of Petaluma routinely monitors and updates traffic signal timings along key corridors.

Table 10: Cumulative Conditions Peak Hour Intersection LOS Summary

Intersection	Analysis Software[1]	Intersection Control[2]	Peak Hour[3]	Cumulative Conditions		Cumulative Plus Project Conditions	
				Delay[4,5]	LOS	Delay[4,5]	LOS
1. Lakeville Street/East Washington Street	SimTraffic	Signal	AM PM	**83** **93**	**F** **F**	**95** **85**	**F** **F**
2. Lakeville Street/East D Street	SimTraffic	Signal	AM PM	**125** **124**	**F** **F**	**125** **>150**	**F** **F**
3. Lakeville Street/Caulfield Lane	Synchro	Signal	AM PM	**>150** **143**	**F** **F**	**>150** **146**	**F** **F**
4. East Washington Street/US-101 Northbound Ramps	Synchro	Signal	AM PM	7 9	A A	7 9	A A
5. East Washington Street/US-101 Southbound Ramps	Synchro	Signal	AM PM	37 44	D D	38 45	D D
6. East Washington Street/Ellis Street	Synchro	Signal	AM PM	30 40	C D	30 40	C D
7. East Washington Street/Payran Street	Synchro	Signal	AM PM	47 53	D D	47 54	D D
8. East Washington Street/Copeland Street	SimTraffic	Signal	AM PM	25 **75**	C **E**	32 **85**	C **F**
9. East Washington Street/Petaluma Boulevard South	Synchro	Signal	AM PM	52 41	D D	53 42	D D
10. East D Street/Copeland Street	SimTraffic	SSSC[2,5]	AM PM	**45 (>150)** **50 (>150)**	**E (F)** **E (F)**	**40 (>150)** **56 (>150)**	**E (F)** **E (F)**
11. East D Street/Petaluma Boulevard South	Synchro	Signal	AM PM	28 51	C D	28 52	C D
12. East D Street/First Street	Synchro	Signal	AM PM	14 41	B D	14 43	B D

Notes:
1. See *Chapter 4 Analysis Approach* for more details on analysis software used for study intersections.
2. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled)
3. AM = Weekday morning peak hour; PM = Weekday evening peak hour
4. Delay calculated per HCM 6th Edition methodologies.
5. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay).
Bold indicates LOS E or LOS F operations.
Source: Fehr & Peers, September 2020.

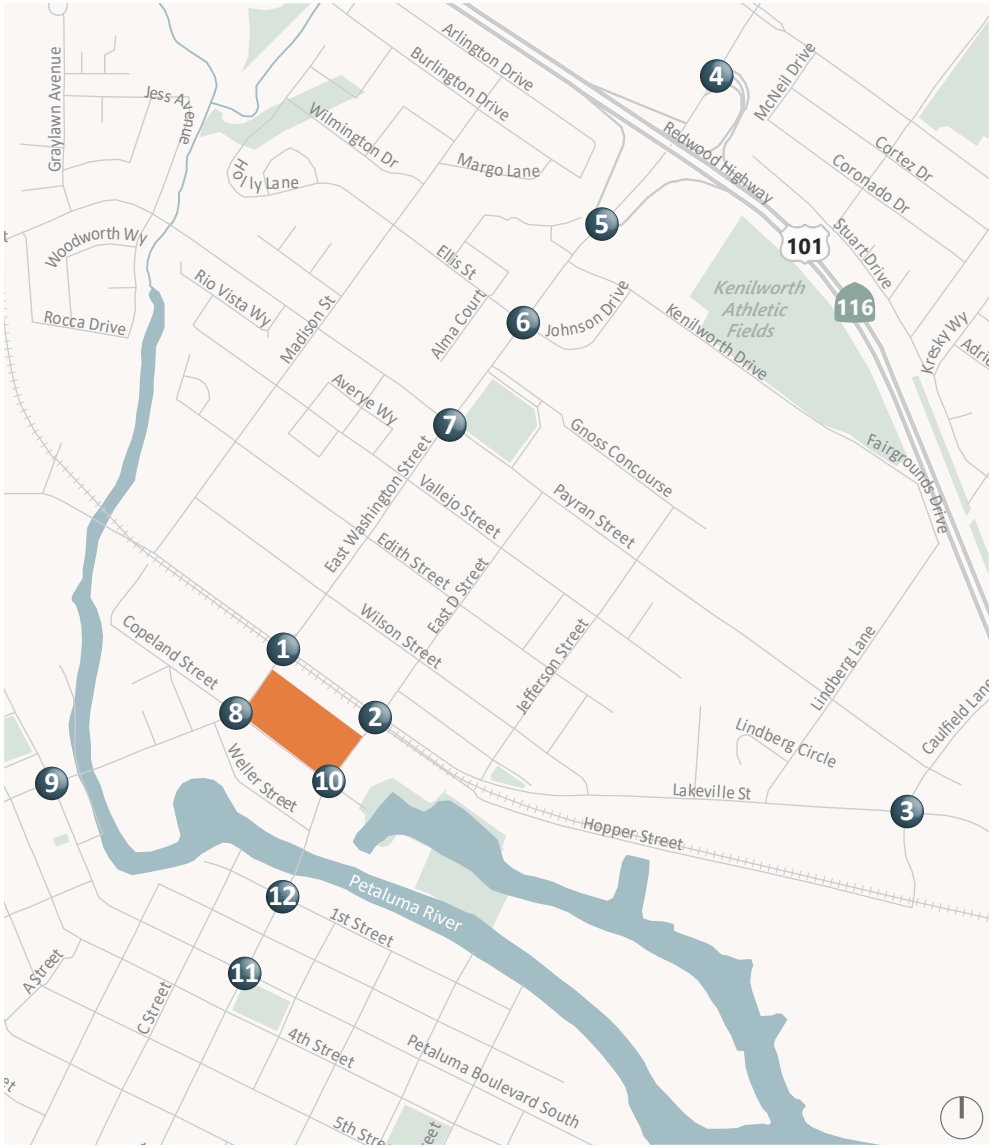


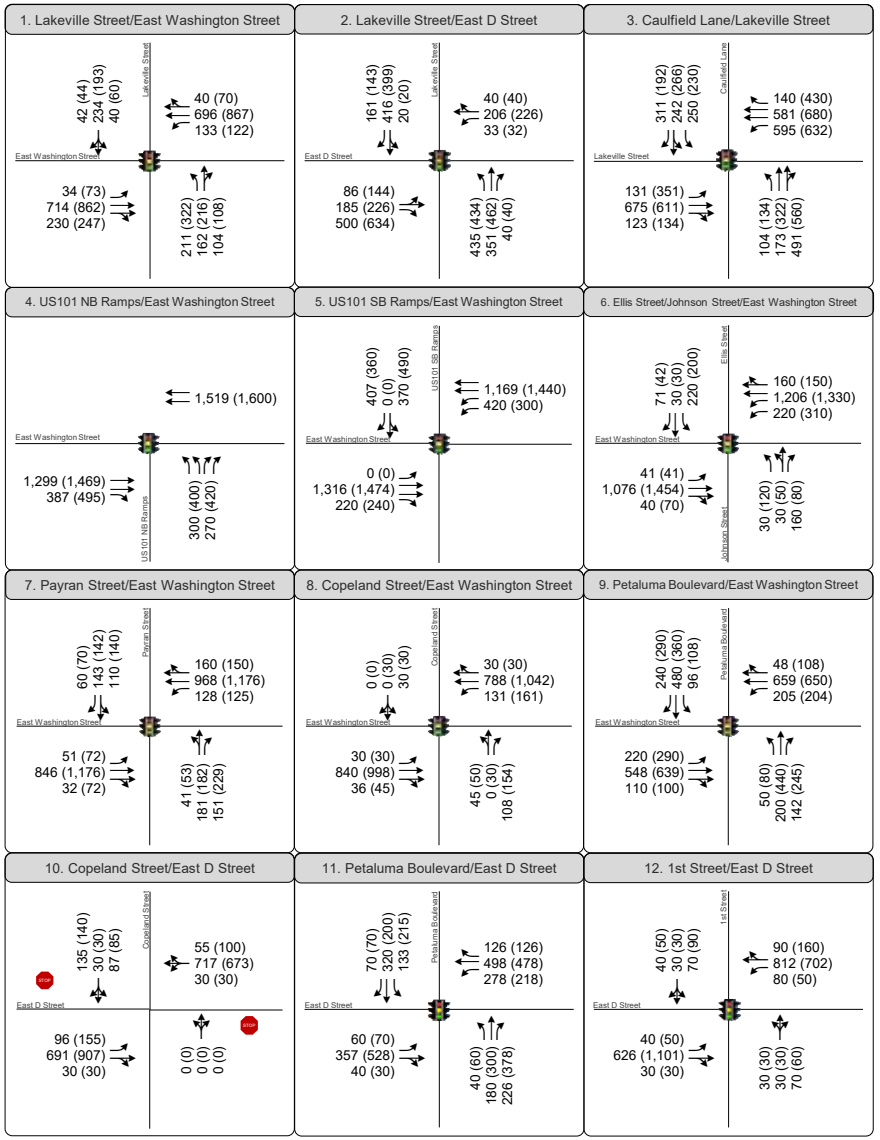


XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 12

Cumulative No Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Control





XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Project Site | # Study Intersection

Figure 13

Cumulative Plus Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Control

Under Cumulative conditions, operations of the following study intersections are projected to either continue operating at or degrade to LOS E or F compared to Pipeline conditions prior to the addition of project traffic:

- Lakeville Street/East Washington Street *(AM and PM peak hours: LOS F)*
- Lakeville Street/East D Street *(AM and PM peak hours: LOS F)*
- Lakeville Street/Caulfield Lane *(AM and PM peak hours: LOS F)*
- East Washington Street/Copeland Street *(PM peak hour: LOS E)*
- East D Street/Copeland Street *(AM and PM peak hours: LOS F at worst stop-controlled approach)*

The project would result in **adverse effects** on the following study intersections, which already operate at LOS F during the peak hours studied under Cumulative No Project conditions:

- Lakeville Street/East Washington Street *(AM and PM peak hour)*
- Lakeville Street/East D Street *(AM and PM peak hour)*
- Lakeville Street/Caulfield Lane *(AM and PM peak hours)*
- Copeland Street/East Washington Street *(AM and PM peak hour)*
- Copeland Street/East D Street *(AM and PM peak hours)*

All other intersections are projected to operate at LOS D or better under Cumulative conditions, even with the addition of project traffic.

Potential traffic operations improvement measures to improve the adverse effect of the project on the Lakeville Street/East Washington Street, Lakeville Street/East D Street, Copeland Street/East Washington Street, and Copeland Street/East D Street intersections are discussed at the end of this chapter.

Peak Hour Signal Warrants

The Peak Hour Signal Warrant (Warrant 3B in the California Manual on Uniform Traffic Control Devices) was reviewed at the unsignalized study intersections that operate deficiently with respect to the City's LOS D standard. Since the Peak Hour Signal Warrant is met at Copeland Street/East D Street based on Existing traffic volumes, it is also met based on Cumulative and Cumulative Plus Project traffic volumes. Further discussion of potential improvements for this intersection is included on page 73.

Potential Traffic Operations Improvement Measures

This section presents and discusses potential traffic operations improvement measures that could address the project's adverse effects on traffic operations at the following intersections, as identified earlier in this chapter:

- Lakeville Street/East Washington Street
- Lakeville Street/East D Street
- Lakeville Street/Caulfield Lane
- Copeland Street/East Washington Street
- Copeland Street/East D Street

Petaluma's General Plan Policy 5-P-10 seeks to maintain an intersection LOS standard at Level D or better for motor vehicles. This policy also notes that a lower level of service may be deemed acceptable, by the City, in instances where the City finds that potential vehicular traffic mitigations would conflict with the Guiding Principles of the General Plan, such as multimodal safety and accessibility and maintaining Petaluma's historic character.

Funding arrangements for the potential improvement measures discussed below should be considered on a fair-share basis as the adverse effects identified are generally related to the exacerbation of operations estimated to be deficient prior to the addition of program-generated traffic volumes.

Lakeville Street/East Washington Street

The addition of project-related trips was found to have an adverse effect on intersection operations at Lakeville Street/East Washington Street under Pipeline Plus Project conditions during the PM peak hour and Cumulative Plus Project conditions during the AM and PM peak hours. In both scenarios, the addition of any project trips to this intersection, which would already operate at LOS F under Pipeline No Project conditions during the PM peak hour and under Cumulative No Project conditions during the AM and PM peak hours, would be inconsistent with City thresholds for intersection operations.

Potential intersection improvements could include signal timing adjustments or adding additional turn pockets. Grade crossing events related to SMART service influence intersection operations at this location and limit the effectiveness of signal timing adjustments. Additionally, installing additional lanes or expanding capacity would conflict with the proposed General Plan goals due to right-of-way constraints, crossing safety requirements, and train signal coordination. Therefore, the feasibility of potential intersection improvements at this location are limited and no improvement measures are recommended.

Lakeville Street/East D Street

The addition of project-related trips was found to have an adverse effect on intersection operations at Lakeville Street/East D Street under Existing Plus Project conditions during the PM peak hour, Pipeline Plus Project conditions during the AM and PM peak hour, and Cumulative Plus Project conditions during the AM and PM peak hours. Under Existing Plus Project conditions, trips added by the project result in a degradation from LOS D in Existing conditions to LOS E during the PM peak hour, which would be

inconsistent with City thresholds for intersection operations. Under the Pipeline Plus Project and Cumulative Plus Project scenarios, the addition of any project trips to this intersection, which would already operate at LOS F under Pipeline No Project conditions during the PM peak hour and under Cumulative No Project conditions during the AM and PM peak hours, would be inconsistent with City thresholds for intersection operations.

Similar to the Lakeville Street/East Washington Street intersection, the feasibility of potential intersection improvements at this location are relatively limited. Grade crossing events related to SMART service influence intersection operations at this location and limit the effectiveness of signal timing adjustments. Any signal timing adjustments would potentially undo recent changes that the City has made to intersection signal timing at this location. Installing additional lanes or expanding capacity at this location would conflict with the proposed General Plan goals due to right-of-way constraints, crossing safety requirements, and train signal coordination. Additionally, the City's *2025 General Plan* EIR also identified several intersections, including Lakeville Street/East D Street, where a lower level of service was deemed acceptable due to physical constraints that limited feasible improvements. The proposed improvement measure at this location (confirmed to be applicable based on conversations with City staff) is to add a right-turn overlap phase to the traffic signal for the eastbound East D Street to southbound Lakeville Street movement. Minor widening at the intersection would be required to ensure that large trucks can complete the right turn movement at this location; coordination with SMART may be required to implement these changes.

Lakeville Street/Caulfield Lane

The addition of project-related trips was found to have an adverse effect on intersection operations at Lakeville Street/Caufield Lane under Cumulative Plus Project conditions during the AM and PM peak hours. The addition of any project trips to this intersection, which would already operate at LOS F under Cumulative No Project conditions during the AM and PM peak hours, would be inconsistent with City thresholds for intersection operations. The primary cause for the deterioration of intersection operations under cumulative conditions at this location is the additional traffic attracted to Caulfield Lane from other routes due to the construction of the Caulfield Lane Extension/Bridge over the Petaluma River (e.g., vehicles that are currently using D or East Washington streets to cross the Petaluma River).

Potential intersection improvements could include signal timing adjustments or restriping intersection approaches to provide dedicated turn pockets. For example, by striping a dedicated left-turn pocket on the southbound approach and a dedicated right-turn pocket on the northbound approach of the intersection and retaining one through lane on each of these approaches, protected left turn phases could be programmed rather than split phases for these approaches. Under Cumulative Plus Project conditions,

these signal timing adjustments results in a decrease in overall intersection delay, resulting in LOS D during the AM peak hour and LOS E during the PM peak hour.

The City's *2025 General Plan* EIR identified several intersections, including Lakeville Street/Caufield Lane, where a lower level of service was deemed acceptable due to physical constraints that limited feasible improvements. This improvement would not require installing additional lanes or expanding capacity at this location and therefore would not conflict with the General Plan goals related to avoiding traffic roadway changes that require additional right-of-way.

Copeland Street/East Washington Street

The addition of project-related trips was found to have an adverse effect on intersection operations at Copeland Street/East Washington Street under Existing Plus Project conditions, Pipeline Plus Project conditions, and Cumulative Plus Project conditions during the AM and PM peak hours (for all scenarios). Under Existing Plus Project conditions, trips added by the project result in a degradation from LOS D in Existing conditions to LOS F during the AM peak hour, which would be inconsistent with City thresholds for intersection operations. Under the Existing Plus Project scenarios during the PM peak hour, and under the Pipeline Plus Project and Cumulative Plus Project scenarios during the AM and PM peak hours, the addition of project trips to this intersection, which would already operate at LOS F under Existing conditions during the PM peak hour and under Pipeline No Project and Cumulative No Project conditions during the AM and PM peak hours, would be inconsistent with City thresholds for intersection operations.

Potential intersection improvements could include signal timing adjustments or adding additional – or extending – existing turn pockets. Grade crossing events related to SMART service influence intersection operations at this intersection when vehicle queues at Lakeville Street/East Washington Street extend back on eastbound East Washington Street and block access to and from Copeland Street. Since these vehicle queues are associated with the grade crossing, the effectiveness of signal timing adjustments is limited. Additionally, installing additional lanes or expanding capacity would conflict with the proposed General Plan goals due to right-of-way constraints. Therefore, the feasibility of potential intersection improvements at this location are limited and no improvement measures are recommended.

Copeland Street/East D Street

The addition of project-related trips was found to have an adverse effect on intersection operations at Copeland Street/East D Street under Pipeline Plus Project conditions during the PM peak hour and Cumulative Plus Project conditions during the AM and PM peak hours. In both scenarios, the addition of any project trips to this intersection, which would already operate at LOS F under Pipeline No Project conditions during the PM peak hour and under Cumulative No Project conditions during the AM and PM peak hours, would be inconsistent with City thresholds for intersection operations. This intersection likely

performs better in real-world conditions, at least under Existing conditions, as drivers on East D Street periodically let vehicles from Copeland Street enter East D Street – especially during congested periods (e.g., the PM peak hour) when vehicle speeds on East D Street are reduced as a result of traffic congestion.

The Copeland Street/ East D Street intersection meets signal warrants under Existing conditions, as well as subsequent study scenarios – and has been identified for future signalization in the *Central Petaluma Specific Plan*.

Installation of a traffic signal at this location would improve intersection operations under Cumulative Plus Project conditions to an acceptable level, LOS D during the AM and PM peak hours. Since signalization would result in acceptable operations under Cumulative Plus Project conditions, signalization would also result in acceptable operations under Existing Plus Project and Pipeline Plus Project as well.

Recommendations

The project applicant is required to pay the City's Development Traffic Impact Fee, which is used to help fund routine signal maintenance activities and other traffic improvements. The project's payment of the Traffic Impact Fee would assist the City in improving traffic flow through improvements such as the ones identified above. The project applicant should also pay a proportional share of the cost of the signalization of Copeland Street/East D Street, which is located directly adjacent to the project site.

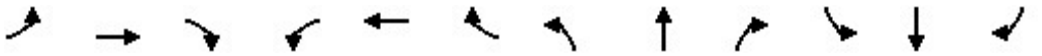
Appendix A:

LOS Calculation Worksheets

The study intersections were analyzed with the following traffic operations analysis programs. In this appendix, Synchro-analyzed intersections are provided first, followed by SimTraffic-analyzed intersections.

Table 1: Study Intersections and Cardinal Orientation

Intersection	North/South Street	East/West Street	Program Used
1	Lakeville Street	East Washington Street	SimTraffic
2	Lakeville Street	East D Street	SimTraffic
3	Caulfield Lane	Lakeville Street	Synchro
4	US-101 Northbound Ramps	East Washington Street	Synchro
5	US-101 Southbound Ramps	East Washington Street	Synchro
6	Ellis Street	East Washington Street	Synchro
7	Payran Street	East Washington Street	Synchro
8	Copeland Street	East Washington Street	SimTraffic
9	Petaluma Boulevard South	East Washington Street	Synchro
10	Copeland Street	East D Street	SimTraffic
11	Petaluma Boulevard South	East D Street	Synchro
12	First Street	East D Street	Synchro



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	620	20	20	510	130	20	20	20	230	20	290
Future Volume (veh/h)	120	620	20	20	510	130	20	20	20	230	20	290
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	653	20	21	537	57	21	21	1	257	0	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	1307	40	103	900	396	176	341	16	651	0	285
Arrive On Green	0.18	0.37	0.37	0.06	0.25	0.25	0.10	0.10	0.10	0.18	0.00	0.18
Sat Flow, veh/h	1781	3518	108	1781	3554	1563	1781	3452	163	3563	0	1559
Grp Volume(v), veh/h	126	330	343	21	537	57	21	11	11	257	0	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1849	1781	1777	1563	1781	1777	1838	1781	0	1559
Q Serve(g_s), s	4.2	9.5	9.5	0.7	8.8	1.9	0.7	0.4	0.4	4.2	0.0	1.6
Cycle Q Clear(g_c), s	4.2	9.5	9.5	0.7	8.8	1.9	0.7	0.4	0.4	4.2	0.0	1.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	314	660	687	103	900	396	176	176	182	651	0	285
V/C Ratio(X)	0.40	0.50	0.50	0.20	0.60	0.14	0.12	0.06	0.06	0.39	0.00	0.15
Avail Cap(c_a), veh/h	536	1203	1252	402	2405	1058	938	935	968	1608	0	704
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	0.00	1.00
Uniform Delay (d), s/veh	24.3	16.1	16.1	29.8	21.8	19.2	27.3	27.2	27.2	23.9	0.0	22.9
Incr Delay (d2), s/veh	0.3	0.8	0.8	0.4	0.9	0.2	0.2	0.1	0.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.6	3.7	0.3	3.5	0.7	0.3	0.1	0.2	1.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	16.9	16.9	30.2	22.7	19.5	27.5	27.3	27.3	24.2	0.0	23.0
LnGrp LOS	C	B	B	C	C	B	C	C	C	C	A	C
Approach Vol, veh/h		799			615			43			301	
Approach Delay, s/veh		18.1			22.7			27.4			24.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	30.0		11.4	15.7	22.1		17.2				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	2.7	11.5		2.7	6.2	10.8		6.2				
Green Ext Time (p_c), s	0.0	6.5		0.1	0.1	5.9		0.8				

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

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1220	350	0	1430	280	250
Future Volume (veh/h)	1220	350	0	1430	280	250
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1284	0	0	1505	295	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2885		0	2885	354	285
Arrive On Green	0.81	0.00	0.00	0.81	0.10	0.10
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1284	0	0	1505	295	114
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	11.9	0.0	0.0	15.5	9.4	4.3
Cycle Q Clear(g_c), s	11.9	0.0	0.0	15.5	9.4	4.3
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2885		0	2885	354	285
V/C Ratio(X)	0.44		0.00	0.52	0.83	0.40
Avail Cap(c_a), veh/h	2885		0	2885	771	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.1	0.0	0.0	3.4	49.3	47.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.7	2.0	0.3
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	0.0	0.0	4.1	4.1	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.6	0.0	0.0	4.1	51.3	47.4
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h	1284	A		1505	409	
Approach Delay, s/veh	3.6			4.1	50.2	
Approach LOS	A			A	D	

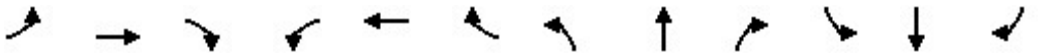
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	95.7				95.7	16.3
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 77				* 77	25.0
Max Q Clear Time (g_c+I1), s	13.9				17.5	11.4
Green Ext Time (p_c), s	2.2				2.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

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

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



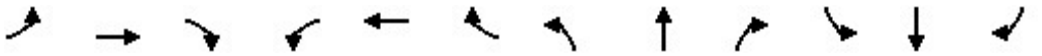
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1220	200	390	1100	0	0	0	0	350	0	380
Future Volume (veh/h)	0	1220	200	390	1100	0	0	0	0	350	0	380
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1284	154	411	1158	0				368	0	400
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	374	1626	714	399	1564	0				396	0	685
Arrive On Green	0.00	0.91	0.91	0.20	0.44	0.00				0.22	0.00	0.22
Sat Flow, veh/h	1781	3554	1560	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1284	154	411	1158	0				368	0	400
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	12.4	1.2	22.0	30.3	0.0				22.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.4	1.2	22.0	30.3	0.0				22.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	374	1626	714	399	1564	0				396	0	685
V/C Ratio(X)	0.00	0.79	0.22	1.03	0.74	0.00				0.93	0.00	0.58
Avail Cap(c_a), veh/h	374	1626	714	399	1564	0				429	0	715
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.1	2.6	45.0	26.0	0.0				42.7	0.0	24.2
Incr Delay (d2), s/veh	0.0	4.0	0.7	53.1	3.2	0.0				24.9	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	2.4	0.5	8.4	13.2	0.0				12.6	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.1	3.3	98.1	29.2	0.0				67.7	0.0	24.8
LnGrp LOS	A	A	A	F	C	A				E	A	C
Approach Vol, veh/h		1438			1569						768	
Approach Delay, s/veh		6.7			47.3						45.4	
Approach LOS		A			D						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	26.2	55.8		30.0	28.1	53.9
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 22	49.1		27.0	23.0	* 49
Max Q Clear Time (g_c+I1), s	24.0	14.4		24.7	0.0	32.3
Green Ext Time (p_c), s	0.0	2.1		0.2	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	31.4
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)	30	990	30	200	1130	150	20	20	150	200	20	60
Future Volume (veh/h)	30	990	30	200	1130	150	20	20	150	200	20	60
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	1042	30	211	1189	152	21	21	10	211	21	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	1939	56	265	1910	243	124	130	107	248	260	216
Arrive On Green	0.02	0.55	0.55	0.15	1.00	1.00	0.07	0.07	0.07	0.14	0.14	0.14
Sat Flow, veh/h	1781	3526	102	3456	3161	403	1781	1870	1541	1781	1870	1551
Grp Volume(v), veh/h	32	525	547	211	666	675	21	21	10	211	21	7
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1728	1777	1787	1781	1870	1541	1781	1870	1551
Q Serve(g_s), s	2.0	21.1	21.1	6.6	0.0	0.0	1.2	1.2	0.7	13.0	1.1	0.4
Cycle Q Clear(g_c), s	2.0	21.1	21.1	6.6	0.0	0.0	1.2	1.2	0.7	13.0	1.1	0.4
Prop In Lane	1.00		0.05	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	977	1018	265	1074	1080	124	130	107	248	260	216
V/C Ratio(X)	0.80	0.54	0.54	0.80	0.62	0.62	0.17	0.16	0.09	0.85	0.08	0.03
Avail Cap(c_a), veh/h	146	977	1018	284	1074	1080	414	434	358	414	434	360
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	54.5	16.1	16.1	46.6	0.0	0.0	49.0	49.0	48.8	47.1	42.0	41.7
Incr Delay (d2), s/veh	12.4	2.1	2.0	12.3	2.7	2.7	0.2	0.2	0.1	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.8	9.2	3.1	0.8	0.8	0.6	0.6	0.3	6.0	0.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	18.2	18.1	58.9	2.7	2.7	49.3	49.2	48.9	50.9	42.0	41.7
LnGrp LOS	E	B	B	E	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1104			1552			52			239	
Approach Delay, s/veh		19.6			10.3			49.2			49.9	
Approach LOS		B			B			D			D	

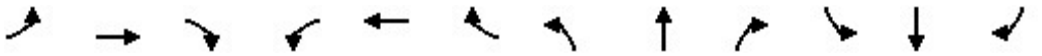
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	66.4		20.6	6.5	72.5		12.4				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	9.2	* 32		* 26	9.2	* 33		26.0				
Max Q Clear Time (g_c+I1), s	8.6	23.1		15.0	4.0	2.0		3.2				
Green Ext Time (p_c), s	0.0	2.3		0.1	0.0	4.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		17.7
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

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



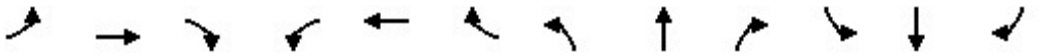
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	780	20	110	910	150	30	160	130	100	110	50
Future Volume (veh/h)	40	780	20	110	910	150	30	160	130	100	110	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	821	20	116	958	149	32	168	14	105	116	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	1025	25	488	1583	246	38	199	200	123	136	221
Arrive On Green	0.06	0.29	0.29	0.55	1.00	1.00	0.13	0.13	0.13	0.14	0.14	0.14
Sat Flow, veh/h	1781	3543	86	1781	3071	477	297	1559	1560	868	959	1560
Grp Volume(v), veh/h	42	412	429	116	554	553	200	0	14	221	0	53
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1772	1856	0	1560	1827	0	1560
Q Serve(g_s), s	2.5	24.0	24.0	3.8	0.0	0.0	11.8	0.0	0.9	13.2	0.0	3.4
Cycle Q Clear(g_c), s	2.5	24.0	24.0	3.8	0.0	0.0	11.8	0.0	0.9	13.2	0.0	3.4
Prop In Lane	1.00		0.05	1.00		0.27	0.16		1.00	0.48		1.00
Lane Grp Cap(c), veh/h	104	514	536	488	916	913	237	0	200	259	0	221
V/C Ratio(X)	0.40	0.80	0.80	0.24	0.61	0.61	0.84	0.00	0.07	0.85	0.00	0.24
Avail Cap(c_a), veh/h	150	514	536	488	916	913	424	0	356	445	0	380
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	36.8	36.8	19.2	0.0	0.0	47.7	0.0	43.0	46.9	0.0	42.7
Incr Delay (d2), s/veh	0.9	12.4	11.9	0.1	3.0	3.0	3.1	0.0	0.1	3.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.1	12.5	1.5	0.8	0.8	5.7	0.0	0.3	6.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	49.2	48.8	19.3	3.0	3.0	50.8	0.0	43.0	50.0	0.0	42.9
LnGrp LOS	D	D	D	B	A	A	D	A	D	D	A	D
Approach Vol, veh/h		883			1223			214			274	
Approach Delay, s/veh		49.1			4.5			50.3			48.6	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.5	37.1		18.9	10.1	62.5		20.5				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 9.3	* 32		25.6	9.4	* 32		27.3				
Max Q Clear Time (g_c+I1), s	5.8	26.0		13.8	4.5	2.0		15.2				
Green Ext Time (p_c), s	0.0	1.4		0.4	0.0	3.3		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		28.1	
HCM 6th LOS		C	

Notes

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



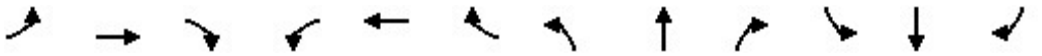
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	510	100	190	610	30	40	180	130	80	450	220
Future Volume (veh/h)	200	510	100	190	610	30	40	180	130	80	450	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	537	92	200	642	29	42	189	17	84	474	232
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	555	1295	221	226	824	37	54	277	228	262	514	426
Arrive On Green	0.31	0.43	0.43	0.13	0.24	0.24	0.03	0.15	0.15	0.15	0.27	0.27
Sat Flow, veh/h	1781	3020	515	1781	3456	156	1781	1870	1539	1781	1870	1551
Grp Volume(v), veh/h	211	315	314	200	330	341	42	189	17	84	474	232
Grp Sat Flow(s),veh/h/ln	1781	1777	1759	1781	1777	1835	1781	1870	1539	1781	1870	1551
Q Serve(g_s), s	11.6	15.4	15.5	13.8	21.7	21.7	2.9	12.0	0.9	5.3	30.8	7.4
Cycle Q Clear(g_c), s	11.6	15.4	15.5	13.8	21.7	21.7	2.9	12.0	0.9	5.3	30.8	7.4
Prop In Lane	1.00		0.29	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	555	762	754	226	424	437	54	277	228	262	514	426
V/C Ratio(X)	0.38	0.41	0.42	0.89	0.78	0.78	0.78	0.68	0.07	0.32	0.92	0.54
Avail Cap(c_a), veh/h	555	762	754	248	424	437	148	539	443	262	539	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	24.8	24.8	53.7	44.5	44.5	60.2	50.4	26.8	47.7	44.0	8.4
Incr Delay (d2), s/veh	0.2	1.7	1.7	22.5	10.9	10.7	8.6	4.2	0.2	0.3	21.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.8	6.8	7.6	10.8	11.2	1.5	6.0	0.5	2.4	17.4	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	26.4	26.5	76.2	55.4	55.2	68.8	54.6	27.0	47.9	65.4	10.1
LnGrp LOS	C	C	C	E	E	E	E	D	C	D	E	B
Approach Vol, veh/h		840			871			248			790	
Approach Delay, s/veh		28.3			60.1			55.1			47.3	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	58.2	7.8	39.2	43.6	34.5	23.2	23.7
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	17.4	43.8	10.4	* 36	* 31	* 30	* 10	* 36
Max Q Clear Time (g_c+I1), s	15.8	17.5	4.9	32.8	13.6	23.7	7.3	14.0
Green Ext Time (p_c), s	0.0	5.9	0.0	1.6	0.3	2.7	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	46.3
HCM 6th LOS	D

Notes

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



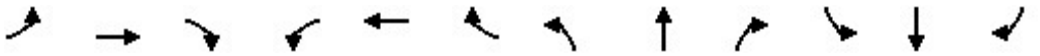
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	310	30	240	450	90	30	170	200	110	300	60
Future Volume (veh/h)	50	310	30	240	450	90	30	170	200	110	300	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	326	28	253	474	38	32	179	29	116	316	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	504	43	426	897	738	87	273	225	190	396	322
Arrive On Green	0.07	0.30	0.30	0.48	0.96	0.96	0.05	0.15	0.15	0.11	0.21	0.21
Sat Flow, veh/h	1781	1693	145	1781	1870	1539	1781	1870	1538	1781	1870	1521
Grp Volume(v), veh/h	53	0	354	253	474	38	32	179	29	116	316	15
Grp Sat Flow(s),veh/h/ln	1781	0	1838	1781	1870	1539	1781	1870	1538	1781	1870	1521
Q Serve(g_s), s	2.6	0.0	15.1	9.3	1.9	0.1	1.6	8.1	1.5	5.6	14.4	0.7
Cycle Q Clear(g_c), s	2.6	0.0	15.1	9.3	1.9	0.1	1.6	8.1	1.5	5.6	14.4	0.7
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	547	426	897	738	87	273	225	190	396	322
V/C Ratio(X)	0.46	0.00	0.65	0.59	0.53	0.05	0.37	0.65	0.13	0.61	0.80	0.05
Avail Cap(c_a), veh/h	158	0	547	426	897	738	164	544	448	190	540	439
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	27.5	20.3	1.0	0.3	41.4	36.3	33.4	38.4	33.7	28.2
Incr Delay (d2), s/veh	1.0	0.0	5.8	1.5	2.2	0.1	1.0	3.7	0.4	4.1	7.1	0.1
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	1.2	0.0	7.4	3.3	0.9	0.1	0.7	3.9	0.6	2.7	7.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	33.3	21.8	3.2	0.5	42.4	40.0	33.8	42.6	40.8	28.3
LnGrp LOS	D	A	C	C	A	A	D	D	C	D	D	C
Approach Vol, veh/h		407			765			240			447	
Approach Delay, s/veh		34.4			9.2			39.6			40.8	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.1	31.5	8.4	23.9	9.9	47.8	14.5	17.9
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 11	* 27	8.3	* 26	8.0	30.2	* 8.3	* 26
Max Q Clear Time (g_c+I1), s	11.3	17.1	3.6	16.4	4.6	3.9	7.6	10.1
Green Ext Time (p_c), s	0.0	1.3	0.0	1.8	0.0	2.8	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

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



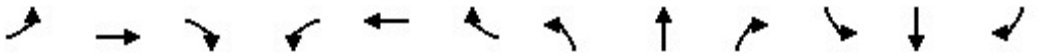
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	610	20	40	660	60	40	20	60	40	20	80
Future Volume (veh/h)	20	610	20	40	660	60	40	20	60	40	20	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	642	20	42	695	61	42	21	4	42	21	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	901	28	395	1193	105	158	69	10	93	41	111
Arrive On Green	0.05	1.00	1.00	0.22	0.71	0.71	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	1802	56	1781	1691	148	764	570	85	345	336	908
Grp Volume(v), veh/h	21	0	662	42	0	756	67	0	0	147	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1859	1781	0	1840	1418	0	0	1588	0	0
Q Serve(g_s), s	1.0	0.0	0.0	1.7	0.0	18.5	0.0	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	0.0	1.7	0.0	18.5	3.7	0.0	0.0	7.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.08	0.63		0.06	0.29		0.57
Lane Grp Cap(c), veh/h	40	0	929	395	0	1298	238	0	0	245	0	0
V/C Ratio(X)	0.52	0.00	0.71	0.11	0.00	0.58	0.28	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	186	0	929	395	0	1298	416	0	0	438	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	0.0	0.0	27.9	0.0	6.6	36.2	0.0	0.0	38.1	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.0	4.6	0.0	0.0	1.9	0.5	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.7	0.0	6.7	1.4	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	4.6	28.0	0.0	8.5	36.7	0.0	0.0	39.8	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	D	A	A	D	A	A
Approach Vol, veh/h		683			798			67			147	
Approach Delay, s/veh		5.9			9.6			36.7			39.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	68.1		15.9	24.5	49.6		15.9				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	45.0		* 22	9.4	* 45		* 22				
Max Q Clear Time (g_c+I1), s	3.0	20.5		9.9	3.7	2.0		5.7				
Green Ext Time (p_c), s	0.0	8.8		0.5	0.0	8.6		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		11.8
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)	330	540	40	60	610	400	30	40	20	210	20	180
Future Volume (veh/h)	330	540	40	60	610	400	30	40	20	210	20	180
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	347	568	39	63	642	337	32	42	1	236	0	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	1410	97	191	1108	487	205	408	10	498	0	218
Arrive On Green	0.21	0.42	0.42	0.11	0.31	0.31	0.12	0.12	0.12	0.14	0.00	0.14
Sat Flow, veh/h	1781	3371	231	1781	3554	1563	1781	3547	84	3563	0	1557
Grp Volume(v), veh/h	347	299	308	63	642	337	32	21	22	236	0	21
Grp Sat Flow(s),veh/h/ln	1781	1777	1825	1781	1777	1563	1781	1777	1854	1781	0	1557
Q Serve(g_s), s	16.6	10.3	10.3	2.9	13.3	16.5	1.4	0.9	0.9	5.3	0.0	1.0
Cycle Q Clear(g_c), s	16.6	10.3	10.3	2.9	13.3	16.5	1.4	0.9	0.9	5.3	0.0	1.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	381	743	763	191	1108	487	205	204	213	498	0	218
V/C Ratio(X)	0.91	0.40	0.40	0.33	0.58	0.69	0.16	0.10	0.10	0.47	0.00	0.10
Avail Cap(c_a), veh/h	407	914	939	305	1828	804	713	711	742	1222	0	534
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	0.00	1.00
Uniform Delay (d), s/veh	33.6	17.8	17.8	36.1	25.3	26.4	34.9	34.7	34.7	34.7	0.0	32.8
Incr Delay (d2), s/veh	22.4	0.5	0.5	0.4	0.7	2.5	0.3	0.2	0.2	0.5	0.0	0.1
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	9.3	4.1	4.2	1.2	5.4	6.2	0.6	0.4	0.4	2.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	18.3	18.3	36.5	26.0	28.9	35.1	34.8	34.8	35.2	0.0	33.0
LnGrp LOS	E	B	B	D	C	C	D	C	C	D	A	C
Approach Vol, veh/h		954			1042			75			257	
Approach Delay, s/veh		32.0			27.6			35.0			35.0	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.4	41.9		14.9	22.7	32.6		17.3				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	4.9	12.3		3.4	18.6	18.5		7.3				
Green Ext Time (p_c), s	0.0	5.7		0.2	0.1	8.7		0.6				

Intersection Summary		
HCM 6th Ctrl Delay	30.4	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1380	450	0	1510	380	390
Future Volume (veh/h)	1380	450	0	1510	380	390
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1453	0	0	1589	400	305
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2813		0	2813	453	366
Arrive On Green	0.79	0.00	0.00	0.79	0.13	0.13
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1453	0	0	1589	400	305
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	17.9	0.0	0.0	20.9	14.1	13.2
Cycle Q Clear(g_c), s	17.9	0.0	0.0	20.9	14.1	13.2
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2813		0	2813	453	366
V/C Ratio(X)	0.52		0.00	0.56	0.88	0.83
Avail Cap(c_a), veh/h	2813		0	2813	780	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.6	0.0	0.0	4.9	52.9	52.6
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.8	2.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	0.0	6.5	6.3	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.2	0.0	0.0	5.7	55.9	54.5
LnGrp LOS	A		A	A	E	D
Approach Vol, veh/h	1453	A		1589	705	
Approach Delay, s/veh	5.2			5.7	55.3	
Approach LOS	A			A	E	

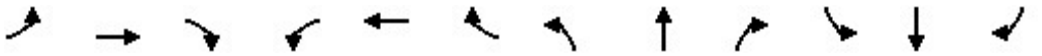
Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	102.9			102.9	21.1
Change Period (Y+Rc), s	* 4.8			* 4.8	4.8
Max Green Setting (Gmax), s	* 86			* 86	28.0
Max Q Clear Time (g_c+I1), s	19.9			22.9	16.1
Green Ext Time (p_c), s	2.6			3.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Notes

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

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



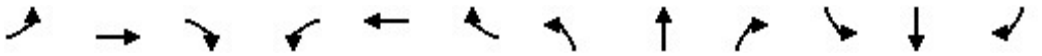
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1370	220	280	1350	0	0	0	0	460	0	320
Future Volume (veh/h)	0	1370	220	280	1350	0	0	0	0	460	0	320
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1442	179	295	1421	0				484	0	297
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	1	1751	769	462	2691	0				488	0	396
Arrive On Green	0.00	0.49	0.49	0.23	0.76	0.00				0.27	0.00	0.27
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1442	179	295	1421	0				484	0	297
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	43.0	8.1	16.3	20.1	0.0				33.6	0.0	24.4
Cycle Q Clear(g_c), s	0.0	43.0	8.1	16.3	20.1	0.0				33.6	0.0	24.4
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	1	1751	769	462	2691	0				488	0	396
V/C Ratio(X)	0.00	0.82	0.23	0.64	0.53	0.00				0.99	0.00	0.75
Avail Cap(c_a), veh/h	244	1751	769	462	2691	0				488	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	26.8	18.0	43.3	6.1	0.0				44.8	0.0	55.1
Incr Delay (d2), s/veh	0.0	4.0	0.6	2.3	0.7	0.0				38.2	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.7	3.1	4.2	6.8	0.0				19.9	0.0	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.8	18.6	45.6	6.8	0.0				83.1	0.0	62.0
LnGrp LOS	A	C	B	D	A	A				F	A	E
Approach Vol, veh/h		1621			1716						781	
Approach Delay, s/veh		29.5			13.5						75.0	
Approach LOS		C			B						E	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	33.2	65.7		39.1	0.0	98.9
Change Period (Y+Rc), s	4.6	* 4.6		5.1	3.0	4.6
Max Green Setting (Gmax), s	15.0	* 61		34.0	17.0	60.3
Max Q Clear Time (g_c+I1), s	18.3	45.0		35.6	0.0	22.1
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	2.5

Intersection Summary		
HCM 6th Ctrl Delay		31.5
HCM 6th LOS		C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1350	60	290	1230	140	110	40	70	190	20	30
Future Volume (veh/h)	30	1350	60	290	1230	140	110	40	70	190	20	30
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	1421	61	305	1295	143	79	94	5	200	21	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	1872	80	358	1998	220	137	144	119	234	245	203
Arrive On Green	0.02	0.54	0.54	0.10	0.62	0.62	0.08	0.08	0.08	0.13	0.13	0.13
Sat Flow, veh/h	1781	3469	149	3456	3220	354	1781	1870	1540	1781	1870	1550
Grp Volume(v), veh/h	32	726	756	305	712	726	79	94	5	200	21	4
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1728	1777	1797	1781	1870	1540	1781	1870	1550
Q Serve(g_s), s	2.2	39.5	39.7	10.8	31.4	31.9	5.3	6.1	0.4	13.6	1.2	0.3
Cycle Q Clear(g_c), s	2.2	39.5	39.7	10.8	31.4	31.9	5.3	6.1	0.4	13.6	1.2	0.3
Prop In Lane	1.00		0.08	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	41	959	994	358	1102	1115	137	144	119	234	245	203
V/C Ratio(X)	0.79	0.76	0.76	0.85	0.65	0.65	0.57	0.65	0.04	0.86	0.09	0.02
Avail Cap(c_a), veh/h	221	959	994	424	1102	1115	373	392	323	373	392	325
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	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.3	22.2	22.3	54.7	14.9	15.0	55.3	55.6	53.0	52.7	47.3	46.9
Incr Delay (d2), s/veh	11.9	5.6	5.5	10.5	2.5	2.6	1.4	1.8	0.1	6.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	17.4	18.1	5.2	12.9	13.2	2.5	3.0	0.1	6.5	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.2	27.8	27.8	65.1	17.4	17.5	56.7	57.4	53.0	58.8	47.4	46.9
LnGrp LOS	E	C	C	E	B	B	E	E	D	E	D	D
Approach Vol, veh/h		1514			1743			178			225	
Approach Delay, s/veh		28.7			25.8			57.0			57.5	
Approach LOS		C			C			E			E	

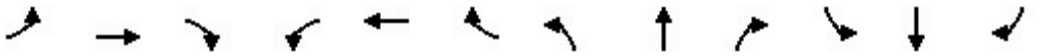
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	71.7		21.3	6.8	81.7		14.2				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	15.2	* 38		* 26	15.4	* 38		26.0				
Max Q Clear Time (g_c+I1), s	12.8	41.7		15.6	4.2	33.9		8.1				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	2.1		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		30.5	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

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



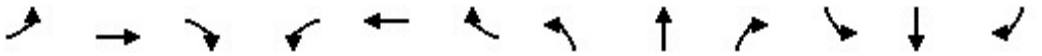
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1100	60	100	1100	140	40	150	200	130	120	60
Future Volume (veh/h)	60	1100	60	100	1100	140	40	150	200	130	120	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	1158	60	105	1158	141	42	158	19	137	126	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	1646	85	135	1550	188	50	187	199	155	143	256
Arrive On Green	0.07	0.48	0.48	0.08	0.49	0.49	0.13	0.13	0.13	0.16	0.16	0.16
Sat Flow, veh/h	1781	3433	178	1781	3181	386	389	1462	1560	950	873	1561
Grp Volume(v), veh/h	63	599	619	105	645	654	200	0	19	263	0	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1834	1781	1777	1791	1851	0	1560	1823	0	1561
Q Serve(g_s), s	3.9	30.4	30.4	6.6	33.6	33.8	12.1	0.0	1.2	16.2	0.0	0.5
Cycle Q Clear(g_c), s	3.9	30.4	30.4	6.6	33.6	33.8	12.1	0.0	1.2	16.2	0.0	0.5
Prop In Lane	1.00		0.10	1.00		0.22	0.21		1.00	0.52		1.00
Lane Grp Cap(c), veh/h	121	852	879	135	866	872	236	0	199	298	0	256
V/C Ratio(X)	0.52	0.70	0.70	0.78	0.75	0.75	0.85	0.00	0.10	0.88	0.00	0.03
Avail Cap(c_a), veh/h	186	852	879	186	866	872	403	0	340	429	0	367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.7	23.4	23.5	52.1	23.7	23.7	48.9	0.0	44.2	46.9	0.0	40.3
Incr Delay (d2), s/veh	1.3	4.8	4.7	8.5	3.2	3.2	3.2	0.0	0.1	10.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	13.5	14.0	3.3	14.4	14.6	5.8	0.0	0.5	8.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	28.3	28.2	60.6	26.8	27.0	52.1	0.0	44.3	57.6	0.0	40.3
LnGrp LOS	D	C	C	E	C	C	D	A	D	E	A	D
Approach Vol, veh/h		1281			1404			219			271	
Approach Delay, s/veh		29.4			29.4			51.4			57.1	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	59.8		19.4	11.3	60.7		23.4				
Change Period (Y+Rc), s	3.5	* 4.8		* 4.7	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	12.0	* 55		* 25	12.0	* 55		27.0				
Max Q Clear Time (g_c+I1), s	8.6	32.4		14.1	5.9	35.8		18.2				
Green Ext Time (p_c), s	0.0	3.6		0.4	0.0	3.8		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

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



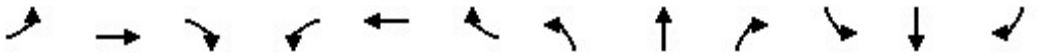
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	590	90	190	600	90	70	410	220	90	340	270
Future Volume (veh/h)	270	590	90	190	600	90	70	410	220	90	340	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	621	86	200	632	86	74	432	232	95	358	284
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	1235	171	226	827	112	94	489	406	118	533	442
Arrive On Green	0.25	0.40	0.40	0.13	0.26	0.26	0.05	0.26	0.26	0.07	0.28	0.28
Sat Flow, veh/h	1781	3122	431	1781	3127	425	1781	1870	1550	1781	1870	1552
Grp Volume(v), veh/h	284	353	354	200	359	359	74	432	232	95	358	284
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1781	1777	1775	1781	1870	1550	1781	1870	1552
Q Serve(g_s), s	17.6	18.6	18.7	13.7	23.1	23.2	5.1	27.5	11.7	6.5	21.0	10.8
Cycle Q Clear(g_c), s	17.6	18.6	18.7	13.7	23.1	23.2	5.1	27.5	11.7	6.5	21.0	10.8
Prop In Lane	1.00		0.24	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	703	703	226	470	470	94	489	406	118	533	442
V/C Ratio(X)	0.63	0.50	0.50	0.89	0.76	0.77	0.79	0.88	0.57	0.81	0.67	0.64
Avail Cap(c_a), veh/h	449	703	703	236	470	470	135	543	450	144	558	463
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	0.61	0.61	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	28.3	28.3	53.3	42.0	42.1	58.0	44.0	21.1	57.1	39.2	11.4
Incr Delay (d2), s/veh	2.2	2.6	2.6	19.8	7.0	7.2	10.7	15.4	1.9	19.4	3.4	3.3
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	8.0	8.4	8.4	7.4	11.0	11.0	2.6	14.9	4.5	3.6	10.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	30.8	30.9	73.1	49.1	49.2	68.7	59.3	23.0	76.6	42.6	14.7
LnGrp LOS	D	C	C	E	D	D	E	E	C	E	D	B
Approach Vol, veh/h		991			918			738			737	
Approach Delay, s/veh		34.5			54.3			48.8			36.3	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	53.6	10.5	40.1	35.8	37.5	13.0	37.6
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	16.4	43.8	9.4	* 37	* 27	* 33	* 10	* 36
Max Q Clear Time (g_c+I1), s	15.7	20.7	7.1	23.0	19.6	25.2	8.5	29.5
Green Ext Time (p_c), s	0.0	6.5	0.0	4.1	0.3	3.4	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

Notes

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



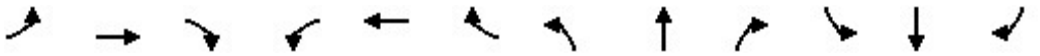
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	460	20	180	420	90	50	280	350	190	190	60
Future Volume (veh/h)	60	460	20	180	420	90	50	280	350	190	190	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	484	20	189	442	40	53	295	61	200	200	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	743	31	219	903	743	96	347	287	226	494	403
Arrive On Green	0.06	0.42	0.42	0.04	0.16	0.16	0.05	0.19	0.19	0.13	0.26	0.26
Sat Flow, veh/h	1781	1781	74	1781	1870	1539	1781	1870	1544	1781	1870	1528
Grp Volume(v), veh/h	63	0	504	189	442	40	53	295	61	200	200	15
Grp Sat Flow(s),veh/h/ln	1781	0	1854	1781	1870	1539	1781	1870	1544	1781	1870	1528
Q Serve(g_s), s	4.3	0.0	27.0	13.1	26.7	1.7	3.6	18.9	3.2	13.7	10.9	0.9
Cycle Q Clear(g_c), s	4.3	0.0	27.0	13.1	26.7	1.7	3.6	18.9	3.2	13.7	10.9	0.9
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	774	219	903	743	96	347	287	226	494	403
V/C Ratio(X)	0.62	0.00	0.65	0.86	0.49	0.05	0.55	0.85	0.21	0.88	0.40	0.04
Avail Cap(c_a), veh/h	187	0	774	317	903	743	249	428	354	263	494	403
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	28.9	58.5	38.2	10.3	57.2	48.8	24.9	53.2	37.6	33.9
Incr Delay (d2), s/veh	2.3	0.0	4.2	11.4	1.9	0.1	1.8	13.9	0.5	23.4	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	13.0	7.0	13.9	1.0	1.7	10.1	1.6	7.6	5.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	33.2	69.8	40.1	10.4	59.0	62.7	25.5	76.6	38.4	34.0
LnGrp LOS	E	A	C	E	D	B	E	E	C	E	D	C
Approach Vol, veh/h		567			671			409			415	
Approach Delay, s/veh		36.1			46.7			56.7			56.6	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	56.4	10.7	37.7	11.1	64.6	20.7	27.7
Change Period (Y+Rc), s	4.0	* 4.7	4.0	* 4.9	4.0	* 4.7	* 4.9	* 4.7
Max Green Setting (Gmax), s	22.1	* 38	17.3	* 29	13.0	* 47	* 18	* 28
Max Q Clear Time (g_c+I1), s	15.1	29.0	5.6	12.9	6.3	28.7	15.7	20.9
Green Ext Time (p_c), s	0.2	1.9	0.0	1.4	0.0	2.4	0.1	1.5

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

Notes

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



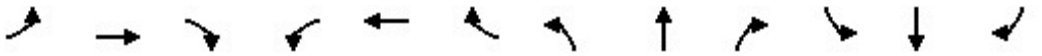
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	880	40	40	620	60	20	20	40	40	20	20
Future Volume (veh/h)	40	880	40	40	620	60	20	20	40	40	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		1.00	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	926	41	42	653	61	21	21	-17	42	21	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1390	62	55	1316	123	516	502	0	95	39	30
Arrive On Green	0.03	0.78	0.78	0.03	0.78	0.78	0.08	0.08	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1781	1775	79	1781	1681	157	1177	1320	-1011	663	503	389
Grp Volume(v), veh/h	42	0	967	42	0	714	0	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1854	1781	0	1838	0	0	0	1555	0	0
Q Serve(g_s), s	2.9	0.0	29.3	2.9	0.0	17.1	0.0	0.0	0.0	5.2	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	29.3	2.9	0.0	17.1	0.0	0.0	0.0	6.5	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.09	0.84		-0.68	0.50		0.25
Lane Grp Cap(c), veh/h	55	0	1451	55	0	1439	0	0	0	164	0	0
V/C Ratio(X)	0.76	0.00	0.67	0.76	0.00	0.50	0.00	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	135	0	1451	149	0	1439	0	0	0	628	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.6	0.0	6.1	59.6	0.0	4.8	0.0	0.0	0.0	55.7	0.0	0.0
Incr Delay (d2), s/veh	8.0	0.0	2.4	8.0	0.0	1.2	0.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	10.7	1.4	0.0	6.1	0.0	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	0.0	8.5	67.6	0.0	6.0	0.0	0.0	0.0	57.5	0.0	0.0
LnGrp LOS	E	A	A	E	A	A	A	A	A	E	A	A
Approach Vol, veh/h		1009			756			0			84	
Approach Delay, s/veh		11.0			9.4			0.0			57.5	
Approach LOS		B			A						E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	101.7		14.5	7.8	101.7		14.5				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.0	4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	54.0		* 47	10.4	53.0		* 47				
Max Q Clear Time (g_c+I1), s	4.9	19.1		8.5	4.9	31.3		0.0				
Green Ext Time (p_c), s	0.0	9.2		0.4	0.0	11.5		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	12.5
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)	121	635	20	20	521	130	20	21	35	230	20	291
Future Volume (veh/h)	121	635	20	20	521	130	20	21	35	230	20	291
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	668	20	21	548	57	21	22	17	257	0	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	307	1341	40	103	960	422	233	263	179	688	0	301
Arrive On Green	0.17	0.38	0.37	0.06	0.27	0.27	0.13	0.13	0.12	0.19	0.00	0.19
Sat Flow, veh/h	1781	3521	105	1781	3554	1563	1781	2008	1370	3563	0	1559
Grp Volume(v), veh/h	127	337	351	21	548	57	21	19	20	257	0	45
Grp Sat Flow(s),veh/h/ln	1781	1777	1850	1781	1777	1563	1781	1777	1602	1781	0	1559
Q Serve(g_s), s	4.4	9.9	10.0	0.8	9.1	1.9	0.7	0.6	0.8	4.3	0.0	1.6
Cycle Q Clear(g_c), s	4.4	9.9	10.0	0.8	9.1	1.9	0.7	0.6	0.8	4.3	0.0	1.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	307	677	704	103	960	422	233	232	210	688	0	301
V/C Ratio(X)	0.41	0.50	0.50	0.20	0.57	0.13	0.09	0.08	0.09	0.37	0.00	0.15
Avail Cap(c_a), veh/h	519	1191	1240	389	2398	1055	929	927	836	1615	0	707
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	0.00	1.00
Uniform Delay (d), s/veh	25.3	16.2	16.3	30.8	21.6	19.0	26.2	26.2	26.6	24.1	0.0	23.0
Incr Delay (d2), s/veh	0.3	0.8	0.8	0.4	0.8	0.2	0.1	0.1	0.1	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.8	3.9	0.3	3.6	0.7	0.3	0.3	0.3	1.8	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	17.0	17.0	31.2	22.4	19.2	26.4	26.3	26.7	24.3	0.0	23.2
LnGrp LOS	C	B	B	C	C	B	C	C	C	C	A	C
Approach Vol, veh/h		815			626			60			302	
Approach Delay, s/veh		18.4			22.4			26.5			24.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	30.4		13.0	15.8	22.5		17.3				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	2.8	12.0		2.8	6.4	11.1		6.3				
Green Ext Time (p_c), s	0.0	6.7		0.2	0.1	6.0		0.8				

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

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1225	367	0	1432	280	250
Future Volume (veh/h)	1225	367	0	1432	280	250
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1289	0	0	1507	295	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2913		0	2913	376	304
Arrive On Green	0.82	0.00	0.00	0.82	0.11	0.11
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1289	0	0	1507	295	114
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	11.5	0.0	0.0	14.9	9.3	4.3
Cycle Q Clear(g_c), s	11.5	0.0	0.0	14.9	9.3	4.3
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2913		0	2913	376	304
V/C Ratio(X)	0.44		0.00	0.52	0.78	0.38
Avail Cap(c_a), veh/h	2913		0	2913	796	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.9	0.0	0.0	3.2	48.6	46.4
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.7	1.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	3.8	4.1	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.3	0.0	0.0	3.8	50.0	46.7
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h	1289	A		1507	409	
Approach Delay, s/veh	3.3			3.8	49.1	
Approach LOS	A			A	D	

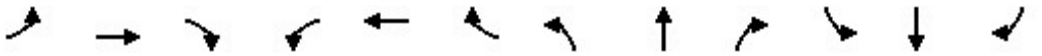
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	95.8				95.8	16.2
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 77				* 77	25.0
Max Q Clear Time (g_c+I1), s	13.5				16.9	11.3
Green Ext Time (p_c), s	2.2				2.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

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

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



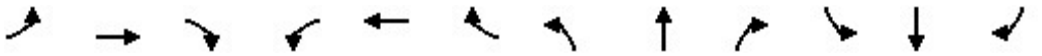
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1242	200	390	1102	0	0	0	0	350	0	387
Future Volume (veh/h)	0	1242	200	390	1102	0	0	0	0	350	0	387
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1307	154	411	1160	0				368	0	407
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	362	1651	725	403	1583	0				410	0	657
Arrive On Green	0.00	0.93	0.93	0.20	0.45	0.00				0.23	0.00	0.21
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1307	154	411	1160	0				368	0	407
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	11.0	1.0	22.2	30.1	0.0				22.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.0	1.0	22.2	30.1	0.0				22.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	362	1651	725	403	1583	0				410	0	657
V/C Ratio(X)	0.00	0.79	0.21	1.02	0.73	0.00				0.90	0.00	0.62
Avail Cap(c_a), veh/h	362	1651	725	403	1583	0				447	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.5	2.1	44.9	25.6	0.0				41.9	0.0	25.8
Incr Delay (d2), s/veh	0.0	4.0	0.7	50.3	3.0	0.0				18.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	0.4	8.3	13.1	0.0				11.9	0.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.5	2.8	95.2	28.6	0.0				60.5	0.0	26.9
LnGrp LOS	A	A	A	F	C	A				E	A	C
Approach Vol, veh/h		1461			1571						775	
Approach Delay, s/veh		6.1			46.0						42.9	
Approach LOS		A			D						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	26.2	56.0		29.8	28.3	53.9
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 22	49.1		27.0	23.0	* 49
Max Q Clear Time (g_c+I1), s	24.2	13.0		24.5	0.0	32.1
Green Ext Time (p_c), s	0.0	2.2		0.2	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	30.1
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)	31	1012	30	200	1139	150	20	20	150	200	20	61
Future Volume (veh/h)	31	1012	30	200	1139	150	20	20	150	200	20	61
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1065	30	211	1199	152	21	21	10	211	21	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1970	55	265	1933	244	134	140	116	262	275	228
Arrive On Green	0.02	0.56	0.55	0.15	1.00	1.00	0.08	0.08	0.08	0.15	0.15	0.15
Sat Flow, veh/h	1781	3528	99	3456	3165	400	1781	1870	1541	1781	1870	1552
Grp Volume(v), veh/h	33	536	559	211	671	680	21	21	10	211	21	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1851	1728	1777	1787	1781	1870	1541	1781	1870	1552
Q Serve(g_s), s	2.1	21.4	21.4	6.6	0.0	0.0	1.2	1.2	0.7	12.8	1.1	0.5
Cycle Q Clear(g_c), s	2.1	21.4	21.4	6.6	0.0	0.0	1.2	1.2	0.7	12.8	1.1	0.5
Prop In Lane	1.00		0.05	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	992	1033	265	1085	1092	134	140	116	262	275	228
V/C Ratio(X)	0.79	0.54	0.54	0.80	0.62	0.62	0.16	0.15	0.09	0.80	0.08	0.04
Avail Cap(c_a), veh/h	146	992	1033	284	1085	1092	423	444	366	429	451	374
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	54.4	15.7	15.7	46.6	0.0	0.0	48.5	48.5	48.2	46.2	41.2	40.9
Incr Delay (d2), s/veh	11.9	2.1	2.0	12.3	2.6	2.7	0.2	0.2	0.1	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	8.9	9.3	3.1	0.8	0.8	0.6	0.6	0.3	5.9	0.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	17.8	17.7	58.9	2.6	2.7	48.7	48.6	48.3	48.4	41.2	41.0
LnGrp LOS	E	B	B	E	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1128			1562			52			240	
Approach Delay, s/veh		19.2			10.3			48.6			47.5	
Approach LOS		B			B			D			D	

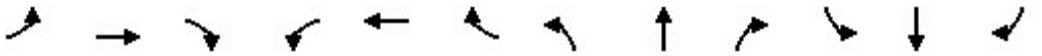
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	66.5		20.5	6.6	72.5		12.4				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	9.2	* 32		* 26	9.2	* 33		26.0				
Max Q Clear Time (g_c+I1), s	8.6	23.4		14.8	4.1	2.0		3.2				
Green Ext Time (p_c), s	0.0	2.3		0.1	0.0	4.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		17.3
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

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



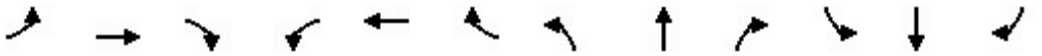
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	792	22	115	915	150	31	160	141	100	110	50
Future Volume (veh/h)	40	792	22	115	915	150	31	160	141	100	110	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	834	22	121	963	149	33	168	25	105	116	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	1045	28	481	1608	249	41	207	208	127	141	229
Arrive On Green	0.05	0.30	0.29	0.54	1.00	1.00	0.13	0.13	0.13	0.15	0.15	0.15
Sat Flow, veh/h	1781	3534	93	1781	3074	475	305	1551	1560	868	959	1560
Grp Volume(v), veh/h	42	419	437	121	556	556	201	0	25	221	0	53
Grp Sat Flow(s),veh/h/ln	1781	1777	1851	1781	1777	1772	1855	0	1560	1827	0	1560
Q Serve(g_s), s	2.6	24.4	24.4	4.0	0.0	0.0	11.8	0.0	1.6	13.2	0.0	3.4
Cycle Q Clear(g_c), s	2.6	24.4	24.4	4.0	0.0	0.0	11.8	0.0	1.6	13.2	0.0	3.4
Prop In Lane	1.00		0.05	1.00		0.27	0.16		1.00	0.48		1.00
Lane Grp Cap(c), veh/h	96	525	547	481	929	927	248	0	208	268	0	229
V/C Ratio(X)	0.44	0.80	0.80	0.25	0.60	0.60	0.81	0.00	0.12	0.83	0.00	0.23
Avail Cap(c_a), veh/h	142	525	547	481	929	927	434	0	365	455	0	389
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.3	36.4	36.4	19.7	0.0	0.0	47.2	0.0	42.7	46.4	0.0	42.2
Incr Delay (d2), s/veh	1.1	12.0	11.6	0.1	2.8	2.9	2.4	0.0	0.1	2.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.2	12.6	1.6	0.7	0.7	5.6	0.0	0.6	6.2	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	48.4	48.0	19.8	2.8	2.9	49.6	0.0	42.8	48.9	0.0	42.4
LnGrp LOS	D	D	D	B	A	A	D	A	D	D	A	D
Approach Vol, veh/h		898			1233			226			274	
Approach Delay, s/veh		48.4			4.5			48.9			47.6	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.5	37.1		18.9	10.1	62.6		20.4				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 9.3	* 32		25.6	9.4	* 32		27.3				
Max Q Clear Time (g_c+I1), s	6.0	26.4		13.8	4.6	2.0		15.2				
Green Ext Time (p_c), s	0.0	1.4		0.4	0.0	3.3		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		27.8	
HCM 6th LOS		C	

Notes

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



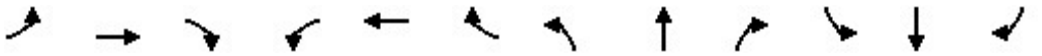
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	512	100	195	615	35	40	180	132	82	450	220
Future Volume (veh/h)	200	512	100	195	615	35	40	180	132	82	450	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	539	92	205	647	34	42	189	19	86	474	232
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	557	1306	222	231	836	44	54	294	242	262	524	435
Arrive On Green	0.31	0.43	0.43	0.13	0.24	0.24	0.03	0.16	0.16	0.15	0.28	0.28
Sat Flow, veh/h	1781	3022	514	1781	3427	180	1781	1870	1540	1781	1870	1551
Grp Volume(v), veh/h	211	316	315	205	335	346	42	189	19	86	474	232
Grp Sat Flow(s),veh/h/ln	1781	1777	1759	1781	1777	1830	1781	1870	1540	1781	1870	1551
Q Serve(g_s), s	11.5	15.4	15.5	14.2	22.0	22.0	2.9	11.8	1.0	5.4	30.5	7.2
Cycle Q Clear(g_c), s	11.5	15.4	15.5	14.2	22.0	22.0	2.9	11.8	1.0	5.4	30.5	7.2
Prop In Lane	1.00		0.29	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	768	760	231	434	446	54	294	242	262	524	435
V/C Ratio(X)	0.38	0.41	0.41	0.89	0.77	0.77	0.78	0.64	0.08	0.33	0.90	0.53
Avail Cap(c_a), veh/h	557	768	760	248	434	446	148	557	458	262	551	457
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	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	24.5	24.6	53.5	44.0	44.1	60.2	49.4	25.1	47.8	43.4	7.8
Incr Delay (d2), s/veh	0.2	1.6	1.7	23.5	10.4	10.2	8.6	3.3	0.2	0.3	18.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	6.8	6.8	7.8	10.9	11.2	1.5	5.9	0.5	2.5	16.8	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	26.2	26.3	77.0	54.4	54.3	68.8	52.7	25.3	48.0	61.7	9.3
LnGrp LOS	C	C	C	E	D	D	E	D	C	D	E	A
Approach Vol, veh/h		842			886			250			792	
Approach Delay, s/veh		28.1			59.6			53.3			44.9	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	58.0	7.8	39.0	43.7	34.5	23.2	23.6
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	17.4	43.8	10.4	* 36	* 31	* 30	* 10	* 36
Max Q Clear Time (g_c+I1), s	16.2	17.5	4.9	32.5	13.5	24.0	7.4	13.8
Green Ext Time (p_c), s	0.0	6.0	0.0	1.7	0.3	2.6	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	45.2
HCM 6th LOS	D

Notes

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



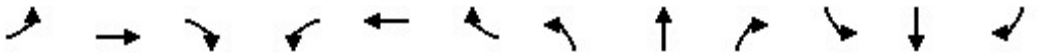
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	312	30	245	455	95	30	170	202	112	300	60
Future Volume (veh/h)	50	312	30	245	455	95	30	170	202	112	300	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	328	28	258	479	43	32	179	31	118	316	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	518	44	429	912	751	87	287	236	188	412	335
Arrive On Green	0.07	0.31	0.30	0.48	0.98	0.98	0.05	0.15	0.15	0.11	0.22	0.22
Sat Flow, veh/h	1781	1694	145	1781	1870	1539	1781	1870	1540	1781	1870	1523
Grp Volume(v), veh/h	53	0	356	258	479	43	32	179	31	118	316	15
Grp Sat Flow(s),veh/h/ln	1781	0	1838	1781	1870	1539	1781	1870	1540	1781	1870	1523
Q Serve(g_s), s	2.6	0.0	15.0	9.5	1.2	0.0	1.6	8.1	1.6	5.7	14.3	0.7
Cycle Q Clear(g_c), s	2.6	0.0	15.0	9.5	1.2	0.0	1.6	8.1	1.6	5.7	14.3	0.7
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	562	429	912	751	87	287	236	188	412	335
V/C Ratio(X)	0.46	0.00	0.63	0.60	0.53	0.06	0.37	0.62	0.13	0.63	0.77	0.04
Avail Cap(c_a), veh/h	158	0	562	429	912	751	164	559	460	188	559	455
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	26.9	20.2	0.6	0.2	41.4	35.7	32.9	38.5	32.9	27.6
Incr Delay (d2), s/veh	1.0	0.0	5.4	1.7	2.2	0.1	1.0	3.1	0.4	4.9	5.4	0.1
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	1.2	0.0	7.3	3.4	0.8	0.1	0.7	3.9	0.6	2.7	7.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	32.3	21.9	2.7	0.3	42.4	38.8	33.3	43.4	38.4	27.7
LnGrp LOS	D	A	C	C	A	A	D	D	C	D	D	C
Approach Vol, veh/h		409			780			242			449	
Approach Delay, s/veh		33.5			8.9			38.6			39.3	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	31.5	8.4	23.8	9.9	47.9	14.4	17.8
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 11	* 27	8.3	* 26	8.0	30.2	* 8.3	* 26
Max Q Clear Time (g_c+I1), s	11.5	17.0	3.6	16.3	4.6	3.2	7.7	10.1
Green Ext Time (p_c), s	0.0	1.3	0.0	1.8	0.0	2.9	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

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



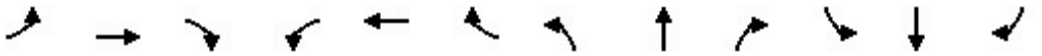
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	616	20	40	675	60	40	20	60	40	20	80
Future Volume (veh/h)	20	616	20	40	675	60	40	20	60	40	20	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	648	20	42	711	61	42	21	4	42	21	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	914	28	395	1208	104	167	74	11	96	42	116
Arrive On Green	0.05	1.00	1.00	0.22	0.71	0.71	0.13	0.13	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1781	1803	56	1781	1695	145	776	562	85	350	329	905
Grp Volume(v), veh/h	21	0	668	42	0	772	67	0	0	147	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1859	1781	0	1840	1423	0	0	1584	0	0
Q Serve(g_s), s	1.0	0.0	0.0	1.7	0.0	18.7	0.0	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	0.0	1.7	0.0	18.7	3.6	0.0	0.0	7.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.08	0.63		0.06	0.29		0.57
Lane Grp Cap(c), veh/h	40	0	942	395	0	1311	252	0	0	254	0	0
V/C Ratio(X)	0.52	0.00	0.71	0.11	0.00	0.59	0.27	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	186	0	942	395	0	1311	431	0	0	448	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	0.0	0.0	27.9	0.0	6.4	35.4	0.0	0.0	37.7	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.0	4.5	0.0	0.0	1.9	0.4	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.7	0.0	6.7	1.3	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	4.5	27.9	0.0	8.4	35.8	0.0	0.0	39.3	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	D	A	A	D	A	A
Approach Vol, veh/h		689			814			67			147	
Approach Delay, s/veh		5.8			9.4			35.8			39.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	68.1		15.8	24.6	49.6		15.8				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	45.0		* 22	9.4	* 45		* 22				
Max Q Clear Time (g_c+I1), s	3.0	20.7		9.9	3.7	2.0		5.6				
Green Ext Time (p_c), s	0.0	9.0		0.5	0.0	8.7		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.5
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)	331	551	40	60	640	400	30	41	31	210	20	182
Future Volume (veh/h)	331	551	40	60	640	400	30	41	31	210	20	182
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	580	39	63	674	337	32	43	13	236	0	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	1451	97	190	1157	509	230	350	101	536	0	234
Arrive On Green	0.21	0.43	0.42	0.11	0.33	0.33	0.13	0.13	0.12	0.15	0.00	0.15
Sat Flow, veh/h	1781	3376	227	1781	3554	1564	1781	2713	781	3563	0	1558
Grp Volume(v), veh/h	348	305	314	63	674	337	32	27	29	236	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1826	1781	1777	1564	1781	1777	1717	1781	0	1558
Q Serve(g_s), s	16.9	10.5	10.5	2.9	14.0	16.4	1.4	1.2	1.3	5.3	0.0	1.2
Cycle Q Clear(g_c), s	16.9	10.5	10.5	2.9	14.0	16.4	1.4	1.2	1.3	5.3	0.0	1.2
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	382	763	784	190	1157	509	230	229	221	536	0	234
V/C Ratio(X)	0.91	0.40	0.40	0.33	0.58	0.66	0.14	0.12	0.13	0.44	0.00	0.10
Avail Cap(c_a), veh/h	402	923	948	302	1858	818	720	718	694	1251	0	547
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	0.00	1.00
Uniform Delay (d), s/veh	34.0	17.4	17.4	36.6	24.9	25.7	34.2	34.1	34.3	34.2	0.0	32.5
Incr Delay (d2), s/veh	23.2	0.5	0.5	0.4	0.7	2.1	0.2	0.2	0.2	0.4	0.0	0.1
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	9.5	4.1	4.3	1.3	5.7	6.1	0.6	0.5	0.5	2.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	17.9	17.9	37.0	25.5	27.8	34.4	34.3	34.5	34.6	0.0	32.6
LnGrp LOS	E	B	B	D	C	C	C	C	C	C	A	C
Approach Vol, veh/h		967			1074			88			260	
Approach Delay, s/veh		32.0			26.9			34.4			34.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	42.3		15.4	23.0	32.8		17.3				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	4.9	12.5		3.4	18.9	18.4		7.3				
Green Ext Time (p_c), s	0.0	5.9		0.3	0.1	9.1		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		30.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1383	465	0	1515	380	390
Future Volume (veh/h)	1383	465	0	1515	380	390
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1456	0	0	1595	400	305
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2838		0	2838	473	382
Arrive On Green	0.80	0.00	0.00	0.80	0.14	0.14
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1456	0	0	1595	400	305
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	17.3	0.0	0.0	20.3	14.0	13.1
Cycle Q Clear(g_c), s	17.3	0.0	0.0	20.3	14.0	13.1
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2838		0	2838	473	382
V/C Ratio(X)	0.51		0.00	0.56	0.85	0.80
Avail Cap(c_a), veh/h	2838		0	2838	803	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.3	0.0	0.0	4.6	52.2	51.9
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.8	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	6.2	6.2	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.9	0.0	0.0	5.4	53.9	53.3
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h	1456	A		1595	705	
Approach Delay, s/veh	4.9			5.4	53.7	
Approach LOS	A			A	D	

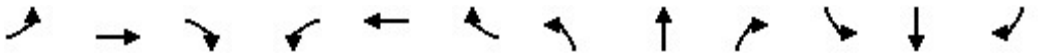
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	103.0				103.0	21.0
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 86				* 86	28.0
Max Q Clear Time (g_c+I1), s	19.3				22.3	16.0
Green Ext Time (p_c), s	2.6				3.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

Notes

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

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



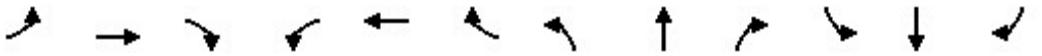
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1388	220	280	1355	0	0	0	0	460	0	340
Future Volume (veh/h)	0	1388	220	280	1355	0	0	0	0	460	0	340
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1461	179	295	1426	0				484	0	318
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	1	1768	777	465	2708	0				504	0	371
Arrive On Green	0.00	0.50	0.50	0.23	0.76	0.00				0.28	0.00	0.27
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1461	179	295	1426	0				484	0	318
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	43.5	8.1	16.2	19.8	0.0				33.2	0.0	27.8
Cycle Q Clear(g_c), s	0.0	43.5	8.1	16.2	19.8	0.0				33.2	0.0	27.8
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	1	1768	777	465	2708	0				504	0	371
V/C Ratio(X)	0.00	0.83	0.23	0.63	0.53	0.00				0.96	0.00	0.86
Avail Cap(c_a), veh/h	230	1768	777	465	2708	0				504	0	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.87	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	26.6	17.7	43.1	5.9	0.0				43.8	0.0	61.1
Incr Delay (d2), s/veh	0.0	4.0	0.6	2.2	0.7	0.0				29.8	0.0	17.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.9	3.0	4.2	6.6	0.0				18.7	0.0	22.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.6	18.3	45.3	6.6	0.0				73.6	0.0	78.1
LnGrp LOS	A	C	B	D	A	A				E	A	E
Approach Vol, veh/h		1640			1721						802	
Approach Delay, s/veh		29.2			13.2						75.4	
Approach LOS		C			B						E	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	33.2	65.7		39.1	0.0	98.9
Change Period (Y+Rc), s	4.6	* 4.6		5.1	3.0	4.6
Max Green Setting (Gmax), s	15.0	* 61		34.0	17.0	60.3
Max Q Clear Time (g_c+I1), s	18.2	45.5		35.2	0.0	21.8
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1368	60	290	1255	140	110	40	70	190	20	32
Future Volume (veh/h)	31	1368	60	290	1255	140	110	40	70	190	20	32
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1440	61	305	1321	143	79	94	5	200	21	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1899	80	358	2021	218	146	153	126	247	259	215
Arrive On Green	0.02	0.55	0.54	0.10	0.63	0.62	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	3471	147	3456	3228	348	1781	1870	1542	1781	1870	1551
Grp Volume(v), veh/h	33	735	766	305	724	740	79	94	5	200	21	6
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1728	1777	1798	1781	1870	1542	1781	1870	1551
Q Serve(g_s), s	2.3	39.7	40.0	10.8	31.9	32.5	5.3	6.0	0.4	13.5	1.2	0.4
Cycle Q Clear(g_c), s	2.3	39.7	40.0	10.8	31.9	32.5	5.3	6.0	0.4	13.5	1.2	0.4
Prop In Lane	1.00		0.08	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	972	1007	358	1113	1126	146	153	126	247	259	215
V/C Ratio(X)	0.79	0.76	0.76	0.85	0.65	0.66	0.54	0.61	0.04	0.81	0.08	0.03
Avail Cap(c_a), veh/h	221	972	1007	424	1113	1126	382	401	331	388	407	338
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	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	21.7	21.8	54.7	14.6	14.8	54.7	55.0	52.4	51.8	46.5	46.2
Incr Delay (d2), s/veh	11.4	5.5	5.4	10.4	2.5	2.6	1.2	1.5	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	17.4	18.2	5.2	13.0	13.4	2.4	2.9	0.1	6.3	0.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.7	27.2	27.2	65.0	17.1	17.3	55.8	56.5	52.5	55.1	46.6	46.2
LnGrp LOS	E	C	C	E	B	B	E	E	D	E	D	D
Approach Vol, veh/h		1534			1769			178			227	
Approach Delay, s/veh		28.2			25.5			56.1			54.1	
Approach LOS		C			C			E			D	

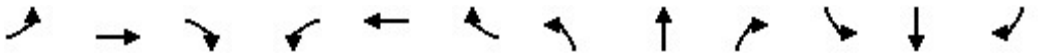
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	71.8		21.2	6.9	81.8		14.2				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	15.2	* 38		* 26	15.4	* 38		26.0				
Max Q Clear Time (g_c+I1), s	12.8	42.0		15.5	4.3	34.5		8.0				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	1.9		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		29.8	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

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



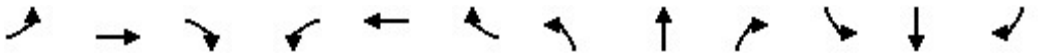
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1110	62	113	1114	140	43	150	209	130	120	60
Future Volume (veh/h)	60	1110	62	113	1114	140	43	150	209	130	120	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	1168	62	119	1173	141	45	158	28	137	126	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1649	87	138	1581	189	55	194	210	159	147	262
Arrive On Green	0.06	0.48	0.48	0.08	0.50	0.49	0.13	0.13	0.13	0.17	0.17	0.17
Sat Flow, veh/h	1781	3428	182	1781	3187	382	410	1440	1560	950	873	1561
Grp Volume(v), veh/h	63	605	625	119	653	661	203	0	28	263	0	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1777	1792	1850	0	1560	1823	0	1561
Q Serve(g_s), s	4.0	31.0	31.1	7.6	33.9	34.2	12.4	0.0	1.8	16.2	0.0	0.5
Cycle Q Clear(g_c), s	4.0	31.0	31.1	7.6	33.9	34.2	12.4	0.0	1.8	16.2	0.0	0.5
Prop In Lane	1.00		0.10	1.00		0.21	0.22		1.00	0.52		1.00
Lane Grp Cap(c), veh/h	113	855	882	138	881	889	249	0	210	306	0	262
V/C Ratio(X)	0.56	0.71	0.71	0.86	0.74	0.74	0.81	0.00	0.13	0.86	0.00	0.03
Avail Cap(c_a), veh/h	177	855	882	177	881	889	411	0	346	435	0	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	23.6	23.7	52.8	23.2	23.4	48.7	0.0	44.1	46.8	0.0	40.3
Incr Delay (d2), s/veh	1.6	4.9	4.8	23.8	3.0	3.0	2.5	0.0	0.1	8.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	13.8	14.3	4.3	14.5	14.8	5.9	0.0	0.7	8.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	28.6	28.5	76.6	26.2	26.4	51.2	0.0	44.2	55.5	0.0	40.3
LnGrp LOS	D	C	C	E	C	C	D	A	D	E	A	D
Approach Vol, veh/h		1293			1433			231			271	
Approach Delay, s/veh		29.8			30.5			50.3			55.0	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.9	59.8		19.6	11.3	61.4		23.4				
Change Period (Y+Rc), s	3.5	* 4.8		* 4.7	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	12.0	* 55		* 25	12.0	* 55		27.0				
Max Q Clear Time (g_c+I1), s	9.6	33.1		14.4	6.0	36.2		18.2				
Green Ext Time (p_c), s	0.0	3.6		0.4	0.0	3.9		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		33.7	
HCM 6th LOS		C	

Notes

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



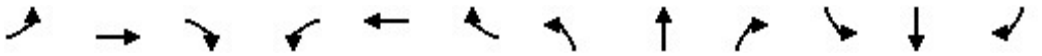
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	595	90	194	603	93	70	410	225	95	340	270
Future Volume (veh/h)	270	595	90	194	603	93	70	410	225	95	340	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	626	86	204	635	89	74	432	237	100	358	284
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	1239	170	229	841	118	94	505	419	123	548	455
Arrive On Green	0.25	0.40	0.39	0.13	0.27	0.26	0.05	0.27	0.27	0.07	0.29	0.29
Sat Flow, veh/h	1781	3125	428	1781	3114	436	1781	1870	1551	1781	1870	1552
Grp Volume(v), veh/h	284	355	357	204	362	362	74	432	237	100	358	284
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1781	1777	1773	1781	1870	1551	1781	1870	1552
Q Serve(g_s), s	17.6	18.7	18.8	14.0	23.1	23.3	5.1	27.2	11.6	6.9	20.8	10.4
Cycle Q Clear(g_c), s	17.6	18.7	18.8	14.0	23.1	23.3	5.1	27.2	11.6	6.9	20.8	10.4
Prop In Lane	1.00		0.24	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	446	704	704	229	480	479	94	505	419	123	548	455
V/C Ratio(X)	0.64	0.50	0.51	0.89	0.75	0.76	0.79	0.86	0.57	0.81	0.65	0.62
Avail Cap(c_a), veh/h	446	704	704	236	480	479	135	561	465	144	570	473
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	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	28.2	28.3	53.1	41.5	41.6	58.0	43.0	19.6	56.9	38.3	10.6
Incr Delay (d2), s/veh	2.3	2.6	2.6	21.0	6.8	6.9	10.7	12.1	1.8	21.8	2.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	8.5	8.5	7.6	11.0	11.1	2.6	14.3	4.4	3.9	10.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	30.8	30.9	74.2	48.3	48.5	68.7	55.1	21.4	78.7	41.3	13.5
LnGrp LOS	D	C	C	E	D	D	E	E	C	E	D	B
Approach Vol, veh/h		996			928			743			742	
Approach Delay, s/veh		34.5			54.1			45.7			35.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	53.2	10.5	40.3	35.6	37.5	13.4	37.5
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	16.4	43.8	9.4	* 37	* 27	* 33	* 10	* 36
Max Q Clear Time (g_c+I1), s	16.0	20.8	7.1	22.8	19.6	25.3	8.9	29.2
Green Ext Time (p_c), s	0.0	6.6	0.0	4.1	0.3	3.4	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Notes

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



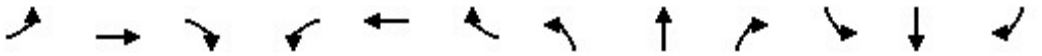
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	465	20	183	423	94	50	280	355	195	190	60
Future Volume (veh/h)	60	465	20	183	423	94	50	280	355	195	190	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	489	20	193	445	44	53	295	67	205	200	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	745	30	223	908	747	96	357	295	231	512	418
Arrive On Green	0.06	0.42	0.41	0.04	0.16	0.16	0.05	0.19	0.19	0.13	0.27	0.27
Sat Flow, veh/h	1781	1782	73	1781	1870	1539	1781	1870	1545	1781	1870	1529
Grp Volume(v), veh/h	63	0	509	193	445	44	53	295	67	205	200	15
Grp Sat Flow(s),veh/h/ln	1781	0	1855	1781	1870	1539	1781	1870	1545	1781	1870	1529
Q Serve(g_s), s	4.3	0.0	27.3	13.4	26.9	1.8	3.6	18.8	3.4	14.0	10.8	0.9
Cycle Q Clear(g_c), s	4.3	0.0	27.3	13.4	26.9	1.8	3.6	18.8	3.4	14.0	10.8	0.9
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	776	223	908	747	96	357	295	231	512	418
V/C Ratio(X)	0.62	0.00	0.66	0.87	0.49	0.06	0.55	0.83	0.23	0.89	0.39	0.04
Avail Cap(c_a), veh/h	187	0	776	317	908	747	249	439	363	263	512	418
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	28.9	58.4	38.1	9.7	57.2	48.2	24.0	53.1	36.6	33.0
Incr Delay (d2), s/veh	2.3	0.0	4.3	12.2	1.9	0.2	1.8	11.5	0.6	24.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	13.1	7.2	14.0	1.1	1.7	9.9	1.8	7.9	5.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	33.2	70.6	40.0	9.9	59.0	59.7	24.6	77.6	37.3	33.1
LnGrp LOS	E	A	C	E	D	A	E	E	C	E	D	C
Approach Vol, veh/h		572			682			415			420	
Approach Delay, s/veh		36.1			46.7			53.9			56.8	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	55.9	10.7	37.9	11.1	64.3	21.0	27.6
Change Period (Y+Rc), s	4.0	* 4.7	4.0	* 4.9	4.0	* 4.7	* 4.9	* 4.7
Max Green Setting (Gmax), s	22.1	* 38	17.3	* 29	13.0	* 47	* 18	* 28
Max Q Clear Time (g_c+I1), s	15.4	29.3	5.6	12.8	6.3	28.9	16.0	20.8
Green Ext Time (p_c), s	0.2	1.9	0.0	1.4	0.0	2.4	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

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



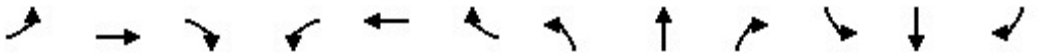
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	895	40	40	630	60	20	20	40	40	20	20
Future Volume (veh/h)	40	895	40	40	630	60	20	20	40	40	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		1.00	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	942	41	42	663	61	21	21	-17	42	21	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1400	61	55	1326	122	525	512	0	98	41	32
Arrive On Green	0.03	0.79	0.78	0.03	0.79	0.78	0.08	0.08	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1781	1777	77	1781	1683	155	1191	1321	-1017	669	496	388
Grp Volume(v), veh/h	42	0	983	42	0	724	0	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1854	1781	0	1838	0	0	0	1553	0	0
Q Serve(g_s), s	2.9	0.0	29.7	2.9	0.0	17.1	0.0	0.0	0.0	5.2	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	29.7	2.9	0.0	17.1	0.0	0.0	0.0	6.4	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.08	0.84		-0.68	0.50		0.25
Lane Grp Cap(c), veh/h	55	0	1461	55	0	1449	0	0	0	171	0	0
V/C Ratio(X)	0.76	0.00	0.67	0.76	0.00	0.50	0.00	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	135	0	1461	149	0	1449	0	0	0	636	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.6	0.0	5.9	59.6	0.0	4.6	0.0	0.0	0.0	55.2	0.0	0.0
Incr Delay (d2), s/veh	8.0	0.0	2.5	8.0	0.0	1.2	0.0	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	10.7	1.4	0.0	6.0	0.0	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	0.0	8.4	67.6	0.0	5.8	0.0	0.0	0.0	56.8	0.0	0.0
LnGrp LOS	E	A	A	E	A	A	A	A	A	E	A	A
Approach Vol, veh/h		1025			766			0			84	
Approach Delay, s/veh		10.9			9.2			0.0			56.8	
Approach LOS		B			A						E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	101.7		14.5	7.8	101.7		14.5				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.0	4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	54.0		* 47	10.4	53.0		* 47				
Max Q Clear Time (g_c+I1), s	4.9	19.1		8.4	4.9	31.7		0.0				
Green Ext Time (p_c), s	0.0	9.4		0.4	0.0	11.7		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		12.3
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)	120	634	116	221	556	130	109	71	185	230	94	290
Future Volume (veh/h)	120	634	116	221	556	130	109	71	185	230	94	290
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	667	121	233	585	57	115	75	175	170	199	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	974	177	272	1175	517	281	280	247	292	307	256
Arrive On Green	0.15	0.33	0.31	0.15	0.33	0.33	0.16	0.16	0.15	0.16	0.16	0.16
Sat Flow, veh/h	1781	2997	543	1781	3554	1564	1781	1777	1564	1781	1870	1558
Grp Volume(v), veh/h	126	395	393	233	585	57	115	75	175	170	199	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1781	1777	1564	1781	1777	1564	1781	1870	1558
Q Serve(g_s), s	5.3	15.7	15.8	10.4	10.7	2.1	4.7	3.0	8.7	7.2	8.1	2.0
Cycle Q Clear(g_c), s	5.3	15.7	15.8	10.4	10.7	2.1	4.7	3.0	8.7	7.2	8.1	2.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	578	573	272	1175	517	281	280	247	292	307	256
V/C Ratio(X)	0.47	0.68	0.69	0.86	0.50	0.11	0.41	0.27	0.71	0.58	0.65	0.17
Avail Cap(c_a), veh/h	438	1006	998	329	2025	891	785	783	689	682	716	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	23.8	24.0	33.6	21.8	18.9	30.8	30.1	32.8	31.4	31.8	29.2
Incr Delay (d2), s/veh	0.5	2.0	2.1	15.0	0.5	0.1	0.7	0.4	2.8	1.4	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.5	6.5	5.4	4.3	0.7	2.0	1.3	3.3	3.1	3.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	25.8	26.0	48.6	22.3	19.0	31.5	30.5	35.6	32.8	33.5	29.5
LnGrp LOS	C	C	C	D	C	B	C	C	D	C	C	C
Approach Vol, veh/h		914			875			365			413	
Approach Delay, s/veh		26.8			29.1			33.3			32.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.4	30.7		16.8	16.2	30.9		17.3				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	12.4	17.8		10.7	7.3	12.7		10.1				
Green Ext Time (p_c), s	0.1	7.6		1.4	0.1	6.4		1.3				

Intersection Summary		
HCM 6th Ctrl Delay		29.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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

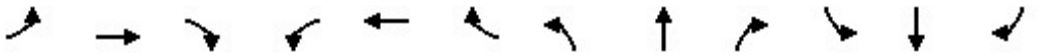
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1286	366	0	1457	315	250
Future Volume (veh/h)	1286	366	0	1457	315	250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1354	0	0	1534	332	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2876		0	2876	412	333
Arrive On Green	0.81	0.00	0.00	0.81	0.12	0.12
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1354	0	0	1534	332	114
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	13.2	0.0	0.0	16.2	10.5	4.2
Cycle Q Clear(g_c), s	13.2	0.0	0.0	16.2	10.5	4.2
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2876		0	2876	412	333
V/C Ratio(X)	0.47		0.00	0.53	0.81	0.34
Avail Cap(c_a), veh/h	2876		0	2876	796	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.3	0.0	0.0	3.6	48.0	45.3
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.7	1.4	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	3.6	0.0	0.0	4.4	4.6	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.8	0.0	0.0	4.3	49.5	45.5
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h	1354	A		1534	446	
Approach Delay, s/veh	3.8			4.3	48.5	
Approach LOS	A			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	94.6				94.6	17.4
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 77				* 77	25.0
Max Q Clear Time (g_c+I1), s	15.2				18.2	12.5
Green Ext Time (p_c), s	2.4				2.8	0.1

Intersection Summary		
HCM 6th Ctrl Delay	10.0	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1302	263	390	1162	0	0	0	0	350	0	408
Future Volume (veh/h)	0	1302	263	390	1162	0	0	0	0	350	0	408
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1371	220	411	1223	0				368	0	429
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	362	1651	725	403	1583	0				410	0	657
Arrive On Green	0.00	0.93	0.93	0.20	0.45	0.00				0.23	0.00	0.21
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1371	220	411	1223	0				368	0	429
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	13.4	1.6	22.2	32.6	0.0				22.5	0.0	1.6
Cycle Q Clear(g_c), s	0.0	13.4	1.6	22.2	32.6	0.0				22.5	0.0	1.6
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	362	1651	725	403	1583	0				410	0	657
V/C Ratio(X)	0.00	0.83	0.30	1.02	0.77	0.00				0.90	0.00	0.65
Avail Cap(c_a), veh/h	362	1651	725	403	1583	0				447	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	2.2	44.9	26.3	0.0				41.9	0.0	26.3
Incr Delay (d2), s/veh	0.0	5.0	1.1	50.3	3.7	0.0				18.6	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
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.6	8.3	14.2	0.0				11.9	0.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.6	3.2	95.2	30.0	0.0				60.5	0.0	27.9
LnGrp LOS	A	A	A	F	C	A				E	A	C
Approach Vol, veh/h		1591			1634						797	
Approach Delay, s/veh		7.0			46.4						42.9	
Approach LOS		A			D						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	26.2	56.0		29.8	28.3	53.9
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 22	49.1		27.0	23.0	* 49
Max Q Clear Time (g_c+I1), s	24.2	15.4		24.5	0.0	34.6
Green Ext Time (p_c), s	0.0	2.3		0.2	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	30.1
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)	31	1131	30	200	1218	152	20	20	150	204	20	64
Future Volume (veh/h)	31	1131	30	200	1218	152	20	20	150	204	20	64
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1191	30	211	1282	154	21	21	10	215	21	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1969	50	265	1940	232	134	140	116	266	279	232
Arrive On Green	0.02	0.56	0.55	0.15	1.00	1.00	0.08	0.08	0.08	0.15	0.15	0.15
Sat Flow, veh/h	1781	3540	89	3456	3187	381	1781	1870	1541	1781	1870	1552
Grp Volume(v), veh/h	33	598	623	211	712	724	21	21	10	215	21	11
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1728	1777	1791	1781	1870	1541	1781	1870	1552
Q Serve(g_s), s	2.1	25.2	25.2	6.6	0.0	0.0	1.2	1.2	0.7	13.1	1.1	0.7
Cycle Q Clear(g_c), s	2.1	25.2	25.2	6.6	0.0	0.0	1.2	1.2	0.7	13.1	1.1	0.7
Prop In Lane	1.00		0.05	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	988	1030	265	1081	1090	134	140	116	266	279	232
V/C Ratio(X)	0.79	0.60	0.61	0.80	0.66	0.66	0.16	0.15	0.09	0.81	0.08	0.05
Avail Cap(c_a), veh/h	146	988	1030	284	1081	1090	423	444	366	429	451	374
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	54.4	16.6	16.6	46.6	0.0	0.0	48.5	48.5	48.2	46.1	41.0	40.8
Incr Delay (d2), s/veh	11.9	2.7	2.6	12.3	3.1	3.2	0.2	0.2	0.1	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.6	11.0	3.1	0.9	1.0	0.6	0.6	0.3	6.0	0.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	19.4	19.3	58.9	3.1	3.2	48.7	48.6	48.3	48.4	41.0	40.8
LnGrp LOS	E	B	B	E	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1254			1647			52			247	
Approach Delay, s/veh		20.6			10.3			48.6			47.4	
Approach LOS		C			B			D			D	

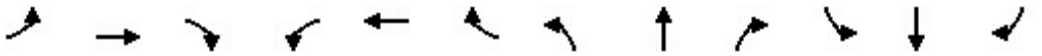
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	66.3		20.7	6.6	72.3		12.4				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	9.2	* 32		* 26	9.2	* 33		26.0				
Max Q Clear Time (g_c+I1), s	8.6	27.2		15.1	4.1	2.0		3.2				
Green Ext Time (p_c), s	0.0	1.9		0.1	0.0	4.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		17.8
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

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



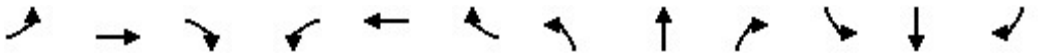
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	859	20	132	977	157	30	164	157	130	126	50
Future Volume (veh/h)	44	859	20	132	977	157	30	164	157	130	126	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	904	20	139	1028	156	32	173	42	137	133	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	1050	23	430	1517	230	39	213	212	160	155	270
Arrive On Green	0.06	0.30	0.29	0.48	0.98	0.97	0.14	0.14	0.14	0.17	0.17	0.17
Sat Flow, veh/h	1781	3552	79	1781	3084	467	290	1566	1560	926	899	1561
Grp Volume(v), veh/h	46	452	472	139	592	592	205	0	42	270	0	53
Grp Sat Flow(s),veh/h/ln	1781	1777	1854	1781	1777	1774	1856	0	1560	1824	0	1561
Q Serve(g_s), s	2.8	26.9	26.9	5.4	1.8	2.2	12.0	0.0	2.7	16.1	0.0	3.3
Cycle Q Clear(g_c), s	2.8	26.9	26.9	5.4	1.8	2.2	12.0	0.0	2.7	16.1	0.0	3.3
Prop In Lane	1.00		0.04	1.00		0.26	0.16		1.00	0.51		1.00
Lane Grp Cap(c), veh/h	101	525	548	430	874	873	252	0	212	315	0	270
V/C Ratio(X)	0.46	0.86	0.86	0.32	0.68	0.68	0.81	0.00	0.20	0.86	0.00	0.20
Avail Cap(c_a), veh/h	142	525	548	430	874	873	434	0	365	454	0	389
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	37.3	37.3	23.4	0.5	0.6	47.0	0.0	43.0	45.0	0.0	39.7
Incr Delay (d2), s/veh	1.2	16.8	16.2	0.2	4.2	4.2	2.4	0.0	0.2	7.7	0.0	0.1
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	1.3	14.0	14.5	2.1	1.3	1.3	5.8	0.0	1.1	8.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	54.0	53.5	23.5	4.7	4.8	49.5	0.0	43.2	52.7	0.0	39.8
LnGrp LOS	D	D	D	C	A	A	D	A	D	D	A	D
Approach Vol, veh/h		970			1323			247			323	
Approach Delay, s/veh		53.7			6.7			48.4			50.5	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.3	37.1		19.2	10.3	59.1		23.4				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 9.3	* 32		25.6	9.4	* 32		27.3				
Max Q Clear Time (g_c+I1), s	7.4	28.9		14.0	4.8	4.2		18.1				
Green Ext Time (p_c), s	0.0	1.1		0.4	0.0	3.6		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		31.2
HCM 6th LOS		C

Notes

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



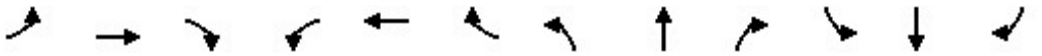
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	532	118	213	647	59	40	189	145	144	473	228
Future Volume (veh/h)	203	532	118	213	647	59	40	189	145	144	473	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	214	560	111	224	681	59	42	199	33	152	498	240
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	1218	241	248	805	70	54	304	250	267	539	447
Arrive On Green	0.30	0.41	0.41	0.14	0.24	0.24	0.03	0.16	0.16	0.15	0.29	0.29
Sat Flow, veh/h	1781	2941	581	1781	3297	285	1781	1870	1541	1781	1870	1552
Grp Volume(v), veh/h	214	338	333	224	367	373	42	199	33	152	498	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1744	1781	1777	1806	1781	1870	1541	1781	1870	1552
Q Serve(g_s), s	11.9	17.2	17.3	15.5	24.6	24.6	2.9	12.5	1.7	9.9	32.3	7.4
Cycle Q Clear(g_c), s	11.9	17.2	17.3	15.5	24.6	24.6	2.9	12.5	1.7	9.9	32.3	7.4
Prop In Lane	1.00		0.33	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	543	736	723	248	434	441	54	304	250	267	539	447
V/C Ratio(X)	0.39	0.46	0.46	0.90	0.85	0.85	0.78	0.66	0.13	0.57	0.92	0.54
Avail Cap(c_a), veh/h	543	736	723	248	434	441	148	557	459	267	551	457
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	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	26.5	26.6	53.0	45.0	45.1	60.2	49.1	24.2	49.4	43.2	7.8
Incr Delay (d2), s/veh	0.2	2.1	2.1	26.6	14.5	14.4	8.6	3.4	0.3	1.9	21.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.7	7.6	8.7	12.5	12.8	1.5	6.2	0.9	4.6	18.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	28.5	28.7	79.6	59.5	59.5	68.8	52.5	24.5	51.3	64.8	9.4
LnGrp LOS	C	C	C	E	E	E	E	D	C	D	E	A
Approach Vol, veh/h		885			964			274			890	
Approach Delay, s/veh		30.0			64.2			51.6			47.5	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	55.8	7.8	40.0	42.7	34.5	23.5	24.3
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	17.4	43.8	10.4	* 36	* 31	* 30	* 10	* 36
Max Q Clear Time (g_c+I1), s	17.5	19.3	4.9	34.3	13.9	26.6	11.9	14.5
Green Ext Time (p_c), s	0.0	6.3	0.0	0.9	0.3	1.7	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

Notes

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



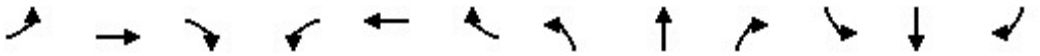
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	358	30	263	487	109	30	173	219	118	303	60
Future Volume (veh/h)	50	358	30	263	487	109	30	173	219	118	303	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	377	28	277	513	58	32	182	49	124	319	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	524	39	426	910	749	87	291	240	187	415	338
Arrive On Green	0.07	0.31	0.30	0.48	0.97	0.97	0.05	0.16	0.16	0.10	0.22	0.22
Sat Flow, veh/h	1781	1715	127	1781	1870	1539	1781	1870	1540	1781	1870	1523
Grp Volume(v), veh/h	53	0	405	277	513	58	32	182	49	124	319	15
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1781	1870	1539	1781	1870	1540	1781	1870	1523
Q Serve(g_s), s	2.6	0.0	17.6	10.6	1.5	0.1	1.6	8.2	2.5	6.0	14.4	0.7
Cycle Q Clear(g_c), s	2.6	0.0	17.6	10.6	1.5	0.1	1.6	8.2	2.5	6.0	14.4	0.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	563	426	910	749	87	291	240	187	415	338
V/C Ratio(X)	0.46	0.00	0.72	0.65	0.56	0.08	0.37	0.62	0.20	0.66	0.77	0.04
Avail Cap(c_a), veh/h	158	0	563	426	910	749	164	559	460	187	559	455
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	27.8	20.6	0.7	0.2	41.4	35.5	33.1	38.8	32.9	27.5
Incr Delay (d2), s/veh	1.0	0.0	7.7	2.7	2.5	0.2	1.0	3.1	0.6	7.0	5.6	0.1
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	1.2	0.0	8.8	3.8	0.9	0.1	0.7	3.9	1.0	3.0	7.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	35.6	23.3	3.2	0.4	42.4	38.6	33.7	45.8	38.4	27.6
LnGrp LOS	D	A	D	C	A	A	D	D	C	D	D	C
Approach Vol, veh/h		458			848			263			458	
Approach Delay, s/veh		36.3			9.6			38.2			40.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.1	31.5	8.4	23.9	9.9	47.8	14.3	18.0
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 11	* 27	8.3	* 26	8.0	30.2	* 8.3	* 26
Max Q Clear Time (g_c+I1), s	12.6	19.6	3.6	16.4	4.6	3.5	8.0	10.2
Green Ext Time (p_c), s	0.0	1.3	0.0	1.8	0.0	3.2	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

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



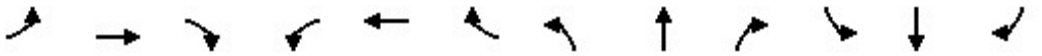
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	676	20	40	736	75	40	20	60	48	20	84
Future Volume (veh/h)	29	676	20	40	736	75	40	20	60	48	20	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	712	20	42	775	77	42	21	4	51	21	88
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	916	26	381	1165	116	171	76	12	108	42	118
Arrive On Green	0.04	0.67	0.67	0.21	0.70	0.69	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1781	1809	51	1781	1670	166	760	545	83	405	306	869
Grp Volume(v), veh/h	31	0	732	42	0	852	67	0	0	160	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	0	1836	1388	0	0	1581	0	0
Q Serve(g_s), s	1.5	0.0	24.3	1.7	0.0	23.6	0.0	0.0	0.0	4.9	0.0	0.0
Cycle Q Clear(g_c), s	1.5	0.0	24.3	1.7	0.0	23.6	3.7	0.0	0.0	8.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.09	0.63		0.06	0.32		0.55
Lane Grp Cap(c), veh/h	53	0	942	381	0	1280	259	0	0	268	0	0
V/C Ratio(X)	0.58	0.00	0.78	0.11	0.00	0.67	0.26	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	186	0	942	381	0	1280	425	0	0	449	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	11.2	28.5	0.0	7.7	34.8	0.0	0.0	37.3	0.0	0.0
Incr Delay (d2), s/veh	3.7	0.0	6.3	0.0	0.0	2.7	0.4	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	8.7	0.7	0.0	8.8	1.3	0.0	0.0	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	17.5	28.5	0.0	10.5	35.2	0.0	0.0	38.9	0.0	0.0
LnGrp LOS	D	A	B	C	A	B	D	A	A	D	A	A
Approach Vol, veh/h		763			894			67			160	
Approach Delay, s/veh		18.6			11.3			35.2			38.9	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	66.8		16.5	23.9	49.6		16.5				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	45.0		* 22	9.4	* 45		* 22				
Max Q Clear Time (g_c+I1), s	3.5	25.6		10.6	3.7	26.3		5.7				
Green Ext Time (p_c), s	0.0	9.1		0.5	0.0	7.3		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			17.5									
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)	330	586	129	223	637	400	153	107	260	210	112	180
Future Volume (veh/h)	330	586	129	223	637	400	153	107	260	210	112	180
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	347	617	133	235	671	337	161	113	254	170	190	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	1022	220	260	1090	479	358	357	315	252	264	220
Arrive On Green	0.19	0.35	0.34	0.15	0.31	0.31	0.20	0.20	0.19	0.14	0.14	0.14
Sat Flow, veh/h	1781	2900	624	1781	3554	1563	1781	1777	1564	1781	1870	1557
Grp Volume(v), veh/h	347	377	373	235	671	337	161	113	254	170	190	21
Grp Sat Flow(s),veh/h/ln	1781	1777	1747	1781	1777	1563	1781	1777	1564	1781	1870	1557
Q Serve(g_s), s	20.0	17.9	18.1	13.3	16.6	19.5	8.1	5.6	15.9	9.3	10.0	1.2
Cycle Q Clear(g_c), s	20.0	17.9	18.1	13.3	16.6	19.5	8.1	5.6	15.9	9.3	10.0	1.2
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	626	616	260	1090	479	358	357	315	252	264	220
V/C Ratio(X)	1.00	0.60	0.60	0.90	0.62	0.70	0.45	0.32	0.81	0.68	0.72	0.10
Avail Cap(c_a), veh/h	347	797	783	260	1604	706	622	620	546	540	567	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	27.3	27.5	43.1	30.4	31.4	36.0	35.0	39.5	41.8	42.1	38.3
Incr Delay (d2), s/veh	48.1	1.3	1.4	30.8	0.8	2.7	0.7	0.4	3.7	2.3	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	7.6	7.5	8.0	7.0	7.5	3.5	2.4	6.3	4.2	4.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.4	28.7	28.9	73.9	31.2	34.1	36.6	35.3	43.2	44.2	44.8	38.5
LnGrp LOS	F	C	C	E	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1097			1243			528			381	
Approach Delay, s/veh		47.9			40.1			39.5			44.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	40.5		24.6	24.0	35.5		18.5				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	15.3	20.1		17.9	22.0	21.5		12.0				
Green Ext Time (p_c), s	0.0	7.0		1.9	0.0	8.6		1.2				

Intersection Summary		
HCM 6th Ctrl Delay	43.1	
HCM 6th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1445	475	0	1576	486	390
Future Volume (veh/h)	1445	475	0	1576	486	390
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1521	0	0	1659	512	305
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2726		0	2726	582	470
Arrive On Green	0.77	0.00	0.00	0.77	0.17	0.17
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1521	0	0	1659	512	305
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	21.6	0.0	0.0	25.3	17.9	12.7
Cycle Q Clear(g_c), s	21.6	0.0	0.0	25.3	17.9	12.7
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2726		0	2726	582	470
V/C Ratio(X)	0.56		0.00	0.61	0.88	0.65
Avail Cap(c_a), veh/h	2726		0	2726	803	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	0.0	0.0	6.3	50.3	48.1
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.0	6.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	0.0	8.4	8.3	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.7	0.0	0.0	7.3	57.0	48.7
LnGrp LOS	A		A	A	E	D
Approach Vol, veh/h	1521	A		1659	817	
Approach Delay, s/veh	6.7			7.3	53.9	
Approach LOS	A			A	D	

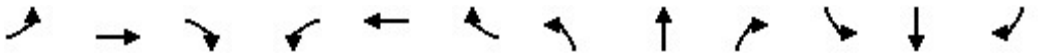
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	99.1				99.1	24.9
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 86				* 86	28.0
Max Q Clear Time (g_c+I1), s	23.6				27.3	19.9
Green Ext Time (p_c), s	2.8				3.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

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

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



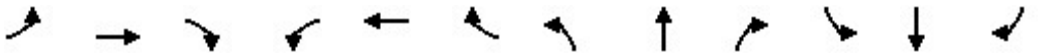
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1460	284	280	1521	0	0	0	0	460	0	397
Future Volume (veh/h)	0	1460	284	280	1521	0	0	0	0	460	0	397
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1537	246	295	1601	0				484	0	378
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	1	1768	777	465	2708	0				504	0	371
Arrive On Green	0.00	0.50	0.50	0.23	0.76	0.00				0.28	0.00	0.27
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1537	246	295	1601	0				484	0	378
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	47.5	11.7	16.2	24.2	0.0				33.2	0.0	33.0
Cycle Q Clear(g_c), s	0.0	47.5	11.7	16.2	24.2	0.0				33.2	0.0	33.0
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	1	1768	777	465	2708	0				504	0	371
V/C Ratio(X)	0.00	0.87	0.32	0.63	0.59	0.00				0.96	0.00	1.02
Avail Cap(c_a), veh/h	230	1768	777	465	2708	0				504	0	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.84	0.84	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.6	18.6	43.1	6.4	0.0				43.8	0.0	60.8
Incr Delay (d2), s/veh	0.0	5.2	0.9	2.2	1.0	0.0				29.8	0.0	51.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.8	4.4	4.2	8.1	0.0				18.7	0.0	29.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	32.8	19.5	45.3	7.3	0.0				73.6	0.0	112.7
LnGrp LOS	A	C	B	D	A	A				E	A	F
Approach Vol, veh/h		1783			1896						862	
Approach Delay, s/veh		31.0			13.2						90.7	
Approach LOS		C			B						F	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	33.2	65.7		39.1	0.0	98.9
Change Period (Y+Rc), s	4.6	* 4.6		5.1	3.0	4.6
Max Green Setting (Gmax), s	15.0	* 61		34.0	17.0	60.3
Max Q Clear Time (g_c+I1), s	18.2	49.5		35.2	0.0	26.2
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	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)	38	1499	60	290	1470	148	110	40	70	195	20	35
Future Volume (veh/h)	38	1499	60	290	1470	148	110	40	70	195	20	35
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	1578	61	305	1547	152	79	94	5	205	21	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	1898	73	358	2018	196	146	153	126	251	264	219
Arrive On Green	0.03	0.54	0.54	0.10	0.62	0.61	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	3486	134	3456	3264	317	1781	1870	1542	1781	1870	1551
Grp Volume(v), veh/h	40	802	837	305	835	864	79	94	5	205	21	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1844	1728	1777	1805	1781	1870	1542	1781	1870	1551
Q Serve(g_s), s	2.8	46.4	47.0	10.8	41.9	43.6	5.3	6.0	0.4	13.9	1.2	0.6
Cycle Q Clear(g_c), s	2.8	46.4	47.0	10.8	41.9	43.6	5.3	6.0	0.4	13.9	1.2	0.6
Prop In Lane	1.00		0.07	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	967	1004	358	1099	1116	146	153	126	251	264	219
V/C Ratio(X)	0.78	0.83	0.83	0.85	0.76	0.77	0.54	0.61	0.04	0.82	0.08	0.04
Avail Cap(c_a), veh/h	221	967	1004	424	1099	1116	382	401	331	388	407	338
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	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	23.5	23.6	54.7	17.0	17.4	54.7	55.0	52.4	51.7	46.3	46.0
Incr Delay (d2), s/veh	9.1	8.1	8.1	9.8	4.0	4.3	1.2	1.5	0.0	4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	20.9	21.9	5.2	17.4	18.4	2.4	2.9	0.1	6.5	0.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.9	31.6	31.7	64.5	21.0	21.7	55.8	56.5	52.5	55.7	46.3	46.0
LnGrp LOS	E	C	C	E	C	C	E	E	D	E	D	D
Approach Vol, veh/h		1679			2004			178			235	
Approach Delay, s/veh		32.6			27.9			56.1			54.5	
Approach LOS		C			C			E			D	

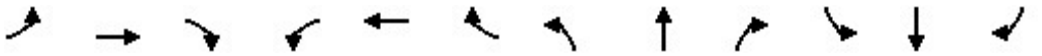
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	71.5		21.5	7.6	80.8		14.2				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	15.2	* 38		* 26	15.4	* 38		26.0				
Max Q Clear Time (g_c+I1), s	12.8	49.0		15.9	4.8	45.6		8.0				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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



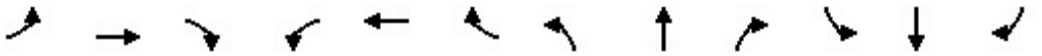
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	1176	60	141	1270	169	40	164	260	147	129	61
Future Volume (veh/h)	67	1176	60	141	1270	169	40	164	260	147	129	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	1238	60	148	1337	172	42	173	82	155	136	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	1565	76	167	1536	196	51	208	218	176	154	283
Arrive On Green	0.06	0.45	0.45	0.09	0.49	0.48	0.14	0.14	0.14	0.18	0.18	0.18
Sat Flow, veh/h	1781	3446	167	1781	3160	403	362	1490	1560	970	851	1562
Grp Volume(v), veh/h	71	638	660	148	747	762	215	0	82	291	0	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1836	1781	1777	1787	1852	0	1560	1822	0	1562
Q Serve(g_s), s	4.8	37.5	37.6	10.1	45.7	46.9	13.9	0.0	5.9	19.1	0.0	0.6
Cycle Q Clear(g_c), s	4.8	37.5	37.6	10.1	45.7	46.9	13.9	0.0	5.9	19.1	0.0	0.6
Prop In Lane	1.00		0.09	1.00		0.23	0.20		1.00	0.53		1.00
Lane Grp Cap(c), veh/h	112	807	834	167	863	868	259	0	218	330	0	283
V/C Ratio(X)	0.63	0.79	0.79	0.89	0.87	0.88	0.83	0.00	0.38	0.88	0.00	0.03
Avail Cap(c_a), veh/h	167	807	834	167	863	868	388	0	327	410	0	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.1	28.5	28.6	54.9	28.0	28.3	51.3	0.0	47.9	48.9	0.0	41.4
Incr Delay (d2), s/veh	2.2	7.8	7.6	38.1	8.8	9.7	5.7	0.0	0.4	14.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	17.4	18.0	6.3	21.0	21.8	6.9	0.0	2.3	10.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.3	36.3	36.1	93.0	36.8	38.1	57.0	0.0	48.3	63.8	0.0	41.4
LnGrp LOS	E	D	D	F	D	D	E	A	D	E	A	D
Approach Vol, veh/h		1369			1657			297			300	
Approach Delay, s/veh		37.3			42.4			54.6			63.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	59.8		21.1	11.7	63.6		26.2				
Change Period (Y+Rc), s	3.5	* 4.8		* 4.7	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	12.0	* 55		* 25	12.0	* 55		27.0				
Max Q Clear Time (g_c+I1), s	12.1	39.6		15.9	6.8	48.9		21.1				
Green Ext Time (p_c), s	0.0	3.6		0.4	0.0	2.8		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		43.2
HCM 6th LOS		D

Notes

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



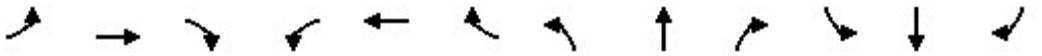
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	628	125	218	647	149	70	438	258	155	354	275
Future Volume (veh/h)	278	628	125	218	647	149	70	438	258	155	354	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	661	123	229	681	148	74	461	272	163	373	289
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	407	1104	205	236	778	169	94	524	435	144	588	489
Arrive On Green	0.23	0.37	0.37	0.13	0.27	0.26	0.05	0.28	0.28	0.08	0.31	0.31
Sat Flow, veh/h	1781	2974	553	1781	2881	626	1781	1870	1551	1781	1870	1553
Grp Volume(v), veh/h	293	395	389	229	420	409	74	461	272	163	373	289
Grp Sat Flow(s),veh/h/ln	1781	1777	1750	1781	1777	1730	1781	1870	1551	1781	1870	1553
Q Serve(g_s), s	18.8	22.3	22.3	15.9	28.0	28.1	5.1	29.2	13.3	10.0	21.2	10.6
Cycle Q Clear(g_c), s	18.8	22.3	22.3	15.9	28.0	28.1	5.1	29.2	13.3	10.0	21.2	10.6
Prop In Lane	1.00		0.32	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	407	660	650	236	480	467	94	524	435	144	588	489
V/C Ratio(X)	0.72	0.60	0.60	0.97	0.87	0.88	0.79	0.88	0.63	1.13	0.63	0.59
Avail Cap(c_a), veh/h	407	660	650	236	480	467	135	561	465	144	588	489
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	0.45	0.45	0.45	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	31.5	31.6	53.6	43.2	43.4	58.0	42.6	19.1	57.0	36.4	10.7
Incr Delay (d2), s/veh	5.3	4.0	4.1	32.0	10.0	10.3	10.7	14.8	2.9	115.8	2.6	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	8.9	10.2	10.2	9.2	13.5	13.3	2.6	15.7	5.2	9.2	10.2	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	35.5	35.7	85.6	53.2	53.7	68.7	57.4	22.0	172.8	39.0	13.0
LnGrp LOS	D	D	D	F	D	D	E	E	C	F	D	B
Approach Vol, veh/h		1077			1058			807			825	
Approach Delay, s/veh		39.3			60.4			46.5			56.3	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	50.0	10.5	43.0	32.9	37.5	14.8	38.8
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	16.4	43.8	9.4	* 37	* 27	* 33	* 10	* 36
Max Q Clear Time (g_c+I1), s	17.9	24.3	7.1	23.2	20.8	30.1	12.0	31.2
Green Ext Time (p_c), s	0.0	6.8	0.0	4.2	0.3	1.7	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	50.5
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	519	20	214	470	117	50	287	368	201	193	60
Future Volume (veh/h)	60	519	20	214	470	117	50	287	368	201	193	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	546	20	225	495	68	53	302	80	212	203	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	704	26	254	895	736	96	363	300	238	525	429
Arrive On Green	0.06	0.39	0.39	0.05	0.16	0.16	0.05	0.19	0.19	0.13	0.28	0.28
Sat Flow, veh/h	1781	1790	66	1781	1870	1539	1781	1870	1545	1781	1870	1529
Grp Volume(v), veh/h	63	0	566	225	495	68	53	302	80	212	203	15
Grp Sat Flow(s),veh/h/ln	1781	0	1856	1781	1870	1539	1781	1870	1545	1781	1870	1529
Q Serve(g_s), s	4.3	0.0	33.0	15.6	30.3	2.7	3.6	19.2	4.0	14.5	10.9	0.9
Cycle Q Clear(g_c), s	4.3	0.0	33.0	15.6	30.3	2.7	3.6	19.2	4.0	14.5	10.9	0.9
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	730	254	895	736	96	363	300	238	525	429
V/C Ratio(X)	0.62	0.00	0.78	0.88	0.55	0.09	0.55	0.83	0.27	0.89	0.39	0.03
Avail Cap(c_a), veh/h	187	0	730	317	895	736	249	439	363	263	525	429
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	32.8	58.1	40.0	10.0	57.2	48.0	22.6	52.8	36.0	32.4
Incr Delay (d2), s/veh	2.3	0.0	7.9	18.5	2.5	0.2	1.8	12.1	0.7	26.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	16.5	8.8	15.9	1.8	1.7	10.2	2.1	8.3	5.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	40.7	76.6	42.5	10.3	59.0	60.2	23.2	78.8	36.7	32.5
LnGrp LOS	E	A	D	E	D	B	E	E	C	E	D	C
Approach Vol, veh/h		629			788			435			430	
Approach Delay, s/veh		42.6			49.4			53.2			57.3	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	52.8	10.7	38.8	11.1	63.4	21.5	28.0
Change Period (Y+Rc), s	4.0	* 4.7	4.0	* 4.9	4.0	* 4.7	* 4.9	* 4.7
Max Green Setting (Gmax), s	22.1	* 38	17.3	* 29	13.0	* 47	* 18	* 28
Max Q Clear Time (g_c+I1), s	17.6	35.0	5.6	12.9	6.3	32.3	16.5	21.2
Green Ext Time (p_c), s	0.1	0.9	0.0	1.5	0.0	2.6	0.1	1.6

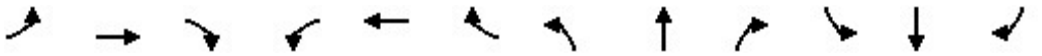
Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary
12: 1st Street & East D Street

Petaluma Station



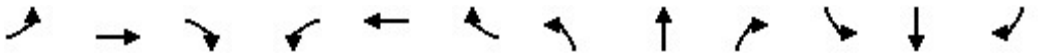
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	950	40	40	714	89	20	20	40	75	20	37
Future Volume (veh/h)	57	950	40	40	714	89	20	20	40	75	20	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1000	41	42	752	92	21	21	-17	79	21	39
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	1338	55	55	1203	147	501	504	0	141	34	51
Arrive On Green	0.04	0.75	0.75	0.03	0.74	0.73	0.12	0.12	0.00	0.12	0.12	0.11
Sat Flow, veh/h	1781	1782	73	1781	1630	199	1077	1167	-908	801	284	423
Grp Volume(v), veh/h	60	0	1041	42	0	844	0	0	0	139	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1855	1781	0	1829	0	0	0	1508	0	0
Q Serve(g_s), s	4.1	0.0	39.6	2.9	0.0	27.9	0.0	0.0	0.0	10.2	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	39.6	2.9	0.0	27.9	0.0	0.0	0.0	11.0	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.11	0.84		-0.68	0.57		0.28
Lane Grp Cap(c), veh/h	77	0	1392	55	0	1350	0	0	0	226	0	0
V/C Ratio(X)	0.78	0.00	0.75	0.76	0.00	0.63	0.00	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	135	0	1392	149	0	1350	0	0	0	625	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.7	0.0	8.8	59.6	0.0	7.9	0.0	0.0	0.0	53.0	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.0	3.7	8.0	0.0	2.2	0.0	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	15.5	1.4	0.0	10.8	0.0	0.0	0.0	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	0.0	12.5	67.6	0.0	10.1	0.0	0.0	0.0	55.0	0.0	0.0
LnGrp LOS	E	A	B	E	A	B	A	A	A	D	A	A
Approach Vol, veh/h		1101			886			0			139	
Approach Delay, s/veh		15.4			12.8			0.0			55.0	
Approach LOS		B			B						D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	95.5		19.1	7.8	97.1		19.1				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.0	4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	54.0		* 47	10.4	53.0		* 47				
Max Q Clear Time (g_c+I1), s	6.1	29.9		13.0	4.9	41.6		0.0				
Green Ext Time (p_c), s	0.0	10.2		0.7	0.0	7.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	16.9
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)	121	649	116	221	567	130	109	72	200	230	94	291
Future Volume (veh/h)	121	649	116	221	567	130	109	72	200	230	94	291
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	683	121	233	597	57	115	76	191	170	199	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	984	174	271	1190	524	297	297	261	284	298	248
Arrive On Green	0.15	0.33	0.31	0.15	0.33	0.33	0.17	0.17	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3009	533	1781	3554	1564	1781	1777	1564	1781	1870	1558
Grp Volume(v), veh/h	127	403	401	233	597	57	115	76	191	170	199	45
Grp Sat Flow(s),veh/h/ln	1781	1777	1765	1781	1777	1564	1781	1777	1564	1781	1870	1558
Q Serve(g_s), s	5.5	16.5	16.6	10.7	11.2	2.1	4.8	3.1	9.7	7.4	8.4	2.1
Cycle Q Clear(g_c), s	5.5	16.5	16.6	10.7	11.2	2.1	4.8	3.1	9.7	7.4	8.4	2.1
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	581	577	271	1190	524	297	297	261	284	298	248
V/C Ratio(X)	0.48	0.69	0.70	0.86	0.50	0.11	0.39	0.26	0.73	0.60	0.67	0.18
Avail Cap(c_a), veh/h	426	977	971	319	1967	866	763	761	669	662	696	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	32.7	24.5	24.7	34.6	22.2	19.2	31.0	30.3	33.4	32.7	33.1	30.4
Incr Delay (d2), s/veh	0.5	2.1	2.2	16.4	0.5	0.1	0.6	0.3	2.9	1.5	1.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.9	6.9	5.7	4.5	0.7	2.0	1.3	3.7	3.2	3.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	26.6	26.8	51.0	22.7	19.3	31.6	30.6	36.4	34.2	35.0	30.7
LnGrp LOS	C	C	C	D	C	B	C	C	D	C	C	C
Approach Vol, veh/h		931			887			382			414	
Approach Delay, s/veh		27.6			29.9			33.8			34.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.7	31.6		18.0	16.3	32.0		17.3				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	12.7	18.6		11.7	7.5	13.2		10.4				
Green Ext Time (p_c), s	0.1	7.7		1.4	0.1	6.5		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		30.3	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1291	383	0	1459	315	250
Future Volume (veh/h)	1291	383	0	1459	315	250
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1359	0	0	1536	332	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2876		0	2876	412	333
Arrive On Green	0.81	0.00	0.00	0.81	0.12	0.12
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1359	0	0	1536	332	114
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	13.2	0.0	0.0	16.3	10.5	4.2
Cycle Q Clear(g_c), s	13.2	0.0	0.0	16.3	10.5	4.2
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2876		0	2876	412	333
V/C Ratio(X)	0.47		0.00	0.53	0.81	0.34
Avail Cap(c_a), veh/h	2876		0	2876	796	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.3	0.0	0.0	3.6	48.0	45.3
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.7	1.4	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	3.6	0.0	0.0	4.4	4.6	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	0.0	0.0	4.3	49.5	45.5
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h	1359	A		1536	446	
Approach Delay, s/veh	3.9			4.3	48.5	
Approach LOS	A			A	D	

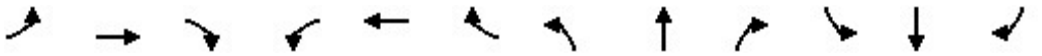
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	94.6				94.6	17.4
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 77				* 77	25.0
Max Q Clear Time (g_c+I1), s	15.2				18.3	12.5
Green Ext Time (p_c), s	2.4				2.8	0.1

Intersection Summary		
HCM 6th Ctrl Delay	10.0	
HCM 6th LOS	B	

Notes

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

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



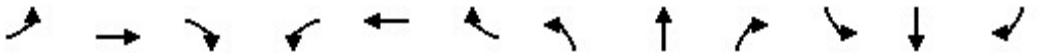
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1324	263	390	1164	0	0	0	0	350	0	415
Future Volume (veh/h)	0	1324	263	390	1164	0	0	0	0	350	0	415
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1394	220	411	1225	0				368	0	437
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	362	1651	725	403	1583	0				410	0	657
Arrive On Green	0.00	0.93	0.93	0.20	0.45	0.00				0.23	0.00	0.21
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1394	220	411	1225	0				368	0	437
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	14.4	1.6	22.2	32.7	0.0				22.5	0.0	2.2
Cycle Q Clear(g_c), s	0.0	14.4	1.6	22.2	32.7	0.0				22.5	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	362	1651	725	403	1583	0				410	0	657
V/C Ratio(X)	0.00	0.84	0.30	1.02	0.77	0.00				0.90	0.00	0.67
Avail Cap(c_a), veh/h	362	1651	725	403	1583	0				447	0	690
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.6	2.2	44.9	26.3	0.0				41.9	0.0	26.5
Incr Delay (d2), s/veh	0.0	5.5	1.1	50.3	3.7	0.0				18.6	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.6	8.3	14.3	0.0				11.9	0.0	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.1	3.2	95.2	30.0	0.0				60.5	0.0	28.3
LnGrp LOS	A	A	A	F	C	A				E	A	C
Approach Vol, veh/h		1614			1636						805	
Approach Delay, s/veh		7.4			46.4						43.0	
Approach LOS		A			D						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	26.2	56.0		29.8	28.3	53.9
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 22	49.1		27.0	23.0	* 49
Max Q Clear Time (g_c+I1), s	24.2	16.4		24.5	0.0	34.7
Green Ext Time (p_c), s	0.0	2.3		0.2	0.0	2.0

Intersection Summary		
HCM 6th Ctrl Delay		30.2
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)	32	1153	30	200	1227	152	20	20	150	204	20	65
Future Volume (veh/h)	32	1153	30	200	1227	152	20	20	150	204	20	65
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	1214	30	211	1292	154	21	21	10	215	21	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	1970	49	265	1939	230	134	140	116	266	279	232
Arrive On Green	0.02	0.56	0.55	0.15	1.00	1.00	0.08	0.08	0.08	0.15	0.15	0.15
Sat Flow, veh/h	1781	3542	88	3456	3190	378	1781	1870	1541	1781	1870	1552
Grp Volume(v), veh/h	34	609	635	211	716	730	21	21	10	215	21	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1728	1777	1792	1781	1870	1541	1781	1870	1552
Q Serve(g_s), s	2.1	25.9	25.9	6.6	0.0	0.0	1.2	1.2	0.7	13.1	1.1	0.7
Cycle Q Clear(g_c), s	2.1	25.9	25.9	6.6	0.0	0.0	1.2	1.2	0.7	13.1	1.1	0.7
Prop In Lane	1.00		0.05	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	988	1030	265	1080	1089	134	140	116	266	279	232
V/C Ratio(X)	0.79	0.62	0.62	0.80	0.66	0.67	0.16	0.15	0.09	0.81	0.08	0.05
Avail Cap(c_a), veh/h	146	988	1030	284	1080	1089	423	444	366	429	451	374
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	54.4	16.8	16.8	46.6	0.0	0.0	48.5	48.5	48.2	46.1	41.0	40.8
Incr Delay (d2), s/veh	11.5	2.9	2.8	12.3	3.2	3.3	0.2	0.2	0.1	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.9	11.4	3.1	1.0	1.0	0.6	0.6	0.3	6.0	0.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	19.7	19.6	58.9	3.2	3.3	48.7	48.6	48.3	48.4	41.0	40.9
LnGrp LOS	E	B	B	E	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1278			1657			52			248	
Approach Delay, s/veh		20.8			10.3			48.6			47.4	
Approach LOS		C			B			D			D	

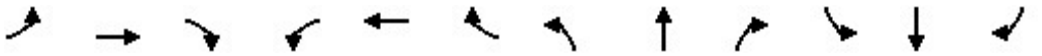
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	66.3		20.7	6.7	72.2		12.4				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	9.2	* 32		* 26	9.2	* 33		26.0				
Max Q Clear Time (g_c+I1), s	8.6	27.9		15.1	4.1	2.0		3.2				
Green Ext Time (p_c), s	0.0	1.8		0.1	0.0	4.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		17.9
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

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



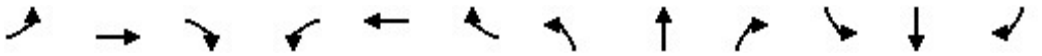
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	871	22	137	982	157	31	164	168	130	126	50
Future Volume (veh/h)	44	871	22	137	982	157	31	164	168	130	126	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	917	22	144	1034	156	33	173	54	137	133	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	1047	25	429	1516	228	41	212	213	160	155	270
Arrive On Green	0.06	0.30	0.29	0.48	0.98	0.97	0.14	0.14	0.14	0.17	0.17	0.17
Sat Flow, veh/h	1781	3544	85	1781	3086	465	297	1558	1560	926	899	1561
Grp Volume(v), veh/h	46	460	479	144	595	595	206	0	54	270	0	53
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1774	1855	0	1560	1824	0	1561
Q Serve(g_s), s	2.8	27.5	27.5	5.6	2.0	2.4	12.1	0.0	3.5	16.1	0.0	3.3
Cycle Q Clear(g_c), s	2.8	27.5	27.5	5.6	2.0	2.4	12.1	0.0	3.5	16.1	0.0	3.3
Prop In Lane	1.00		0.05	1.00		0.26	0.16		1.00	0.51		1.00
Lane Grp Cap(c), veh/h	101	525	547	429	873	872	253	0	213	315	0	270
V/C Ratio(X)	0.46	0.88	0.88	0.34	0.68	0.68	0.81	0.00	0.25	0.86	0.00	0.20
Avail Cap(c_a), veh/h	142	525	547	429	873	872	434	0	365	454	0	389
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	37.5	37.5	23.5	0.5	0.6	47.0	0.0	43.3	45.0	0.0	39.7
Incr Delay (d2), s/veh	1.2	18.2	17.6	0.2	4.3	4.3	2.4	0.0	0.2	7.7	0.0	0.1
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	1.3	14.5	15.0	2.2	1.3	1.4	5.8	0.0	1.4	8.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	55.7	55.1	23.7	4.8	5.0	49.4	0.0	43.5	52.7	0.0	39.8
LnGrp LOS	D	E	E	C	A	A	D	A	D	D	A	D
Approach Vol, veh/h		985			1334			260			323	
Approach Delay, s/veh		55.2			6.9			48.2			50.5	
Approach LOS		E			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.3	37.1		19.3	10.3	59.0		23.4				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 9.3	* 32		25.6	9.4	* 32		27.3				
Max Q Clear Time (g_c+I1), s	7.6	29.5		14.1	4.8	4.4		18.1				
Green Ext Time (p_c), s	0.0	0.9		0.4	0.0	3.6		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		31.9	
HCM 6th LOS		C	

Notes

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



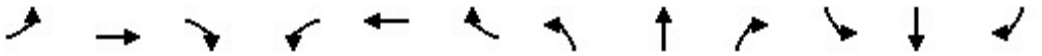
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	534	118	218	652	64	40	189	147	146	473	228
Future Volume (veh/h)	203	534	118	218	652	64	40	189	147	146	473	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	214	562	111	229	686	64	42	199	35	154	498	240
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	1219	240	248	799	74	54	304	250	267	539	447
Arrive On Green	0.30	0.41	0.41	0.14	0.24	0.24	0.03	0.16	0.16	0.15	0.29	0.29
Sat Flow, veh/h	1781	2943	579	1781	3273	305	1781	1870	1541	1781	1870	1552
Grp Volume(v), veh/h	214	338	335	229	372	378	42	199	35	154	498	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1745	1781	1777	1801	1781	1870	1541	1781	1870	1552
Q Serve(g_s), s	11.9	17.2	17.4	15.9	25.0	25.1	2.9	12.5	1.8	10.1	32.3	7.4
Cycle Q Clear(g_c), s	11.9	17.2	17.4	15.9	25.0	25.1	2.9	12.5	1.8	10.1	32.3	7.4
Prop In Lane	1.00		0.33	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	543	736	723	248	434	440	54	304	250	267	539	447
V/C Ratio(X)	0.39	0.46	0.46	0.92	0.86	0.86	0.78	0.66	0.14	0.58	0.92	0.54
Avail Cap(c_a), veh/h	543	736	723	248	434	440	148	557	459	267	551	457
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	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	26.5	26.6	53.1	45.2	45.3	60.2	49.1	24.2	49.5	43.2	7.8
Incr Delay (d2), s/veh	0.2	2.1	2.1	30.4	15.4	15.4	8.6	3.4	0.4	2.0	21.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.7	7.7	9.2	12.8	13.1	1.5	6.2	1.0	4.7	18.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	28.5	28.7	83.5	60.6	60.6	68.8	52.5	24.6	51.5	64.8	9.4
LnGrp LOS	C	C	C	F	E	E	E	D	C	D	E	A
Approach Vol, veh/h		887			979			276			892	
Approach Delay, s/veh		30.1			66.0			51.4			47.6	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	55.8	7.8	40.0	42.7	34.5	23.5	24.3
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	17.4	43.8	10.4	* 36	* 31	* 30	* 10	* 36
Max Q Clear Time (g_c+I1), s	17.9	19.4	4.9	34.3	13.9	27.1	12.1	14.5
Green Ext Time (p_c), s	0.0	6.3	0.0	0.9	0.3	1.5	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	48.7
HCM 6th LOS	D

Notes

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



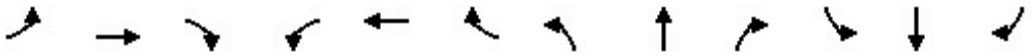
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	360	30	268	492	114	30	173	221	120	303	60
Future Volume (veh/h)	50	360	30	268	492	114	30	173	221	120	303	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	379	28	282	518	63	32	182	51	126	319	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	524	39	426	910	749	87	292	240	186	415	338
Arrive On Green	0.07	0.31	0.30	0.48	0.97	0.97	0.05	0.16	0.16	0.10	0.22	0.22
Sat Flow, veh/h	1781	1715	127	1781	1870	1539	1781	1870	1540	1781	1870	1523
Grp Volume(v), veh/h	53	0	407	282	518	63	32	182	51	126	319	15
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1781	1870	1539	1781	1870	1540	1781	1870	1523
Q Serve(g_s), s	2.6	0.0	17.7	10.9	1.5	0.1	1.6	8.2	2.6	6.1	14.4	0.7
Cycle Q Clear(g_c), s	2.6	0.0	17.7	10.9	1.5	0.1	1.6	8.2	2.6	6.1	14.4	0.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	563	426	910	749	87	292	240	186	415	338
V/C Ratio(X)	0.46	0.00	0.72	0.66	0.57	0.08	0.37	0.62	0.21	0.68	0.77	0.04
Avail Cap(c_a), veh/h	158	0	563	426	910	749	164	559	460	186	559	455
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	27.9	20.7	0.7	0.2	41.4	35.5	33.2	38.8	32.9	27.5
Incr Delay (d2), s/veh	1.0	0.0	7.9	3.0	2.6	0.2	1.0	3.1	0.6	7.7	5.6	0.1
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	1.2	0.0	8.9	3.9	0.9	0.1	0.7	3.9	1.0	3.1	7.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	35.7	23.7	3.2	0.4	42.4	38.6	33.8	46.5	38.4	27.6
LnGrp LOS	D	A	D	C	A	A	D	D	C	D	D	C
Approach Vol, veh/h		460			863			265			460	
Approach Delay, s/veh		36.4			9.7			38.1			40.3	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.1	31.5	8.4	23.9	9.9	47.8	14.3	18.0
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 11	* 27	8.3	* 26	8.0	30.2	* 8.3	* 26
Max Q Clear Time (g_c+I1), s	12.9	19.7	3.6	16.4	4.6	3.5	8.1	10.2
Green Ext Time (p_c), s	0.0	1.3	0.0	1.8	0.0	3.2	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

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



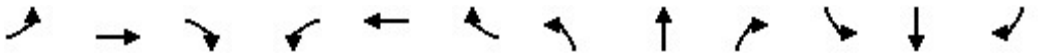
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	682	20	40	751	75	40	20	60	48	20	84
Future Volume (veh/h)	29	682	20	40	751	75	40	20	60	48	20	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	718	20	42	791	77	42	21	4	51	21	88
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	917	26	381	1167	114	171	76	12	108	42	118
Arrive On Green	0.04	0.67	0.67	0.21	0.70	0.69	0.14	0.14	0.13	0.14	0.14	0.13
Sat Flow, veh/h	1781	1809	50	1781	1674	163	760	545	83	405	306	869
Grp Volume(v), veh/h	31	0	738	42	0	868	67	0	0	160	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	0	1837	1388	0	0	1581	0	0
Q Serve(g_s), s	1.5	0.0	24.7	1.7	0.0	24.4	0.0	0.0	0.0	4.9	0.0	0.0
Cycle Q Clear(g_c), s	1.5	0.0	24.7	1.7	0.0	24.4	3.7	0.0	0.0	8.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.09	0.63		0.06	0.32		0.55
Lane Grp Cap(c), veh/h	53	0	942	381	0	1281	259	0	0	268	0	0
V/C Ratio(X)	0.58	0.00	0.78	0.11	0.00	0.68	0.26	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	186	0	942	381	0	1281	425	0	0	449	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	11.3	28.5	0.0	7.8	34.8	0.0	0.0	37.3	0.0	0.0
Incr Delay (d2), s/veh	3.7	0.0	6.5	0.0	0.0	2.9	0.4	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	8.9	0.7	0.0	9.1	1.3	0.0	0.0	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	17.7	28.5	0.0	10.7	35.2	0.0	0.0	38.9	0.0	0.0
LnGrp LOS	D	A	B	C	A	B	D	A	A	D	A	A
Approach Vol, veh/h		769			910			67			160	
Approach Delay, s/veh		18.9			11.6			35.2			38.9	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	66.8		16.5	23.9	49.6		16.5				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	45.0		* 22	9.4	* 45		* 22				
Max Q Clear Time (g_c+I1), s	3.5	26.4		10.6	3.7	26.7		5.7				
Green Ext Time (p_c), s	0.0	9.1		0.5	0.0	7.3		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	17.6
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 (veh/h)	331	597	129	223	667	400	153	108	271	210	112	182
Future Volume (veh/h)	331	597	129	223	667	400	153	108	271	210	112	182
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	628	133	235	702	337	161	114	265	170	190	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	1025	217	256	1091	480	370	369	325	251	263	219
Arrive On Green	0.19	0.35	0.34	0.14	0.31	0.31	0.21	0.21	0.20	0.14	0.14	0.14
Sat Flow, veh/h	1781	2911	615	1781	3554	1563	1781	1777	1564	1781	1870	1557
Grp Volume(v), veh/h	348	383	378	235	702	337	161	114	265	170	190	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1749	1781	1777	1563	1781	1777	1564	1781	1870	1557
Q Serve(g_s), s	20.0	18.6	18.7	13.6	17.8	19.9	8.2	5.7	16.9	9.5	10.1	1.4
Cycle Q Clear(g_c), s	20.0	18.6	18.7	13.6	17.8	19.9	8.2	5.7	16.9	9.5	10.1	1.4
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	626	616	256	1091	480	370	369	325	251	263	219
V/C Ratio(X)	1.02	0.61	0.61	0.92	0.64	0.70	0.44	0.31	0.82	0.68	0.72	0.11
Avail Cap(c_a), veh/h	341	783	771	256	1576	693	611	609	536	531	557	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	27.9	28.1	44.1	31.2	32.0	36.1	35.0	39.9	42.6	42.9	39.2
Incr Delay (d2), s/veh	53.9	1.4	1.4	34.6	0.9	2.7	0.6	0.4	3.8	2.4	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	7.9	7.8	8.3	7.6	7.7	3.5	2.4	6.7	4.3	4.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.1	29.3	29.5	78.7	32.1	34.6	36.7	35.4	43.7	45.0	45.7	39.3
LnGrp LOS	F	C	C	E	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1109			1274			540			384	
Approach Delay, s/veh		50.4			41.4			39.8			45.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	41.1		25.7	24.0	36.1		18.7				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	15.0	* 45		* 35	20.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	15.6	20.7		18.9	22.0	21.9		12.1				
Green Ext Time (p_c), s	0.0	7.0		1.9	0.0	8.9		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			44.6									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1448	490	0	1581	486	390
Future Volume (veh/h)	1448	490	0	1581	486	390
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1524	0	0	1664	512	305
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2726		0	2726	582	470
Arrive On Green	0.77	0.00	0.00	0.77	0.17	0.17
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1524	0	0	1664	512	305
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	21.7	0.0	0.0	25.4	17.9	12.7
Cycle Q Clear(g_c), s	21.7	0.0	0.0	25.4	17.9	12.7
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2726		0	2726	582	470
V/C Ratio(X)	0.56		0.00	0.61	0.88	0.65
Avail Cap(c_a), veh/h	2726		0	2726	803	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	0.0	0.0	6.3	50.3	48.1
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.0	6.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	0.0	8.4	8.3	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.7	0.0	0.0	7.4	57.0	48.7
LnGrp LOS	A		A	A	E	D
Approach Vol, veh/h	1524	A		1664	817	
Approach Delay, s/veh	6.7			7.4	53.9	
Approach LOS	A			A	D	

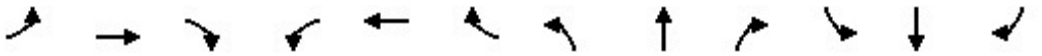
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	99.1				99.1	24.9
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 86				* 86	28.0
Max Q Clear Time (g_c+I1), s	23.7				27.4	19.9
Green Ext Time (p_c), s	2.8				3.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

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

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



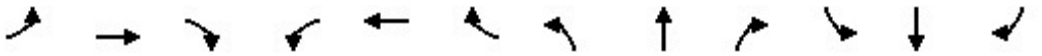
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1478	284	280	1526	0	0	0	0	460	0	417
Future Volume (veh/h)	0	1478	284	280	1526	0	0	0	0	460	0	417
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1556	246	295	1606	0				484	0	399
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	1	1768	777	465	2708	0				504	0	371
Arrive On Green	0.00	0.50	0.50	0.23	0.76	0.00				0.28	0.00	0.27
Sat Flow, veh/h	1781	3554	1561	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1556	246	295	1606	0				484	0	399
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	48.5	11.7	16.2	24.3	0.0				33.2	0.0	33.0
Cycle Q Clear(g_c), s	0.0	48.5	11.7	16.2	24.3	0.0				33.2	0.0	33.0
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	1	1768	777	465	2708	0				504	0	371
V/C Ratio(X)	0.00	0.88	0.32	0.63	0.59	0.00				0.96	0.00	1.08
Avail Cap(c_a), veh/h	230	1768	777	465	2708	0				504	0	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.83	0.83	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.8	18.6	43.1	6.4	0.0				43.8	0.0	60.8
Incr Delay (d2), s/veh	0.0	5.6	0.9	2.2	1.0	0.0				29.8	0.0	68.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	21.4	4.4	4.2	8.2	0.0				18.7	0.0	31.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	33.5	19.5	45.3	7.4	0.0				73.6	0.0	129.4
LnGrp LOS	A	C	B	D	A	A				E	A	F
Approach Vol, veh/h		1802			1901						883	
Approach Delay, s/veh		31.5			13.2						98.8	
Approach LOS		C			B						F	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	33.2	65.7		39.1	0.0	98.9
Change Period (Y+Rc), s	4.6	* 4.6		5.1	3.0	4.6
Max Green Setting (Gmax), s	15.0	* 61		34.0	17.0	60.3
Max Q Clear Time (g_c+I1), s	18.2	50.5		35.2	0.0	26.3
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	3.0

Intersection Summary		
HCM 6th Ctrl Delay		36.9
HCM 6th LOS		D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	1517	60	290	1495	148	110	40	70	195	20	37
Future Volume (veh/h)	39	1517	60	290	1495	148	110	40	70	195	20	37
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	1597	61	305	1574	152	79	94	5	205	21	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	1899	72	358	2019	193	146	153	126	251	264	219
Arrive On Green	0.03	0.54	0.54	0.10	0.62	0.61	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	3488	133	3456	3270	312	1781	1870	1542	1781	1870	1551
Grp Volume(v), veh/h	41	811	847	305	847	879	79	94	5	205	21	11
Grp Sat Flow(s),veh/h/ln	1781	1777	1844	1728	1777	1806	1781	1870	1542	1781	1870	1551
Q Serve(g_s), s	2.8	47.4	48.0	10.8	43.2	45.0	5.3	6.0	0.4	13.9	1.2	0.8
Cycle Q Clear(g_c), s	2.8	47.4	48.0	10.8	43.2	45.0	5.3	6.0	0.4	13.9	1.2	0.8
Prop In Lane	1.00		0.07	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	53	967	1004	358	1097	1115	146	153	126	251	264	219
V/C Ratio(X)	0.78	0.84	0.84	0.85	0.77	0.79	0.54	0.61	0.04	0.82	0.08	0.05
Avail Cap(c_a), veh/h	221	967	1004	424	1097	1115	382	401	331	388	407	338
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	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	23.7	23.8	54.7	17.3	17.7	54.7	55.0	52.4	51.7	46.3	46.1
Incr Delay (d2), s/veh	8.9	8.6	8.6	9.7	4.2	4.5	1.2	1.5	0.0	4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	21.4	22.5	5.2	17.9	19.1	2.4	2.9	0.1	6.5	0.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.6	32.3	32.5	64.4	21.5	22.3	55.8	56.5	52.5	55.7	46.3	46.1
LnGrp LOS	E	C	C	E	C	C	E	E	D	E	D	D
Approach Vol, veh/h		1699			2031			178			237	
Approach Delay, s/veh		33.3			28.3			56.1			54.4	
Approach LOS		C			C			E			D	

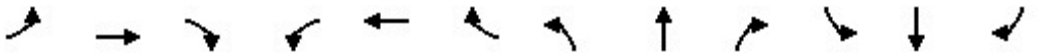
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	71.5		21.5	7.7	80.7		14.2				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	15.2	* 38		* 26	15.4	* 38		26.0				
Max Q Clear Time (g_c+I1), s	12.8	50.0		15.9	4.8	47.0		8.0				
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		33.0
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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



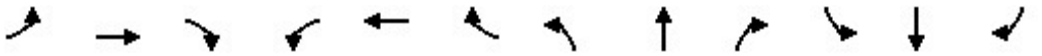
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	1186	62	154	1284	169	43	164	269	147	129	61
Future Volume (veh/h)	67	1186	62	154	1284	169	43	164	269	147	129	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	1248	62	162	1352	172	45	173	91	155	136	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	1559	77	167	1535	194	54	208	221	176	154	283
Arrive On Green	0.06	0.45	0.45	0.09	0.48	0.48	0.14	0.14	0.14	0.18	0.18	0.18
Sat Flow, veh/h	1781	3441	171	1781	3165	399	382	1469	1560	970	851	1562
Grp Volume(v), veh/h	71	644	666	162	754	770	218	0	91	291	0	9
Grp Sat Flow(s),veh/h/ln	1781	1777	1835	1781	1777	1788	1851	0	1560	1822	0	1562
Q Serve(g_s), s	4.8	38.2	38.3	11.1	46.7	47.9	14.1	0.0	6.5	19.1	0.0	0.6
Cycle Q Clear(g_c), s	4.8	38.2	38.3	11.1	46.7	47.9	14.1	0.0	6.5	19.1	0.0	0.6
Prop In Lane	1.00		0.09	1.00		0.22	0.21		1.00	0.53		1.00
Lane Grp Cap(c), veh/h	112	805	831	167	861	867	262	0	221	330	0	283
V/C Ratio(X)	0.64	0.80	0.80	0.97	0.88	0.89	0.83	0.00	0.41	0.88	0.00	0.03
Avail Cap(c_a), veh/h	167	805	831	167	861	867	387	0	326	409	0	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.2	28.8	28.9	55.5	28.3	28.7	51.4	0.0	48.1	49.1	0.0	41.5
Incr Delay (d2), s/veh	2.2	8.2	8.0	61.0	9.7	10.8	6.2	0.0	0.5	15.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	17.8	18.4	7.8	21.6	22.5	7.0	0.0	2.6	10.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	37.0	36.9	116.5	38.0	39.5	57.6	0.0	48.6	64.0	0.0	41.5
LnGrp LOS	E	D	D	F	D	D	E	A	D	E	A	D
Approach Vol, veh/h		1381			1686			309			300	
Approach Delay, s/veh		38.1			46.2			54.9			63.4	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	59.8		21.4	11.7	63.6		26.2				
Change Period (Y+Rc), s	3.5	* 4.8		* 4.7	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	12.0	* 55		* 25	12.0	* 55		27.0				
Max Q Clear Time (g_c+I1), s	13.1	40.3		16.1	6.8	49.9		21.1				
Green Ext Time (p_c), s	0.0	3.6		0.4	0.0	2.5		0.4				

Intersection Summary		
HCM 6th Ctrl Delay	45.3	
HCM 6th LOS	D	

Notes

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



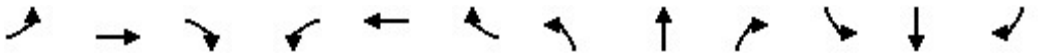
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	633	125	222	650	152	70	438	263	160	354	275
Future Volume (veh/h)	278	633	125	222	650	152	70	438	263	160	354	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	666	123	234	684	151	74	461	277	168	373	289
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	407	1106	204	236	776	171	94	524	435	144	588	489
Arrive On Green	0.23	0.37	0.37	0.13	0.27	0.26	0.05	0.28	0.28	0.08	0.31	0.31
Sat Flow, veh/h	1781	2978	549	1781	2872	633	1781	1870	1551	1781	1870	1553
Grp Volume(v), veh/h	293	397	392	234	423	412	74	461	277	168	373	289
Grp Sat Flow(s),veh/h/ln	1781	1777	1750	1781	1777	1728	1781	1870	1551	1781	1870	1553
Q Serve(g_s), s	18.8	22.4	22.5	16.3	28.3	28.3	5.1	29.2	13.6	10.0	21.2	10.6
Cycle Q Clear(g_c), s	18.8	22.4	22.5	16.3	28.3	28.3	5.1	29.2	13.6	10.0	21.2	10.6
Prop In Lane	1.00		0.31	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	407	660	650	236	480	467	94	524	435	144	588	489
V/C Ratio(X)	0.72	0.60	0.60	0.99	0.88	0.88	0.79	0.88	0.64	1.17	0.63	0.59
Avail Cap(c_a), veh/h	407	660	650	236	480	467	135	561	465	144	588	489
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	0.44	0.44	0.44	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	31.6	31.7	53.7	43.3	43.5	58.0	42.6	19.1	57.0	36.4	10.7
Incr Delay (d2), s/veh	5.3	4.0	4.1	37.0	10.3	10.6	10.7	14.8	3.1	127.8	2.6	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	8.9	10.3	10.2	9.7	13.7	13.4	2.6	15.7	5.3	9.6	10.2	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	35.6	35.8	90.8	53.6	54.1	68.7	57.4	22.3	184.8	38.9	13.0
LnGrp LOS	D	D	D	F	D	D	E	E	C	F	D	B
Approach Vol, veh/h		1082			1069			812			830	
Approach Delay, s/veh		39.4			61.9			46.4			59.4	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	50.0	10.5	43.0	32.9	37.5	14.8	38.8
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	16.4	43.8	9.4	* 37	* 27	* 33	* 10	* 36
Max Q Clear Time (g_c+I1), s	18.3	24.5	7.1	23.2	20.8	30.3	12.0	31.2
Green Ext Time (p_c), s	0.0	6.9	0.0	4.2	0.3	1.5	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	51.6
HCM 6th LOS	D

Notes

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



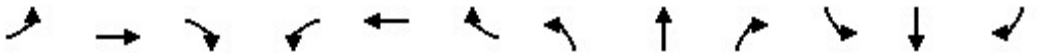
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	524	20	217	473	121	50	287	373	206	193	60
Future Volume (veh/h)	60	524	20	217	473	121	50	287	373	206	193	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	552	20	228	498	72	53	302	86	217	203	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	697	25	257	889	732	96	363	300	243	530	433
Arrive On Green	0.06	0.39	0.38	0.05	0.16	0.16	0.05	0.19	0.19	0.14	0.28	0.28
Sat Flow, veh/h	1781	1791	65	1781	1870	1539	1781	1870	1545	1781	1870	1529
Grp Volume(v), veh/h	63	0	572	228	498	72	53	302	86	217	203	15
Grp Sat Flow(s),veh/h/ln	1781	0	1856	1781	1870	1539	1781	1870	1545	1781	1870	1529
Q Serve(g_s), s	4.3	0.0	33.8	15.8	30.5	2.9	3.6	19.2	4.3	14.9	10.8	0.9
Cycle Q Clear(g_c), s	4.3	0.0	33.8	15.8	30.5	2.9	3.6	19.2	4.3	14.9	10.8	0.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	722	257	889	732	96	363	300	243	530	433
V/C Ratio(X)	0.62	0.00	0.79	0.89	0.56	0.10	0.55	0.83	0.29	0.89	0.38	0.03
Avail Cap(c_a), veh/h	187	0	722	317	889	732	249	439	363	263	530	433
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	33.5	58.0	40.3	10.0	57.2	48.0	22.5	52.7	35.7	32.2
Incr Delay (d2), s/veh	2.3	0.0	8.7	19.1	2.5	0.3	1.8	12.1	0.7	27.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	16.9	9.0	16.0	1.9	1.7	10.2	2.3	8.5	5.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	42.2	77.1	42.8	10.3	59.0	60.1	23.3	79.7	36.4	32.2
LnGrp LOS	E	A	D	E	D	B	E	E	C	E	D	C
Approach Vol, veh/h		635			798			441			435	
Approach Delay, s/veh		43.9			49.7			52.8			57.9	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	52.2	10.7	39.1	11.1	63.1	21.8	28.1
Change Period (Y+Rc), s	4.0	* 4.7	4.0	* 4.9	4.0	* 4.7	* 4.9	* 4.7
Max Green Setting (Gmax), s	22.1	* 38	17.3	* 29	13.0	* 47	* 18	* 28
Max Q Clear Time (g_c+I1), s	17.8	35.8	5.6	12.8	6.3	32.5	16.9	21.2
Green Ext Time (p_c), s	0.1	0.7	0.0	1.5	0.0	2.6	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	50.2
HCM 6th LOS	D

Notes

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



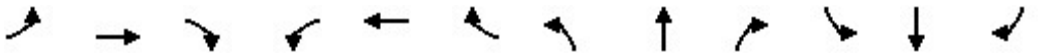
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	965	40	40	724	89	20	20	40	75	20	37
Future Volume (veh/h)	57	965	40	40	724	89	20	20	40	75	20	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1016	41	42	762	92	21	21	-17	79	21	39
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	1339	54	55	1205	145	501	504	0	141	34	51
Arrive On Green	0.04	0.75	0.75	0.03	0.74	0.73	0.12	0.12	0.00	0.12	0.12	0.11
Sat Flow, veh/h	1781	1783	72	1781	1632	197	1077	1167	-908	801	284	423
Grp Volume(v), veh/h	60	0	1057	42	0	854	0	0	0	139	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1855	1781	0	1830	0	0	0	1508	0	0
Q Serve(g_s), s	4.1	0.0	41.0	2.9	0.0	28.5	0.0	0.0	0.0	10.2	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	41.0	2.9	0.0	28.5	0.0	0.0	0.0	11.0	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.11	0.84		-0.68	0.57		0.28
Lane Grp Cap(c), veh/h	77	0	1393	55	0	1350	0	0	0	226	0	0
V/C Ratio(X)	0.78	0.00	0.76	0.76	0.00	0.63	0.00	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	135	0	1393	149	0	1350	0	0	0	625	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.7	0.0	9.0	59.6	0.0	8.0	0.0	0.0	0.0	53.0	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.0	3.9	8.0	0.0	2.3	0.0	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	16.1	1.4	0.0	11.0	0.0	0.0	0.0	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	0.0	12.9	67.6	0.0	10.3	0.0	0.0	0.0	55.0	0.0	0.0
LnGrp LOS	E	A	B	E	A	B	A	A	A	D	A	A
Approach Vol, veh/h		1117			896			0			139	
Approach Delay, s/veh		15.7			12.9			0.0			55.0	
Approach LOS		B			B						D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	95.5		19.1	7.8	97.1		19.1				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.0	4.6		* 4.9				
Max Green Setting (Gmax), s	9.4	54.0		* 47	10.4	53.0		* 47				
Max Q Clear Time (g_c+I1), s	6.1	30.5		13.0	4.9	43.0		0.0				
Green Ext Time (p_c), s	0.0	10.2		0.7	0.0	7.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	17.1
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)	130	660	123	595	570	140	104	172	476	250	242	310
Future Volume (veh/h)	130	660	123	595	570	140	104	172	476	250	242	310
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	695	128	626	600	67	109	181	481	259	261	65
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	752	138	618	1816	800	222	221	194	304	319	266
Arrive On Green	0.09	0.25	0.25	0.35	0.51	0.51	0.12	0.12	0.12	0.17	0.17	0.17
Sat Flow, veh/h	1781	2988	550	1781	3554	1564	1781	1777	1563	1781	1870	1559
Grp Volume(v), veh/h	137	413	410	626	600	67	109	181	481	259	261	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1761	1781	1777	1564	1781	1777	1563	1781	1870	1559
Q Serve(g_s), s	11.6	34.6	34.7	53.0	15.2	3.3	8.7	15.2	19.0	21.6	20.6	5.5
Cycle Q Clear(g_c), s	11.6	34.6	34.7	53.0	15.2	3.3	8.7	15.2	19.0	21.6	20.6	5.5
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	447	443	618	1816	800	222	221	194	304	319	266
V/C Ratio(X)	0.86	0.92	0.93	1.01	0.33	0.08	0.49	0.82	2.47	0.85	0.82	0.24
Avail Cap(c_a), veh/h	245	452	448	618	1816	800	222	221	194	386	405	338
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	68.6	55.8	55.9	49.9	22.0	19.1	62.4	65.2	67.3	61.5	61.1	54.9
Incr Delay (d2), s/veh	11.3	24.9	25.3	39.5	0.2	0.1	1.3	20.5	678.8	12.9	9.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	18.5	18.4	30.1	6.4	1.2	4.0	8.1	44.2	10.9	10.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.9	80.7	81.2	89.4	22.1	19.1	63.7	85.7	746.1	74.4	70.3	55.2
LnGrp LOS	E	F	F	F	C	B	E	F	F	E	E	E
Approach Vol, veh/h		960			1293			771			585	
Approach Delay, s/veh		80.8			54.5			494.6			70.4	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	57.0	42.7		23.0	17.6	82.1		30.1				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	53.0	* 38		* 18	21.0	69.6		32.0				
Max Q Clear Time (g_c+I1), s	55.0	36.7		21.0	13.6	17.2		23.6				
Green Ext Time (p_c), s	0.0	0.7		0.0	0.1	7.1		1.4				

Intersection Summary		
HCM 6th Ctrl Delay		158.1
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1294	370	0	1517	300	270
Future Volume (veh/h)	1294	370	0	1517	300	270
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1362	0	0	1597	316	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2387		0	2387	521	420
Arrive On Green	0.67	0.00	0.00	0.67	0.15	0.15
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1362	0	0	1597	316	135
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	9.2	0.0	0.0	12.1	3.8	1.9
Cycle Q Clear(g_c), s	9.2	0.0	0.0	12.1	3.8	1.9
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2387		0	2387	521	420
V/C Ratio(X)	0.57		0.00	0.67	0.61	0.32
Avail Cap(c_a), veh/h	2387		0	2387	614	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	4.4	17.9	17.1
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.5	0.6	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	1.7	0.0	0.0	2.3	1.4	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.9	0.0	0.0	5.9	18.4	17.2
LnGrp LOS	A		A	A	B	B
Approach Vol, veh/h	1362	A		1597	451	
Approach Delay, s/veh	4.9			5.9	18.1	
Approach LOS	A			A	B	

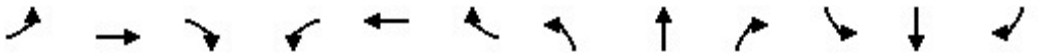
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	34.2				34.2	10.8
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 28				* 28	7.2
Max Q Clear Time (g_c+I1), s	11.2				14.1	5.8
Green Ext Time (p_c), s	2.3				2.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1294	220	420	1167	0	0	0	0	370	0	400
Future Volume (veh/h)	0	1294	220	420	1167	0	0	0	0	370	0	400
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1362	175	442	1228	0				389	0	421
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	205	1421	624	457	1741	0				401	0	497
Arrive On Green	0.00	0.40	0.40	0.23	0.49	0.00				0.22	0.00	0.20
Sat Flow, veh/h	1781	3554	1560	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1362	175	442	1228	0				389	0	421
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	29.8	6.1	17.2	21.5	0.0				17.3	0.0	10.7
Cycle Q Clear(g_c), s	0.0	29.8	6.1	17.2	21.5	0.0				17.3	0.0	10.7
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	205	1421	624	457	1741	0				401	0	497
V/C Ratio(X)	0.00	0.96	0.28	0.97	0.71	0.00				0.97	0.00	0.85
Avail Cap(c_a), veh/h	240	1421	624	457	1741	0				401	0	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.3	16.2	30.7	15.9	0.0				30.7	0.0	25.7
Incr Delay (d2), s/veh	0.0	15.8	1.1	33.5	2.4	0.0				37.0	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.6	2.3	6.2	8.5	0.0				11.2	0.0	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.1	17.3	64.2	18.3	0.0				67.7	0.0	37.8
LnGrp LOS	A	D	B	E	B	A				E	A	D
Approach Vol, veh/h		1537			1670						810	
Approach Delay, s/veh		36.6			30.5						52.2	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	22.0	36.0		22.0	14.8	43.2
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 18	31.4		16.9	11.8	* 39
Max Q Clear Time (g_c+I1), s	19.2	31.8		19.3	0.0	23.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1054	40	220	1197	160	30	30	160	220	30	70
Future Volume (veh/h)	40	1054	40	220	1197	160	30	30	160	220	30	70
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	1109	40	232	1260	162	32	32	20	232	32	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	1983	71	249	1921	246	139	145	120	276	290	241
Arrive On Green	0.03	0.57	0.56	0.07	0.61	0.60	0.08	0.08	0.08	0.16	0.16	0.16
Sat Flow, veh/h	1781	3496	126	3456	3159	404	1781	1870	1541	1781	1870	1553
Grp Volume(v), veh/h	42	563	586	232	706	716	32	32	20	232	32	18
Grp Sat Flow(s),veh/h/ln	1781	1777	1845	1728	1777	1786	1781	1870	1541	1781	1870	1553
Q Serve(g_s), s	2.9	25.1	25.2	8.3	32.3	32.9	2.1	2.0	1.5	15.8	1.8	1.2
Cycle Q Clear(g_c), s	2.9	25.1	25.2	8.3	32.3	32.9	2.1	2.0	1.5	15.8	1.8	1.2
Prop In Lane	1.00		0.07	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1008	1047	249	1080	1086	139	145	120	276	290	241
V/C Ratio(X)	0.78	0.56	0.56	0.93	0.65	0.66	0.23	0.22	0.17	0.84	0.11	0.07
Avail Cap(c_a), veh/h	57	1008	1047	249	1080	1086	380	400	329	385	404	335
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	60.2	17.2	17.2	57.7	15.9	16.1	54.1	54.1	53.9	51.3	45.4	45.1
Incr Delay (d2), s/veh	42.6	2.2	2.2	38.5	3.1	3.1	0.3	0.3	0.2	8.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	10.7	11.1	5.0	13.5	13.8	1.0	1.0	0.6	7.7	0.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.8	19.4	19.3	96.2	19.0	19.2	54.4	54.4	54.1	59.5	45.5	45.2
LnGrp LOS	F	B	B	F	B	B	D	D	D	E	D	D
Approach Vol, veh/h		1191			1654			84			282	
Approach Delay, s/veh		22.3			29.9			54.3			57.0	
Approach LOS		C			C			D			E	

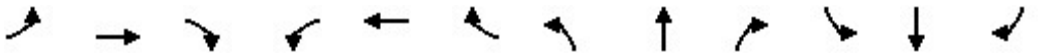
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	74.9		23.4	7.8	80.1		13.7				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	9.0	* 46		* 26	4.0	* 51		26.1				
Max Q Clear Time (g_c+I1), s	10.3	27.2		17.8	4.9	34.9		4.1				
Green Ext Time (p_c), s	0.0	3.2		0.2	0.0	4.2		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		30.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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



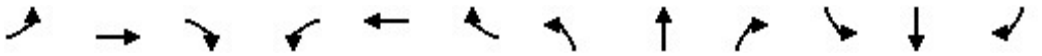
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	834	30	123	963	160	40	181	140	110	143	60
Future Volume (veh/h)	51	834	30	123	963	160	40	181	140	110	143	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	878	31	129	1014	159	42	191	24	116	151	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1261	45	403	1678	263	48	216	222	130	169	254
Arrive On Green	0.05	0.36	0.36	0.23	0.55	0.54	0.14	0.14	0.14	0.16	0.16	0.16
Sat Flow, veh/h	1781	3498	124	1781	3068	480	334	1520	1560	795	1035	1561
Grp Volume(v), veh/h	54	446	463	129	587	586	233	0	24	267	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1845	1781	1777	1771	1854	0	1560	1831	0	1561
Q Serve(g_s), s	4.8	34.3	34.3	9.7	35.7	35.9	19.7	0.0	2.1	22.9	0.0	5.6
Cycle Q Clear(g_c), s	4.8	34.3	34.3	9.7	35.7	35.9	19.7	0.0	2.1	22.9	0.0	5.6
Prop In Lane	1.00		0.07	1.00		0.27	0.18		1.00	0.43		1.00
Lane Grp Cap(c), veh/h	86	641	665	403	972	969	264	0	222	298	0	254
V/C Ratio(X)	0.63	0.70	0.70	0.32	0.60	0.61	0.88	0.00	0.11	0.90	0.00	0.25
Avail Cap(c_a), veh/h	111	641	665	403	972	969	348	0	293	400	0	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.8	43.7	43.7	51.7	24.5	24.6	67.3	0.0	59.8	65.6	0.0	58.4
Incr Delay (d2), s/veh	2.8	6.2	5.9	0.2	2.8	2.8	15.7	0.0	0.1	15.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	16.3	16.9	4.4	15.9	15.9	10.6	0.0	0.9	12.1	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	49.8	49.6	51.8	27.3	27.4	83.0	0.0	59.8	80.8	0.0	58.6
LnGrp LOS	E	D	D	D	C	C	F	A	E	F	A	E
Approach Vol, veh/h		963			1302			257			330	
Approach Delay, s/veh		51.3			29.8			80.8			76.6	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.5	61.7		26.8	11.7	91.5		30.1				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 22	* 57		29.4	10.5	* 68		34.4				
Max Q Clear Time (g_c+I1), s	11.7	36.3		21.7	6.8	37.9		24.9				
Green Ext Time (p_c), s	0.0	2.4		0.4	0.0	3.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		47.1	
HCM 6th LOS		D	

Notes

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



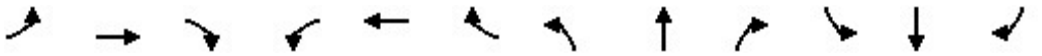
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	546	110	200	654	43	50	200	140	94	480	240
Future Volume (veh/h)	220	546	110	200	654	43	50	200	140	94	480	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	232	575	103	211	688	42	53	211	27	99	505	253
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	1138	203	139	1048	64	68	350	289	300	611	507
Arrive On Green	0.14	0.38	0.37	0.08	0.31	0.30	0.04	0.19	0.19	0.17	0.33	0.33
Sat Flow, veh/h	1781	2996	535	1781	3394	207	1781	1870	1544	1781	1870	1554
Grp Volume(v), veh/h	232	340	338	211	360	370	53	211	27	99	505	253
Grp Sat Flow(s),veh/h/ln	1781	1777	1754	1781	1777	1824	1781	1870	1544	1781	1870	1554
Q Serve(g_s), s	11.6	13.2	13.3	7.0	15.8	15.8	2.7	9.3	1.0	4.4	22.4	7.3
Cycle Q Clear(g_c), s	11.6	13.2	13.3	7.0	15.8	15.8	2.7	9.3	1.0	4.4	22.4	7.3
Prop In Lane	1.00		0.30	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	675	666	139	549	564	68	350	289	300	611	507
V/C Ratio(X)	0.92	0.50	0.51	1.52	0.66	0.66	0.78	0.60	0.09	0.33	0.83	0.50
Avail Cap(c_a), veh/h	253	675	666	139	549	564	79	732	604	300	732	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	21.4	21.5	41.5	27.0	27.0	42.9	33.5	17.6	33.0	28.0	9.4
Incr Delay (d2), s/veh	34.4	2.7	2.7	261.9	4.7	4.6	29.1	2.4	0.2	0.2	7.3	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	7.4	5.8	5.8	13.1	7.2	7.4	1.7	4.4	0.5	1.9	11.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	24.1	24.3	303.4	31.7	31.6	72.0	35.9	17.8	33.2	35.3	10.5
LnGrp LOS	E	C	C	F	C	C	E	D	B	C	D	B
Approach Vol, veh/h		910			941			291			857	
Approach Delay, s/veh		36.5			92.6			40.8			27.7	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	38.2	7.4	33.4	17.4	31.8	20.0	20.9
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	7.0	27.2	4.0	* 34	* 7	* 27	* 4	* 34
Max Q Clear Time (g_c+I1), s	9.0	15.3	4.7	24.4	13.6	17.8	6.4	11.3
Green Ext Time (p_c), s	0.0	4.4	0.0	4.2	0.0	4.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

Notes

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



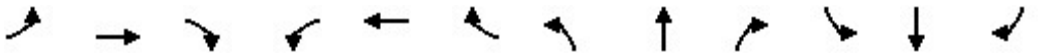
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	355	40	273	493	121	40	180	224	131	320	70
Future Volume (veh/h)	60	355	40	273	493	121	40	180	224	131	320	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	374	38	287	519	70	42	189	54	138	337	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	505	51	400	868	714	103	298	246	211	430	350
Arrive On Green	0.07	0.30	0.30	0.45	0.93	0.93	0.06	0.16	0.16	0.12	0.23	0.23
Sat Flow, veh/h	1781	1664	169	1781	1870	1539	1781	1870	1541	1781	1870	1524
Grp Volume(v), veh/h	63	0	412	287	519	70	42	189	54	138	337	26
Grp Sat Flow(s),veh/h/ln	1781	0	1833	1781	1870	1539	1781	1870	1541	1781	1870	1524
Q Serve(g_s), s	3.1	0.0	18.2	11.8	4.0	0.2	2.0	8.5	2.7	6.7	15.2	1.2
Cycle Q Clear(g_c), s	3.1	0.0	18.2	11.8	4.0	0.2	2.0	8.5	2.7	6.7	15.2	1.2
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	0	556	400	868	714	103	298	246	211	430	350
V/C Ratio(X)	0.50	0.00	0.74	0.72	0.60	0.10	0.41	0.63	0.22	0.66	0.78	0.07
Avail Cap(c_a), veh/h	158	0	556	400	868	714	158	555	457	211	555	452
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	28.2	22.5	1.9	0.6	40.9	35.4	32.9	37.9	32.5	27.1
Incr Delay (d2), s/veh	1.2	0.0	8.6	5.3	3.0	0.3	1.0	3.2	0.6	5.7	6.5	0.1
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	1.4	0.0	9.2	4.4	1.5	0.2	0.9	4.1	1.1	3.2	7.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	0.0	36.8	27.8	4.9	0.8	41.9	38.5	33.6	43.7	39.0	27.3
LnGrp LOS	D	A	D	C	A	A	D	D	C	D	D	C
Approach Vol, veh/h		475			876			285			501	
Approach Delay, s/veh		37.4			12.1			38.1			39.7	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.8	31.3	9.2	24.7	10.3	45.8	15.5	18.4
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 12	* 27	8.0	* 26	8.0	30.7	* 8	* 26
Max Q Clear Time (g_c+I1), s	13.8	20.2	4.0	17.2	5.1	6.0	8.7	10.5
Green Ext Time (p_c), s	0.0	1.2	0.0	1.9	0.0	3.0	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

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



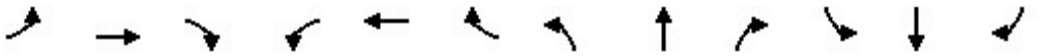
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	620	30	80	797	90	30	30	70	70	30	40
Future Volume (veh/h)	40	620	30	80	797	90	30	30	70	70	30	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	653	31	84	839	93	32	32	15	74	32	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	963	46	330	1155	128	122	111	41	151	54	57
Arrive On Green	0.07	1.00	1.00	0.19	0.70	0.69	0.13	0.13	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1781	1769	84	1781	1650	183	504	852	318	714	425	451
Grp Volume(v), veh/h	42	0	684	84	0	932	79	0	0	148	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1853	1781	0	1832	1673	0	0	1590	0	0
Q Serve(g_s), s	2.1	0.0	0.0	3.6	0.0	28.0	0.0	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	3.6	0.0	28.0	3.6	0.0	0.0	7.8	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.10	0.41		0.19	0.50		0.28
Lane Grp Cap(c), veh/h	64	0	1009	330	0	1283	274	0	0	262	0	0
V/C Ratio(X)	0.65	0.00	0.68	0.25	0.00	0.73	0.29	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	99	0	1009	330	0	1283	434	0	0	420	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.2	0.0	0.0	31.3	0.0	8.3	35.7	0.0	0.0	37.6	0.0	0.0
Incr Delay (d2), s/veh	4.1	0.0	3.7	0.1	0.0	3.6	0.4	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.0	1.6	0.0	10.5	1.6	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	3.7	31.5	0.0	11.9	36.1	0.0	0.0	39.0	0.0	0.0
LnGrp LOS	D	A	A	C	A	B	D	A	A	D	A	A
Approach Vol, veh/h		726			1016			79			148	
Approach Delay, s/veh		6.1			13.5			36.1			39.0	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	67.0		15.7	21.3	53.0		15.7				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	5.0	51.4		* 20	8.0	* 48		* 20				
Max Q Clear Time (g_c+I1), s	4.1	30.0		9.8	5.6	2.0		5.6				
Green Ext Time (p_c), s	0.0	10.9		0.4	0.0	9.1		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		13.6	
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 (veh/h)	350	600	134	632	650	430	134	321	549	230	266	190
Future Volume (veh/h)	350	600	134	632	650	430	134	321	549	230	266	190
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	368	632	140	665	684	373	141	338	558	242	280	-61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	632	140	563	1138	501	333	332	292	308	323	274
Arrive On Green	0.22	0.22	0.21	0.32	0.32	0.32	0.19	0.19	0.18	0.17	0.17	0.00
Sat Flow, veh/h	1781	2883	637	1781	3554	1563	1781	1777	1564	1781	1870	1585
Grp Volume(v), veh/h	368	389	383	665	684	373	141	338	558	242	280	-61
Grp Sat Flow(s),veh/h/ln	1781	1777	1744	1781	1777	1563	1781	1777	1564	1781	1870	1585
Q Serve(g_s), s	31.6	33.9	34.0	49.0	25.1	33.0	10.8	29.0	29.0	20.2	22.6	0.0
Cycle Q Clear(g_c), s	31.6	33.9	34.0	49.0	25.1	33.0	10.8	29.0	29.0	20.2	22.6	0.0
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	390	382	563	1138	501	333	332	292	308	323	274
V/C Ratio(X)	0.95	1.00	1.00	1.18	0.60	0.75	0.42	1.02	1.91	0.79	0.87	-0.22
Avail Cap(c_a), veh/h	391	390	382	563	1138	501	333	332	292	368	386	327
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	0.00
Uniform Delay (d), s/veh	59.9	60.5	60.7	53.0	44.4	47.1	55.7	63.0	63.4	61.4	62.4	0.0
Incr Delay (d2), s/veh	32.8	45.3	46.4	98.9	1.1	6.4	0.6	53.8	421.0	8.5	15.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	20.1	19.9	37.1	11.3	13.7	4.9	17.9	45.6	9.9	12.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.7	105.8	107.2	151.9	45.4	53.5	56.3	116.9	484.4	69.9	78.0	0.0
LnGrp LOS	F	F	F	F	D	D	E	F	F	E	E	A
Approach Vol, veh/h		1140			1722			1037			461	
Approach Delay, s/veh		102.0			88.3			306.4			84.0	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	53.0	38.3		33.0	37.6	53.7		30.8				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	49.0	* 33		* 28	34.0	47.7		30.9				
Max Q Clear Time (g_c+I1), s	51.0	36.0		31.0	33.6	35.0		24.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.4		1.1				

Intersection Summary		
HCM 6th Ctrl Delay		143.3
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1466	480	0	1595	400	420
Future Volume (veh/h)	1466	480	0	1595	400	420
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1543	0	0	1679	421	293
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2441		0	2441	580	468
Arrive On Green	0.69	0.00	0.00	0.69	0.17	0.17
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1543	0	0	1679	421	293
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	13.2	0.0	0.0	15.4	6.4	5.4
Cycle Q Clear(g_c), s	13.2	0.0	0.0	15.4	6.4	5.4
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2441		0	2441	580	468
V/C Ratio(X)	0.63		0.00	0.69	0.73	0.63
Avail Cap(c_a), veh/h	2441		0	2441	691	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	5.1	21.7	21.3
Incr Delay (d2), s/veh	1.3	0.0	0.0	1.6	2.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	3.6	2.5	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.0	0.0	0.0	6.7	24.0	22.1
LnGrp LOS	A		A	A	C	C
Approach Vol, veh/h	1543	A		1679	714	
Approach Delay, s/veh	6.0			6.7	23.2	
Approach LOS	A			A	C	

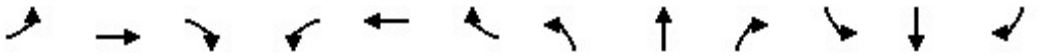
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	41.8				41.8	13.2
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 35				* 35	10.2
Max Q Clear Time (g_c+I1), s	15.2				17.4	8.4
Green Ext Time (p_c), s	2.8				3.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

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

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



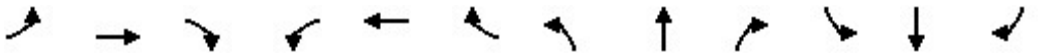
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1456	240	300	1435	0	0	0	0	490	0	340
Future Volume (veh/h)	0	1456	240	300	1435	0	0	0	0	490	0	340
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1533	196	316	1511	0				516	0	358
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	111	1540	676	316	1808	0				495	0	502
Arrive On Green	0.00	0.43	0.43	0.16	0.51	0.00				0.28	0.00	0.25
Sat Flow, veh/h	1781	3554	1560	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1533	196	316	1511	0				516	0	358
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	38.7	7.3	14.0	32.7	0.0				25.0	0.0	12.3
Cycle Q Clear(g_c), s	0.0	38.7	7.3	14.0	32.7	0.0				25.0	0.0	12.3
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	111	1540	676	316	1808	0				495	0	502
V/C Ratio(X)	0.00	1.00	0.29	1.00	0.84	0.00				1.04	0.00	0.71
Avail Cap(c_a), veh/h	143	1540	676	316	1808	0				495	0	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	25.4	16.5	38.0	18.9	0.0				32.5	0.0	27.1
Incr Delay (d2), s/veh	0.0	21.9	1.1	50.7	4.8	0.0				52.1	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	19.9	2.7	5.6	13.5	0.0				17.5	0.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	47.3	17.6	88.7	23.6	0.0				84.6	0.0	31.2
LnGrp LOS	A	D	B	F	C	A				F	A	C
Approach Vol, veh/h		1729			1827						874	
Approach Delay, s/veh		43.9			34.9						62.7	
Approach LOS		D			C						E	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	18.0	43.0		29.0	11.2	49.8
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 14	38.4		23.9	8.2	* 45
Max Q Clear Time (g_c+I1), s	16.0	40.7		27.0	0.0	34.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.4

Intersection Summary		
HCM 6th Ctrl Delay		43.9
HCM 6th LOS		D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1436	70	310	1305	150	120	50	80	200	30	40
Future Volume (veh/h)	40	1436	70	310	1305	150	120	50	80	200	30	40
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	1512	72	326	1374	152	90	104	-64	211	32	-14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	2009	95	310	2072	228	139	146	124	249	262	222
Arrive On Green	0.03	0.58	0.58	0.09	0.64	0.64	0.08	0.08	0.00	0.14	0.14	0.00
Sat Flow, veh/h	1781	3451	164	3456	3220	354	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	42	776	808	326	754	772	90	104	-64	211	32	-14
Grp Sat Flow(s),veh/h/ln	1781	1777	1838	1728	1777	1797	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.4	47.0	47.6	13.0	38.1	39.0	7.1	7.9	0.0	16.8	2.2	0.0
Cycle Q Clear(g_c), s	3.4	47.0	47.6	13.0	38.1	39.0	7.1	7.9	0.0	16.8	2.2	0.0
Prop In Lane	1.00		0.09	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1034	1070	310	1143	1156	139	146	124	249	262	222
V/C Ratio(X)	0.85	0.75	0.76	1.05	0.66	0.67	0.65	0.71	-0.52	0.85	0.12	-0.06
Avail Cap(c_a), veh/h	49	1034	1070	310	1143	1156	328	344	292	332	348	295
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.2	22.5	22.6	66.0	16.0	16.2	64.9	65.3	0.0	60.8	54.5	0.0
Incr Delay (d2), s/veh	74.0	5.0	5.0	65.5	3.0	3.1	1.9	2.4	0.0	11.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	20.7	21.6	8.6	16.0	16.6	3.3	3.9	0.0	8.4	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	144.3	27.5	27.6	131.5	19.0	19.3	66.8	67.7	0.0	72.1	54.6	0.0
LnGrp LOS	F	C	C	F	B	B	E	E	A	E	D	A
Approach Vol, veh/h		1626			1852			130			229	
Approach Delay, s/veh		30.6			38.9			100.4			74.0	
Approach LOS		C			D			F			E	

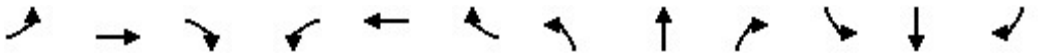
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	88.4		24.3	8.0	97.4		15.3				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	13.0	* 62		* 26	4.0	* 71		26.1				
Max Q Clear Time (g_c+I1), s	15.0	49.6		18.8	5.4	41.0		9.9				
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	5.3		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		39.6
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

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



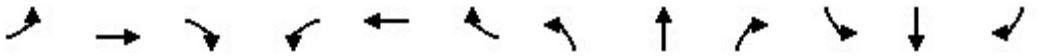
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	1166	70	112	1162	150	50	182	220	140	142	70
Future Volume (veh/h)	72	1166	70	112	1162	150	50	182	220	140	142	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	1227	73	118	1223	149	53	192	109	147	149	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1451	86	248	1663	202	59	215	232	161	163	278
Arrive On Green	0.05	0.43	0.42	0.14	0.52	0.52	0.15	0.15	0.15	0.18	0.18	0.18
Sat Flow, veh/h	1781	3403	202	1781	3182	386	400	1450	1561	906	919	1561
Grp Volume(v), veh/h	76	640	660	118	681	691	245	0	109	296	0	74
Grp Sat Flow(s),veh/h/ln	1781	1777	1828	1781	1777	1791	1850	0	1561	1825	0	1561
Q Serve(g_s), s	6.8	51.7	51.9	9.8	47.4	48.0	20.8	0.0	10.2	25.5	0.0	6.5
Cycle Q Clear(g_c), s	6.8	51.7	51.9	9.8	47.4	48.0	20.8	0.0	10.2	25.5	0.0	6.5
Prop In Lane	1.00		0.11	1.00		0.22	0.22		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	91	757	779	248	929	936	275	0	232	324	0	278
V/C Ratio(X)	0.83	0.84	0.85	0.47	0.73	0.74	0.89	0.00	0.47	0.91	0.00	0.27
Avail Cap(c_a), veh/h	114	757	779	248	929	936	315	0	265	367	0	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.2	41.2	41.3	63.4	29.6	29.8	66.9	0.0	62.4	64.6	0.0	56.8
Incr Delay (d2), s/veh	28.1	11.2	11.0	0.5	5.1	5.2	22.1	0.0	0.6	23.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	25.0	25.8	4.5	21.6	22.0	11.6	0.0	4.2	14.1	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.3	52.3	52.3	64.0	34.7	35.0	89.0	0.0	62.9	87.9	0.0	57.0
LnGrp LOS	F	D	D	E	C	C	F	A	E	F	A	E
Approach Vol, veh/h		1376			1490			354			370	
Approach Delay, s/veh		55.1			37.1			81.0			81.7	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.6	72.2		27.7	12.2	87.6		32.4				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 17	* 68		26.6	10.7	* 74		31.6				
Max Q Clear Time (g_c+I1), s	11.8	53.9		22.8	8.8	50.0		27.5				
Green Ext Time (p_c), s	0.0	3.5		0.3	0.0	4.3		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		52.9
HCM 6th LOS		D

Notes

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



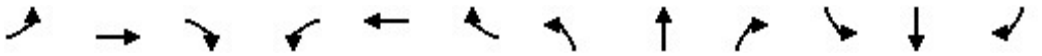
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	634	100	200	647	105	80	440	240	103	360	290
Future Volume (veh/h)	290	634	100	200	647	105	80	440	240	103	360	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	305	667	92	211	681	108	84	463	133	108	379	305
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	1044	144	243	819	130	107	563	468	107	578	480
Arrive On Green	0.20	0.33	0.33	0.14	0.27	0.26	0.06	0.30	0.30	0.06	0.31	0.31
Sat Flow, veh/h	1781	3122	430	1781	3055	484	1781	1870	1552	1781	1870	1553
Grp Volume(v), veh/h	305	379	380	211	396	393	84	463	133	108	379	305
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1781	1777	1762	1781	1870	1552	1781	1870	1553
Q Serve(g_s), s	16.6	18.1	18.1	11.6	21.0	21.0	4.7	23.0	4.3	6.0	17.6	9.6
Cycle Q Clear(g_c), s	16.6	18.1	18.1	11.6	21.0	21.0	4.7	23.0	4.3	6.0	17.6	9.6
Prop In Lane	1.00		0.24	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	594	594	243	476	472	107	563	468	107	578	480
V/C Ratio(X)	0.87	0.64	0.64	0.87	0.83	0.83	0.78	0.82	0.28	1.01	0.66	0.64
Avail Cap(c_a), veh/h	350	594	594	285	476	472	125	658	546	107	640	531
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	0.53	0.53	0.53	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	28.2	28.3	42.3	34.5	34.6	46.4	32.4	11.5	47.0	29.9	9.6
Incr Delay (d2), s/veh	19.6	5.2	5.2	11.4	8.8	9.0	20.3	7.9	0.5	89.9	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	8.4	8.4	5.8	10.0	10.0	2.7	11.5	2.4	5.3	8.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.6	33.3	33.5	53.7	43.3	43.6	66.6	40.3	12.0	136.9	32.5	12.2
LnGrp LOS	E	C	C	D	D	D	E	D	B	F	C	B
Approach Vol, veh/h		1064			1000			680			792	
Approach Delay, s/veh		40.6			45.6			38.0			38.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	37.4	10.0	34.9	24.3	30.8	10.8	34.1
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	16.0	26.2	7.0	* 33	* 16	* 26	* 6	* 34
Max Q Clear Time (g_c+I1), s	13.6	20.1	6.7	19.6	18.6	23.0	8.0	25.0
Green Ext Time (p_c), s	0.1	3.0	0.0	4.3	0.0	1.7	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

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



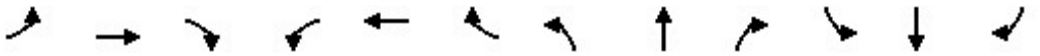
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	523	30	215	475	122	60	300	373	210	200	70
Future Volume (veh/h)	70	523	30	215	475	122	60	300	373	210	200	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	551	28	226	500	71	63	316	211	221	211	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	562	29	301	794	652	118	406	336	214	523	428
Arrive On Green	0.07	0.32	0.31	0.11	0.28	0.28	0.07	0.22	0.22	0.12	0.28	0.28
Sat Flow, veh/h	1781	1761	89	1781	1870	1537	1781	1870	1547	1781	1870	1529
Grp Volume(v), veh/h	74	0	579	226	500	71	63	316	211	221	211	26
Grp Sat Flow(s),veh/h/ln	1781	0	1851	1781	1870	1537	1781	1870	1547	1781	1870	1529
Q Serve(g_s), s	4.0	0.0	31.0	12.3	23.3	2.1	3.4	15.9	12.4	12.0	9.2	1.2
Cycle Q Clear(g_c), s	4.0	0.0	31.0	12.3	23.3	2.1	3.4	15.9	12.4	12.0	9.2	1.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	0	590	301	794	652	118	406	336	214	523	428
V/C Ratio(X)	0.60	0.00	0.98	0.75	0.63	0.11	0.54	0.78	0.63	1.03	0.40	0.06
Avail Cap(c_a), veh/h	143	0	590	301	794	652	160	499	413	214	555	454
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	0.0	33.8	42.3	28.9	8.3	45.2	36.9	35.5	44.0	29.2	26.4
Incr Delay (d2), s/veh	2.4	0.0	32.6	9.0	3.8	0.3	1.4	7.2	2.9	70.7	0.7	0.1
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	1.9	0.0	19.0	6.4	11.8	1.3	1.6	8.0	4.9	9.5	4.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	0.0	66.4	51.3	32.7	8.6	46.6	44.1	38.4	114.7	29.9	26.5
LnGrp LOS	D	A	E	D	C	A	D	D	D	F	C	C
Approach Vol, veh/h		653			797			590			458	
Approach Delay, s/veh		64.3			35.8			42.3			70.6	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	35.9	10.6	32.0	11.0	46.4	16.9	25.7
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 13	* 31	9.0	* 29	8.0	36.7	* 12	* 26
Max Q Clear Time (g_c+I1), s	14.3	33.0	5.4	11.2	6.0	25.3	14.0	17.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	2.2	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

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



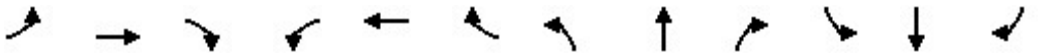
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1086	30	50	692	160	30	30	60	90	30	50
Future Volume (veh/h)	50	1086	30	50	692	160	30	30	60	90	30	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	1143	31	53	728	166	32	32	4	95	32	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1123	30	190	1018	232	140	126	13	166	48	66
Arrive On Green	0.03	0.42	0.41	0.11	0.69	0.69	0.15	0.15	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	1811	49	1781	1467	334	593	857	91	771	332	460
Grp Volume(v), veh/h	53	0	1174	53	0	894	68	0	0	180	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	0	1801	1541	0	0	1563	0	0
Q Serve(g_s), s	3.0	0.0	62.0	2.7	0.0	30.2	0.0	0.0	0.0	7.4	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	62.0	2.7	0.0	30.2	3.5	0.0	0.0	10.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.19	0.47		0.06	0.53		0.29
Lane Grp Cap(c), veh/h	69	0	1153	190	0	1250	280	0	0	281	0	0
V/C Ratio(X)	0.77	0.00	1.02	0.28	0.00	0.72	0.24	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	89	0	1153	190	0	1250	376	0	0	378	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.3	0.0	29.2	41.1	0.0	9.3	37.8	0.0	0.0	41.1	0.0	0.0
Incr Delay (d2), s/veh	19.1	0.0	31.1	0.3	0.0	3.5	0.3	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	38.5	1.2	0.0	11.6	1.5	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	0.0	60.3	41.4	0.0	12.8	38.1	0.0	0.0	43.0	0.0	0.0
LnGrp LOS	E	A	F	D	A	B	D	A	A	D	A	A
Approach Vol, veh/h		1227			947			68			180	
Approach Delay, s/veh		60.6			14.4			38.1			43.0	
Approach LOS		E			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	73.4		18.7	15.3	66.0		18.7				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	5.0	61.4		* 20	5.0	* 61		* 20				
Max Q Clear Time (g_c+I1), s	5.0	32.2		12.9	4.7	64.0		5.5				
Green Ext Time (p_c), s	0.0	12.3		0.4	0.0	0.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		40.6	
HCM 6th LOS		D	

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	675	123	595	581	140	104	173	491	250	242	311
Future Volume (veh/h)	131	675	123	595	581	140	104	173	491	250	242	311
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	711	128	626	612	67	109	182	497	259	261	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	760	137	616	1817	800	221	220	194	304	319	266
Arrive On Green	0.09	0.25	0.25	0.35	0.51	0.51	0.12	0.12	0.12	0.17	0.17	0.17
Sat Flow, veh/h	1781	3000	540	1781	3554	1564	1781	1777	1563	1781	1870	1559
Grp Volume(v), veh/h	138	421	418	626	612	67	109	182	497	259	261	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1781	1777	1564	1781	1777	1563	1781	1870	1559
Q Serve(g_s), s	11.7	35.5	35.6	53.0	15.6	3.4	8.7	15.3	19.0	21.6	20.6	5.6
Cycle Q Clear(g_c), s	11.7	35.5	35.6	53.0	15.6	3.4	8.7	15.3	19.0	21.6	20.6	5.6
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	450	446	616	1817	800	221	220	194	304	319	266
V/C Ratio(X)	0.86	0.94	0.94	1.02	0.34	0.08	0.49	0.83	2.56	0.85	0.82	0.25
Avail Cap(c_a), veh/h	244	451	448	616	1817	800	221	220	194	385	404	337
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	68.8	56.0	56.2	50.1	22.1	19.1	62.6	65.5	67.5	61.7	61.3	55.0
Incr Delay (d2), s/veh	11.8	27.2	27.5	40.3	0.2	0.1	1.3	21.5	718.6	13.0	9.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	19.2	19.2	30.2	6.6	1.3	4.0	8.2	46.2	10.9	10.7	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	83.2	83.7	90.4	22.3	19.2	63.9	87.0	786.1	74.7	70.5	55.4
LnGrp LOS	F	F	F	F	C	B	E	F	F	E	E	E
Approach Vol, veh/h		977			1305			788			586	
Approach Delay, s/veh		83.0			54.8			524.7			70.7	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	57.0	43.1		23.0	17.8	82.3		30.1				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	53.0	* 38		* 18	21.0	69.6		32.0				
Max Q Clear Time (g_c+I1), s	55.0	37.6		21.0	13.7	17.6		23.6				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.1	7.3		1.4				

Intersection Summary		
HCM 6th Ctrl Delay	166.2	
HCM 6th LOS	F	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1299	387	0	1519	300	270
Future Volume (veh/h)	1299	387	0	1519	300	270
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1367	0	0	1599	316	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2387		0	2387	521	420
Arrive On Green	0.67	0.00	0.00	0.67	0.15	0.15
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1367	0	0	1599	316	135
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	9.2	0.0	0.0	12.1	3.8	1.9
Cycle Q Clear(g_c), s	9.2	0.0	0.0	12.1	3.8	1.9
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2387		0	2387	521	420
V/C Ratio(X)	0.57		0.00	0.67	0.61	0.32
Avail Cap(c_a), veh/h	2387		0	2387	614	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	4.4	17.9	17.1
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.5	0.6	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	1.7	0.0	0.0	2.3	1.4	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.9	0.0	0.0	5.9	18.4	17.2
LnGrp LOS	A		A	A	B	B
Approach Vol, veh/h	1367	A		1599	451	
Approach Delay, s/veh	4.9			5.9	18.1	
Approach LOS	A			A	B	

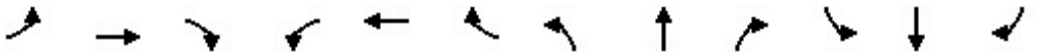
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	34.2				34.2	10.8
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 28				* 28	7.2
Max Q Clear Time (g_c+I1), s	11.2				14.1	5.8
Green Ext Time (p_c), s	2.3				2.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

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

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



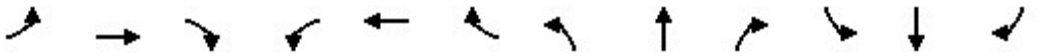
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1316	220	420	1169	0	0	0	0	370	0	407
Future Volume (veh/h)	0	1316	220	420	1169	0	0	0	0	370	0	407
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1385	175	442	1231	0				389	0	428
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	205	1421	624	457	1741	0				401	0	497
Arrive On Green	0.00	0.40	0.40	0.23	0.49	0.00				0.22	0.00	0.20
Sat Flow, veh/h	1781	3554	1560	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1385	175	442	1231	0				389	0	428
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	30.7	6.1	17.2	21.6	0.0				17.3	0.0	11.1
Cycle Q Clear(g_c), s	0.0	30.7	6.1	17.2	21.6	0.0				17.3	0.0	11.1
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	205	1421	624	457	1741	0				401	0	497
V/C Ratio(X)	0.00	0.97	0.28	0.97	0.71	0.00				0.97	0.00	0.86
Avail Cap(c_a), veh/h	240	1421	624	457	1741	0				401	0	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.6	16.2	30.7	15.9	0.0				30.7	0.0	25.8
Incr Delay (d2), s/veh	0.0	18.5	1.1	33.5	2.4	0.0				37.0	0.0	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.5	2.3	6.2	8.6	0.0				11.2	0.0	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	42.1	17.3	64.2	18.4	0.0				67.7	0.0	39.5
LnGrp LOS	A	D	B	E	B	A				E	A	D
Approach Vol, veh/h		1560			1673						817	
Approach Delay, s/veh		39.3			30.5						52.9	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	22.0	36.0		22.0	14.8	43.2
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 18	31.4		16.9	11.8	* 39
Max Q Clear Time (g_c+I1), s	19.2	32.7		19.3	0.0	23.6
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.0

Intersection Summary		
HCM 6th Ctrl Delay		38.4
HCM 6th LOS		D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1076	40	220	1206	160	30	30	160	220	30	71
Future Volume (veh/h)	41	1076	40	220	1206	160	30	30	160	220	30	71
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		0.98	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	1133	40	232	1269	162	32	32	20	232	32	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1984	70	249	1921	244	139	145	120	276	290	241
Arrive On Green	0.03	0.57	0.56	0.07	0.61	0.60	0.08	0.08	0.08	0.16	0.16	0.16
Sat Flow, veh/h	1781	3499	124	3456	3162	401	1781	1870	1541	1781	1870	1553
Grp Volume(v), veh/h	43	575	598	232	710	721	32	32	20	232	32	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1846	1728	1777	1787	1781	1870	1541	1781	1870	1553
Q Serve(g_s), s	3.0	25.9	25.9	8.3	32.7	33.3	2.1	2.0	1.5	15.8	1.8	1.3
Cycle Q Clear(g_c), s	3.0	25.9	25.9	8.3	32.7	33.3	2.1	2.0	1.5	15.8	1.8	1.3
Prop In Lane	1.00		0.07	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	1008	1047	249	1079	1085	139	145	120	276	290	241
V/C Ratio(X)	0.78	0.57	0.57	0.93	0.66	0.66	0.23	0.22	0.17	0.84	0.11	0.08
Avail Cap(c_a), veh/h	57	1008	1047	249	1079	1085	380	400	329	385	404	335
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	60.1	17.3	17.3	57.7	16.1	16.2	54.1	54.1	53.9	51.3	45.4	45.2
Incr Delay (d2), s/veh	43.7	2.3	2.3	38.5	3.1	3.2	0.3	0.3	0.2	8.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	11.0	11.4	5.0	13.6	14.0	1.0	1.0	0.6	7.7	0.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.9	19.7	19.6	96.2	19.2	19.4	54.4	54.4	54.1	59.5	45.5	45.2
LnGrp LOS	F	B	B	F	B	B	D	D	D	E	D	D
Approach Vol, veh/h		1216			1663			84			283	
Approach Delay, s/veh		22.6			30.0			54.3			57.0	
Approach LOS		C			C			D			E	

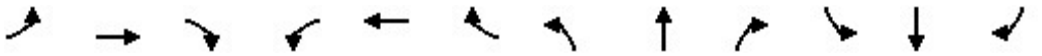
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	74.9		23.4	7.9	80.0		13.7				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	9.0	* 46		* 26	4.0	* 51		26.1				
Max Q Clear Time (g_c+I1), s	10.3	27.9		17.8	5.0	35.3		4.1				
Green Ext Time (p_c), s	0.0	3.2		0.2	0.0	4.2		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		30.2
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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



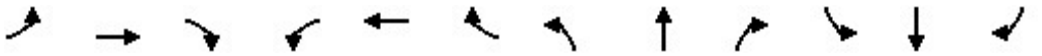
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	846	32	128	968	160	41	181	151	110	143	60
Future Volume (veh/h)	51	846	32	128	968	160	41	181	151	110	143	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	891	33	135	1019	159	43	191	36	116	151	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1259	47	402	1677	261	49	216	223	130	169	254
Arrive On Green	0.05	0.36	0.36	0.23	0.55	0.54	0.14	0.14	0.14	0.16	0.16	0.16
Sat Flow, veh/h	1781	3491	129	1781	3070	478	341	1513	1560	795	1035	1561
Grp Volume(v), veh/h	54	453	471	135	589	589	234	0	36	267	0	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1772	1853	0	1560	1831	0	1561
Q Serve(g_s), s	4.8	35.1	35.1	10.2	36.0	36.2	19.8	0.0	3.2	22.9	0.0	5.6
Cycle Q Clear(g_c), s	4.8	35.1	35.1	10.2	36.0	36.2	19.8	0.0	3.2	22.9	0.0	5.6
Prop In Lane	1.00		0.07	1.00		0.27	0.18		1.00	0.43		1.00
Lane Grp Cap(c), veh/h	86	641	665	402	971	968	265	0	223	298	0	254
V/C Ratio(X)	0.63	0.71	0.71	0.34	0.61	0.61	0.88	0.00	0.16	0.90	0.00	0.25
Avail Cap(c_a), veh/h	111	641	665	402	971	968	347	0	293	400	0	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.8	43.9	43.9	51.9	24.6	24.8	67.3	0.0	60.2	65.6	0.0	58.4
Incr Delay (d2), s/veh	2.8	6.5	6.3	0.2	2.8	2.8	15.8	0.0	0.1	15.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	16.7	17.3	4.6	16.0	16.1	10.7	0.0	1.3	12.1	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	50.4	50.2	52.1	27.5	27.6	83.1	0.0	60.3	80.8	0.0	58.6
LnGrp LOS	E	D	D	D	C	C	F	A	E	F	A	E
Approach Vol, veh/h		978			1313			270			330	
Approach Delay, s/veh		51.8			30.1			80.0			76.6	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.4	61.7		26.9	11.7	91.4		30.1				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 22	* 57		29.4	10.5	* 68		34.4				
Max Q Clear Time (g_c+I1), s	12.2	37.1		21.8	6.8	38.2		24.9				
Green Ext Time (p_c), s	0.0	2.4		0.4	0.0	3.6		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		47.4	
HCM 6th LOS		D	

Notes

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



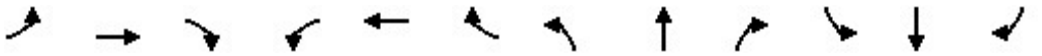
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	548	110	205	659	48	50	200	142	96	480	240
Future Volume (veh/h)	220	548	110	205	659	48	50	200	142	96	480	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	232	577	103	216	694	48	53	211	29	101	505	253
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	1139	203	139	1039	72	68	350	289	300	611	507
Arrive On Green	0.14	0.38	0.37	0.08	0.31	0.30	0.04	0.19	0.19	0.17	0.33	0.33
Sat Flow, veh/h	1781	2997	533	1781	3363	232	1781	1870	1544	1781	1870	1554
Grp Volume(v), veh/h	232	341	339	216	366	376	53	211	29	101	505	253
Grp Sat Flow(s),veh/h/ln	1781	1777	1754	1781	1777	1819	1781	1870	1544	1781	1870	1554
Q Serve(g_s), s	11.6	13.3	13.4	7.0	16.2	16.2	2.7	9.3	1.1	4.5	22.4	7.3
Cycle Q Clear(g_c), s	11.6	13.3	13.4	7.0	16.2	16.2	2.7	9.3	1.1	4.5	22.4	7.3
Prop In Lane	1.00		0.30	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	675	666	139	549	562	68	350	289	300	611	507
V/C Ratio(X)	0.92	0.51	0.51	1.56	0.67	0.67	0.78	0.60	0.10	0.34	0.83	0.50
Avail Cap(c_a), veh/h	253	675	666	139	549	562	79	732	604	300	732	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	21.4	21.5	41.5	27.1	27.1	42.9	33.5	17.6	33.0	28.0	9.4
Incr Delay (d2), s/veh	34.4	2.7	2.8	276.9	4.9	4.8	29.1	2.4	0.2	0.2	7.3	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	7.4	5.8	5.8	13.7	7.4	7.6	1.7	4.4	0.5	2.0	11.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	24.1	24.3	318.4	32.0	32.0	72.0	35.9	17.8	33.2	35.3	10.5
LnGrp LOS	E	C	C	F	C	C	E	D	B	C	D	B
Approach Vol, veh/h		912			958			293			859	
Approach Delay, s/veh		36.5			96.6			40.6			27.7	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	38.2	7.4	33.4	17.4	31.8	19.9	20.9
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	7.0	27.2	4.0	* 34	* 7	* 27	* 4	* 34
Max Q Clear Time (g_c+I1), s	9.0	15.4	4.7	24.4	13.6	18.2	6.5	11.3
Green Ext Time (p_c), s	0.0	4.4	0.0	4.2	0.0	4.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	53.4
HCM 6th LOS	D

Notes

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



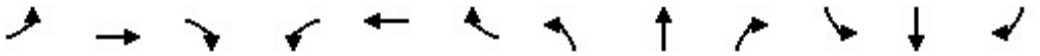
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	357	40	278	498	126	40	180	226	133	320	70
Future Volume (veh/h)	60	357	40	278	498	126	40	180	226	133	320	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	376	38	293	524	76	42	189	56	140	337	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	505	51	400	868	714	103	298	246	210	430	350
Arrive On Green	0.07	0.30	0.30	0.45	0.93	0.93	0.06	0.16	0.16	0.12	0.23	0.23
Sat Flow, veh/h	1781	1665	168	1781	1870	1539	1781	1870	1541	1781	1870	1524
Grp Volume(v), veh/h	63	0	414	293	524	76	42	189	56	140	337	26
Grp Sat Flow(s),veh/h/ln	1781	0	1833	1781	1870	1539	1781	1870	1541	1781	1870	1524
Q Serve(g_s), s	3.1	0.0	18.3	12.2	4.1	0.2	2.0	8.5	2.9	6.8	15.2	1.2
Cycle Q Clear(g_c), s	3.1	0.0	18.3	12.2	4.1	0.2	2.0	8.5	2.9	6.8	15.2	1.2
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	0	556	400	868	714	103	298	246	210	430	350
V/C Ratio(X)	0.50	0.00	0.74	0.73	0.60	0.11	0.41	0.63	0.23	0.67	0.78	0.07
Avail Cap(c_a), veh/h	158	0	556	400	868	714	158	555	457	210	555	452
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	28.2	22.6	1.9	0.6	40.9	35.4	33.0	38.0	32.5	27.1
Incr Delay (d2), s/veh	1.2	0.0	8.8	6.0	3.1	0.3	1.0	3.1	0.7	6.3	6.5	0.1
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	1.4	0.0	9.2	4.5	1.5	0.2	0.9	4.1	1.1	3.3	7.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	0.0	37.0	28.6	5.0	0.9	41.9	38.5	33.6	44.2	39.0	27.3
LnGrp LOS	D	A	D	C	A	A	D	D	C	D	D	C
Approach Vol, veh/h		477			893			287			503	
Approach Delay, s/veh		37.6			12.4			38.0			39.9	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.8	31.3	9.2	24.7	10.3	45.8	15.5	18.4
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 12	* 27	8.0	* 26	8.0	30.7	* 8	* 26
Max Q Clear Time (g_c+I1), s	14.2	20.3	4.0	17.2	5.1	6.1	8.8	10.5
Green Ext Time (p_c), s	0.0	1.2	0.0	1.9	0.0	3.1	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

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



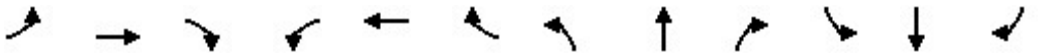
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	626	30	80	812	90	30	30	70	70	30	40
Future Volume (veh/h)	40	626	30	80	812	90	30	30	70	70	30	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	659	31	84	855	93	32	32	15	74	32	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	963	45	330	1158	126	122	111	41	151	54	57
Arrive On Green	0.07	1.00	1.00	0.19	0.70	0.69	0.13	0.13	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1781	1770	83	1781	1653	180	504	852	318	714	425	451
Grp Volume(v), veh/h	42	0	690	84	0	948	79	0	0	148	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1853	1781	0	1833	1673	0	0	1590	0	0
Q Serve(g_s), s	2.1	0.0	0.0	3.6	0.0	28.9	0.0	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	3.6	0.0	28.9	3.6	0.0	0.0	7.8	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.10	0.41		0.19	0.50		0.28
Lane Grp Cap(c), veh/h	64	0	1009	330	0	1284	274	0	0	262	0	0
V/C Ratio(X)	0.65	0.00	0.68	0.25	0.00	0.74	0.29	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	99	0	1009	330	0	1284	434	0	0	420	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.2	0.0	0.0	31.3	0.0	8.4	35.7	0.0	0.0	37.6	0.0	0.0
Incr Delay (d2), s/veh	4.1	0.0	3.8	0.1	0.0	3.8	0.4	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.1	1.6	0.0	10.9	1.6	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	3.8	31.5	0.0	12.2	36.1	0.0	0.0	39.0	0.0	0.0
LnGrp LOS	D	A	A	C	A	B	D	A	A	D	A	A
Approach Vol, veh/h		732			1032			79			148	
Approach Delay, s/veh		6.1			13.8			36.1			39.0	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	67.0		15.7	21.3	53.0		15.7				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	5.0	51.4		* 20	8.0	* 48		* 20				
Max Q Clear Time (g_c+I1), s	4.1	30.9		9.8	5.6	2.0		5.6				
Green Ext Time (p_c), s	0.0	10.9		0.4	0.0	9.3		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		13.7	
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)	351	611	134	632	680	430	134	322	560	230	266	192
Future Volume (veh/h)	351	611	134	632	680	430	134	322	560	230	266	192
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		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	369	643	140	665	716	373	141	339	569	242	280	-59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	634	138	563	1136	500	333	332	292	308	323	274
Arrive On Green	0.22	0.22	0.21	0.32	0.32	0.32	0.19	0.19	0.18	0.17	0.17	0.00
Sat Flow, veh/h	1781	2893	629	1781	3554	1563	1781	1777	1564	1781	1870	1585
Grp Volume(v), veh/h	369	395	388	665	716	373	141	339	569	242	280	-59
Grp Sat Flow(s),veh/h/ln	1781	1777	1745	1781	1777	1563	1781	1777	1564	1781	1870	1585
Q Serve(g_s), s	31.7	34.0	34.0	49.0	26.6	33.1	10.8	29.0	29.0	20.2	22.6	0.0
Cycle Q Clear(g_c), s	31.7	34.0	34.0	49.0	26.6	33.1	10.8	29.0	29.0	20.2	22.6	0.0
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	390	383	563	1136	500	333	332	292	308	323	274
V/C Ratio(X)	0.95	1.01	1.02	1.18	0.63	0.75	0.42	1.02	1.95	0.79	0.87	-0.22
Avail Cap(c_a), veh/h	391	390	383	563	1136	500	333	332	292	368	386	327
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	0.00
Uniform Delay (d), s/veh	59.9	60.5	60.7	53.0	44.9	47.1	55.7	63.0	63.4	61.4	62.4	0.0
Incr Delay (d2), s/veh	32.9	48.8	49.9	98.9	1.3	6.5	0.6	54.6	437.7	8.5	15.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	20.5	20.3	37.1	12.0	13.7	4.9	18.0	47.0	9.9	12.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.8	109.4	110.6	151.9	46.3	53.6	56.3	117.7	501.1	69.9	78.0	0.0
LnGrp LOS	F	F	F	F	D	D	E	F	F	E	E	A
Approach Vol, veh/h		1152			1754			1049			463	
Approach Delay, s/veh		104.5			87.9			317.4			83.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	53.0	38.3		33.0	37.7	53.6		30.8				
Change Period (Y+Rc), s	4.0	* 5.3		* 4.8	4.0	5.3		5.1				
Max Green Setting (Gmax), s	49.0	* 33		* 28	34.0	47.7		30.9				
Max Q Clear Time (g_c+I1), s	51.0	36.0		31.0	33.7	35.1		24.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.6		1.1				

Intersection Summary		
HCM 6th Ctrl Delay		146.3
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1469	495	0	1600	400	420
Future Volume (veh/h)	1469	495	0	1600	400	420
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	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	1546	0	0	1684	421	293
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	2441		0	2441	580	468
Arrive On Green	0.69	0.00	0.00	0.69	0.17	0.17
Sat Flow, veh/h	3647	1585	0	3741	3456	2790
Grp Volume(v), veh/h	1546	0	0	1684	421	293
Grp Sat Flow(s),veh/h/ln	1777	1585	0	1777	1728	1395
Q Serve(g_s), s	13.3	0.0	0.0	15.5	6.4	5.4
Cycle Q Clear(g_c), s	13.3	0.0	0.0	15.5	6.4	5.4
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2441		0	2441	580	468
V/C Ratio(X)	0.63		0.00	0.69	0.73	0.63
Avail Cap(c_a), veh/h	2441		0	2441	691	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	5.1	21.7	21.3
Incr Delay (d2), s/veh	1.3	0.0	0.0	1.6	2.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	3.6	2.5	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.0	0.0	0.0	6.7	24.0	22.1
LnGrp LOS	A		A	A	C	C
Approach Vol, veh/h	1546	A		1684	714	
Approach Delay, s/veh	6.0			6.7	23.2	
Approach LOS	A			A	C	

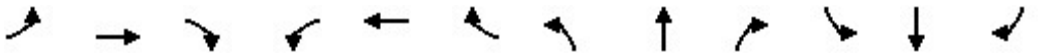
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	41.8				41.8	13.2
Change Period (Y+Rc), s	* 4.8				* 4.8	4.8
Max Green Setting (Gmax), s	* 35				* 35	10.2
Max Q Clear Time (g_c+I1), s	15.3				17.5	8.4
Green Ext Time (p_c), s	2.8				3.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

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

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



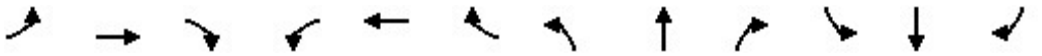
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1474	240	300	1440	0	0	0	0	490	0	360
Future Volume (veh/h)	0	1474	240	300	1440	0	0	0	0	490	0	360
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1552	196	316	1516	0				516	0	379
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	111	1540	676	316	1808	0				495	0	502
Arrive On Green	0.00	0.43	0.43	0.16	0.51	0.00				0.28	0.00	0.25
Sat Flow, veh/h	1781	3554	1560	2031	3647	0				1781	0	1585
Grp Volume(v), veh/h	0	1552	196	316	1516	0				516	0	379
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1015	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	39.0	7.3	14.0	32.9	0.0				25.0	0.0	13.7
Cycle Q Clear(g_c), s	0.0	39.0	7.3	14.0	32.9	0.0				25.0	0.0	13.7
Prop In Lane	1.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	111	1540	676	316	1808	0				495	0	502
V/C Ratio(X)	0.00	1.01	0.29	1.00	0.84	0.00				1.04	0.00	0.76
Avail Cap(c_a), veh/h	143	1540	676	316	1808	0				495	0	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	25.5	16.5	38.0	18.9	0.0				32.5	0.0	27.6
Incr Delay (d2), s/veh	0.0	24.9	1.1	50.7	4.8	0.0				52.1	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.6	2.7	5.6	13.6	0.0				17.5	0.0	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	50.4	17.6	88.7	23.8	0.0				84.6	0.0	33.4
LnGrp LOS	A	F	B	F	C	A				F	A	C
Approach Vol, veh/h		1748			1832						895	
Approach Delay, s/veh		46.7			35.0						62.9	
Approach LOS		D			C						E	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	18.0	43.0		29.0	11.2	49.8
Change Period (Y+Rc), s	* 4.2	4.6		5.1	4.6	* 4.6
Max Green Setting (Gmax), s	* 14	38.4		23.9	8.2	* 45
Max Q Clear Time (g_c+I1), s	16.0	41.0		27.0	0.0	34.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.4

Intersection Summary		
HCM 6th Ctrl Delay		45.1
HCM 6th LOS		D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1454	70	310	1330	150	120	50	80	200	30	42
Future Volume (veh/h)	41	1454	70	310	1330	150	120	50	80	200	30	42
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	1531	72	326	1400	152	90	104	-64	211	32	-12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	2010	94	310	2076	224	139	146	124	249	262	222
Arrive On Green	0.03	0.58	0.58	0.09	0.64	0.64	0.08	0.08	0.00	0.14	0.14	0.00
Sat Flow, veh/h	1781	3453	162	3456	3227	348	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	43	785	818	326	766	786	90	104	-64	211	32	-12
Grp Sat Flow(s),veh/h/ln	1781	1777	1838	1728	1777	1798	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.5	48.0	48.6	13.0	39.2	40.2	7.1	7.9	0.0	16.8	2.2	0.0
Cycle Q Clear(g_c), s	3.5	48.0	48.6	13.0	39.2	40.2	7.1	7.9	0.0	16.8	2.2	0.0
Prop In Lane	1.00		0.09	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1034	1070	310	1143	1157	139	146	124	249	262	222
V/C Ratio(X)	0.88	0.76	0.76	1.05	0.67	0.68	0.65	0.71	-0.52	0.85	0.12	-0.05
Avail Cap(c_a), veh/h	49	1034	1070	310	1143	1157	328	344	292	332	348	295
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.3	22.7	22.9	66.0	16.2	16.4	64.9	65.3	0.0	60.8	54.5	0.0
Incr Delay (d2), s/veh	81.0	5.2	5.2	65.5	3.1	3.2	1.9	2.4	0.0	11.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	21.1	22.1	8.6	16.5	17.1	3.3	3.9	0.0	8.4	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	151.2	27.9	28.1	131.5	19.3	19.7	66.8	67.7	0.0	72.1	54.6	0.0
LnGrp LOS	F	C	C	F	B	B	E	E	A	E	D	A
Approach Vol, veh/h		1646			1878			130			231	
Approach Delay, s/veh		31.2			38.9			100.4			73.4	
Approach LOS		C			D			F			E	

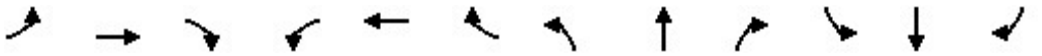
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	88.4		24.3	8.0	97.4		15.3				
Change Period (Y+Rc), s	4.0	* 4.8		* 5	4.0	* 4.8		4.6				
Max Green Setting (Gmax), s	13.0	* 62		* 26	4.0	* 71		26.1				
Max Q Clear Time (g_c+I1), s	15.0	50.6		18.8	5.5	42.2		9.9				
Green Ext Time (p_c), s	0.0	4.2		0.1	0.0	5.4		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		39.8
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

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



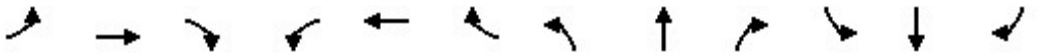
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	1176	72	125	1176	150	53	182	229	140	142	70
Future Volume (veh/h)	72	1176	72	125	1176	150	53	182	229	140	142	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	1238	75	132	1238	149	56	192	118	147	149	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1449	88	246	1660	199	63	215	234	161	163	278
Arrive On Green	0.05	0.43	0.42	0.14	0.52	0.52	0.15	0.15	0.15	0.18	0.18	0.18
Sat Flow, veh/h	1781	3399	206	1781	3187	382	418	1432	1561	906	919	1561
Grp Volume(v), veh/h	76	646	667	132	688	699	248	0	118	296	0	74
Grp Sat Flow(s),veh/h/ln	1781	1777	1828	1781	1777	1792	1849	0	1561	1825	0	1561
Q Serve(g_s), s	6.8	52.5	52.7	11.0	48.4	49.1	21.1	0.0	11.1	25.5	0.0	6.5
Cycle Q Clear(g_c), s	6.8	52.5	52.7	11.0	48.4	49.1	21.1	0.0	11.1	25.5	0.0	6.5
Prop In Lane	1.00		0.11	1.00		0.21	0.23		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	91	757	779	246	926	934	277	0	234	324	0	278
V/C Ratio(X)	0.83	0.85	0.86	0.54	0.74	0.75	0.89	0.00	0.50	0.91	0.00	0.27
Avail Cap(c_a), veh/h	114	757	779	246	926	934	314	0	265	367	0	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.2	41.4	41.5	64.2	29.9	30.2	66.8	0.0	62.5	64.6	0.0	56.8
Incr Delay (d2), s/veh	28.1	11.7	11.6	1.3	5.4	5.5	22.7	0.0	0.6	23.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	25.4	26.2	5.1	22.0	22.5	11.8	0.0	4.5	14.1	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.3	53.1	53.1	65.5	35.3	35.6	89.5	0.0	63.2	87.9	0.0	57.0
LnGrp LOS	F	D	D	E	D	D	F	A	E	F	A	E
Approach Vol, veh/h		1389			1519			366			370	
Approach Delay, s/veh		55.9			38.1			81.0			81.7	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.4	72.2		28.0	12.2	87.4		32.4				
Change Period (Y+Rc), s	* 4.8	* 4.7		4.6	3.5	* 4.8		4.6				
Max Green Setting (Gmax), s	* 17	* 68		26.6	10.7	* 74		31.6				
Max Q Clear Time (g_c+I1), s	13.0	54.7		23.1	8.8	51.1		27.5				
Green Ext Time (p_c), s	0.0	3.4		0.3	0.0	4.4		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		53.6
HCM 6th LOS		D

Notes

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



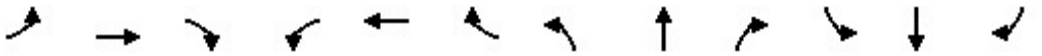
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	639	100	204	650	108	80	440	245	108	360	290
Future Volume (veh/h)	290	639	100	204	650	108	80	440	245	108	360	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	305	673	92	215	684	111	84	463	138	114	379	305
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	1038	142	247	816	132	107	564	468	107	579	480
Arrive On Green	0.20	0.33	0.33	0.14	0.27	0.26	0.06	0.30	0.30	0.06	0.31	0.31
Sat Flow, veh/h	1781	3126	427	1781	3043	493	1781	1870	1553	1781	1870	1553
Grp Volume(v), veh/h	305	382	383	215	399	396	84	463	138	114	379	305
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1781	1777	1760	1781	1870	1553	1781	1870	1553
Q Serve(g_s), s	16.6	18.3	18.4	11.8	21.2	21.3	4.7	23.0	4.4	6.0	17.6	9.6
Cycle Q Clear(g_c), s	16.6	18.3	18.4	11.8	21.2	21.3	4.7	23.0	4.4	6.0	17.6	9.6
Prop In Lane	1.00		0.24	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	590	590	247	476	472	107	564	468	107	579	480
V/C Ratio(X)	0.87	0.65	0.65	0.87	0.84	0.84	0.78	0.82	0.29	1.07	0.66	0.64
Avail Cap(c_a), veh/h	350	590	590	285	476	472	125	658	546	107	640	531
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	0.51	0.51	0.51	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	28.4	28.5	42.2	34.6	34.7	46.4	32.4	11.4	47.0	29.9	9.6
Incr Delay (d2), s/veh	19.7	5.4	5.5	11.5	8.9	9.1	20.3	7.9	0.5	106.1	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	8.5	8.6	5.9	10.1	10.1	2.7	11.5	2.5	5.8	8.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	33.9	34.0	53.7	43.4	43.7	66.6	40.3	11.9	153.1	32.4	12.2
LnGrp LOS	E	C	C	D	D	D	E	D	B	F	C	B
Approach Vol, veh/h		1070			1010			685			798	
Approach Delay, s/veh		41.0			45.7			37.8			42.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	37.2	10.0	34.9	24.3	30.8	10.8	34.1
Change Period (Y+Rc), s	4.0	4.6	4.0	* 4.8	* 4.6	* 4.7	* 4.8	* 5.2
Max Green Setting (Gmax), s	16.0	26.2	7.0	* 33	* 16	* 26	* 6	* 34
Max Q Clear Time (g_c+I1), s	13.8	20.4	6.7	19.6	18.6	23.3	8.0	25.0
Green Ext Time (p_c), s	0.1	3.0	0.0	4.3	0.0	1.6	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes

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



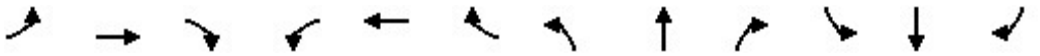
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	528	30	218	478	126	60	300	378	215	200	70
Future Volume (veh/h)	70	528	30	218	478	126	60	300	378	215	200	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	556	28	229	503	76	63	316	216	226	211	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	562	28	301	793	652	118	406	336	214	524	428
Arrive On Green	0.07	0.32	0.31	0.11	0.28	0.28	0.07	0.22	0.22	0.12	0.28	0.28
Sat Flow, veh/h	1781	1762	89	1781	1870	1537	1781	1870	1547	1781	1870	1529
Grp Volume(v), veh/h	74	0	584	229	503	76	63	316	216	226	211	26
Grp Sat Flow(s),veh/h/ln	1781	0	1851	1781	1870	1537	1781	1870	1547	1781	1870	1529
Q Serve(g_s), s	4.0	0.0	31.4	12.5	23.5	2.3	3.4	15.9	12.7	12.0	9.2	1.2
Cycle Q Clear(g_c), s	4.0	0.0	31.4	12.5	23.5	2.3	3.4	15.9	12.7	12.0	9.2	1.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	0	590	301	793	652	118	406	336	214	524	428
V/C Ratio(X)	0.60	0.00	0.99	0.76	0.63	0.12	0.54	0.78	0.64	1.06	0.40	0.06
Avail Cap(c_a), veh/h	143	0	590	301	793	652	160	499	413	214	555	454
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	0.0	33.9	42.4	29.0	8.3	45.2	36.9	35.6	44.0	29.2	26.4
Incr Delay (d2), s/veh	2.4	0.0	34.5	9.8	3.8	0.4	1.4	7.1	3.2	77.5	0.7	0.1
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	1.9	0.0	19.5	6.5	11.9	1.3	1.6	8.0	5.0	9.9	4.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	0.0	68.4	52.2	32.9	8.7	46.6	44.0	38.8	121.5	29.9	26.5
LnGrp LOS	D	A	E	D	C	A	D	D	D	F	C	C
Approach Vol, veh/h		658			808			595			463	
Approach Delay, s/veh		66.0			36.1			42.4			74.4	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	35.9	10.6	32.0	11.0	46.4	16.9	25.7
Change Period (Y+Rc), s	* 4.6	* 4.7	4.0	* 4.9	4.0	4.6	* 4.9	* 4.7
Max Green Setting (Gmax), s	* 13	* 31	9.0	* 29	8.0	36.7	* 12	* 26
Max Q Clear Time (g_c+I1), s	14.5	33.4	5.4	11.2	6.0	25.5	14.0	17.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	2.2	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1101	30	50	702	160	30	30	60	90	30	50
Future Volume (veh/h)	50	1101	30	50	702	160	30	30	60	90	30	50
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	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	1159	31	53	739	166	32	32	4	95	32	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1123	30	190	1021	229	140	126	13	166	48	66
Arrive On Green	0.03	0.42	0.41	0.11	0.69	0.69	0.15	0.15	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	1812	48	1781	1471	331	593	857	91	771	332	460
Grp Volume(v), veh/h	53	0	1190	53	0	905	68	0	0	180	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	0	1802	1541	0	0	1563	0	0
Q Serve(g_s), s	3.0	0.0	62.0	2.7	0.0	30.9	0.0	0.0	0.0	7.4	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	62.0	2.7	0.0	30.9	3.5	0.0	0.0	10.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.18	0.47		0.06	0.53		0.29
Lane Grp Cap(c), veh/h	69	0	1153	190	0	1251	280	0	0	281	0	0
V/C Ratio(X)	0.77	0.00	1.03	0.28	0.00	0.72	0.24	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	89	0	1153	190	0	1251	376	0	0	378	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.3	0.0	29.2	41.1	0.0	9.4	37.8	0.0	0.0	41.1	0.0	0.0
Incr Delay (d2), s/veh	19.1	0.0	35.0	0.3	0.0	3.7	0.3	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	39.7	1.2	0.0	11.9	1.5	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	0.0	64.2	41.4	0.0	13.1	38.1	0.0	0.0	43.0	0.0	0.0
LnGrp LOS	E	A	F	D	A	B	D	A	A	D	A	A
Approach Vol, veh/h		1243			958			68			180	
Approach Delay, s/veh		64.4			14.7			38.1			43.0	
Approach LOS		E			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	73.4		18.7	15.3	66.0		18.7				
Change Period (Y+Rc), s	4.0	4.6		* 4.9	4.6	* 4.6		* 4.9				
Max Green Setting (Gmax), s	5.0	61.4		* 20	5.0	* 61		* 20				
Max Q Clear Time (g_c+I1), s	5.0	32.9		12.9	4.7	64.0		5.5				
Green Ext Time (p_c), s	0.0	12.4		0.4	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		42.6
HCM 6th LOS		D

Notes

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

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	180	173	96.3%	46.9	7.5	D
	Through	80	87	108.5%	33.3	7.0	C
	Right Turn	80	77	96.8%	18.4	4.9	B
	Subtotal	340	338	99.3%	36.7	5.2	D
SB	Left Turn	30	25	83.0%	41.8	9.6	D
	Through	155	151	97.1%	44.7	15.6	D
	Right Turn	30	32	106.0%	43.5	12.4	D
	Subtotal	215	207	96.4%	43.7	12.8	D
EB	Left Turn	20	20	98.5%	50.7	14.8	D
	Through	660	655	99.2%	37.3	11.6	D
	Right Turn	200	200	99.8%	30.2	12.4	C
	Subtotal	880	874	99.3%	36.0	11.7	D
WB	Left Turn	110	110	99.9%	77.0	39.3	E
	Through	650	645	99.2%	32.7	4.9	C
	Right Turn	30	30	101.3%	21.4	11.8	C
	Subtotal	790	785	99.4%	38.6	9.8	D
Total		2,225	2,204	99.1%	37.8	8.9	D

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	19	94.5%	42.4	18.4	D
	Through						
	Right Turn	80	80	99.6%	8.4	2.9	A
	Subtotal	100	99	98.6%	15.2	5.9	B
SB	Left Turn	20	23	116.5%	58.2	18.0	E
	Through						
	Right Turn						
	Subtotal	20	23	116.5%	58.2	18.0	E
EB	Left Turn	20	21	105.0%	59.4	11.7	E
	Through	780	761	97.6%	12.9	2.0	B
	Right Turn	20	21	106.0%	9.6	4.0	A
	Subtotal	820	803	98.0%	14.3	1.9	B
WB	Left Turn	110	102	92.8%	49.8	11.1	D
	Through	730	727	99.6%	7.7	3.0	A
	Right Turn	20	21	103.0%	5.9	5.1	A
	Subtotal	860	850	98.8%	12.5	3.3	B
Total		1,800	1,775	98.6%	14.2	2.0	B

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	19	94.0%	29.6	20.2	D
	Through	20	20	100.5%	34.7	29.2	D
	Right Turn	110	114	103.5%	21.2	21.0	C
	Subtotal	150	153	101.8%	24.6	21.8	C
EB	Left Turn	80	82	102.0%	8.6	4.3	A
	Through	610	613	100.5%	3.4	4.0	A
	Right Turn	20	19	96.5%	2.4	3.4	A
	Subtotal	710	714	100.6%	3.9	3.9	A
WB	Left Turn	20	19	95.5%	6.1	5.5	A
	Through	620	626	101.0%	2.0	1.1	A
	Right Turn	20	21	103.0%	0.9	0.8	A
	Subtotal	660	666	100.8%	2.1	1.1	A
Total		1,520	1,532	100.8%	5.3	3.5	A

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	360	364	101.2%	59.0	25.7	E
	Through	270	263	97.4%	10.8	2.2	B
	Right Turn	20	20	99.0%	2.6	1.7	A
	Subtotal	650	647	99.5%	38.4	13.6	D
SB	Left Turn	5	3	66.0%	52.0	107.4	D
	Through	330	330	100.1%	65.6	26.9	E
	Right Turn	130	130	100.2%	32.0	16.7	C
	Subtotal	465	464	99.7%	56.2	23.4	E
EB	Left Turn	50	51	102.2%	55.3	17.2	E
	Through	140	138	98.8%	58.5	19.4	E
	Right Turn	440	444	100.9%	15.7	8.2	B
	Subtotal	630	633	100.5%	27.6	10.5	C
WB	Left Turn	20	21	106.0%	90.1	59.9	F
	Through	170	170	100.2%	94.6	48.0	F
	Right Turn	20	21	105.0%	81.4	38.0	F
	Subtotal	210	213	101.2%	92.2	47.6	F
Total		1,955	1,957	100.1%	45.4	9.8	D

SimTraffic Post-Processor **Petaluma Station**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	260	256	98.6%	41.9	7.8	D
	Through	150	154	102.5%	33.4	5.5	C
	Right Turn	80	77	96.8%	24.8	8.0	C
	Subtotal	490	488	99.5%	36.5	5.9	D
SB	Left Turn	50	47	94.2%	44.2	24.3	D
	Through	95	96	101.4%	48.4	24.3	D
	Right Turn	30	31	102.3%	46.6	33.3	D
	Subtotal	175	174	99.5%	47.0	25.0	D
EB	Left Turn	60	60	99.8%	61.0	12.1	E
	Through	800	788	98.6%	49.8	14.7	D
	Right Turn	200	202	101.2%	46.9	21.6	D
	Subtotal	1,060	1,051	99.1%	49.8	15.9	D
WB	Left Turn	100	92	92.2%	90.7	55.6	F
	Through	800	797	99.6%	50.1	16.1	D
	Right Turn	60	56	93.0%	40.1	14.9	D
	Subtotal	960	945	98.4%	52.3	16.1	D
Total		2,685	2,657	99.0%	47.8	12.4	D

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	29	95.7%	50.3	10.3	D
	Through	20	19	94.5%	62.7	13.1	E
	Right Turn	130	129	98.8%	20.3	6.9	C
	Subtotal	180	176	97.8%	28.1	6.9	C
SB	Left Turn	20	20	98.0%	63.5	23.3	E
	Through	20	21	106.5%	53.5	14.4	D
	Right Turn						
	Subtotal	40	41	102.3%	55.6	12.7	E
EB	Left Turn	20	21	105.5%	81.0	45.5	F
	Through	910	908	99.7%	29.9	24.9	C
	Right Turn	20	17	84.5%	32.1	40.4	C
	Subtotal	950	946	99.5%	31.1	25.4	C
WB	Left Turn	120	120	100.1%	55.8	10.2	E
	Through	950	946	99.6%	10.6	4.4	B
	Right Turn	20	20	100.5%	6.3	6.7	A
	Subtotal	1,090	1,087	99.7%	15.1	5.2	B
Total		2,260	2,249	99.5%	23.6	12.8	C

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	24	118.0%	62.7	35.9	F
	Through	20	22	111.5%	79.0	85.8	F
	Right Turn	120	128	106.5%	48.7	51.1	E
	Subtotal	160	174	108.6%	54.5	53.2	F
EB	Left Turn	130	134	103.4%	16.8	20.6	C
	Through	800	786	98.2%	11.5	19.1	B
	Right Turn	20	22	107.5%	7.6	8.3	A
	Subtotal	950	942	99.1%	12.2	19.2	B
WB	Left Turn	20	22	110.5%	7.5	4.1	A
	Through	570	564	99.0%	2.8	0.8	A
	Right Turn	30	30	100.3%	1.5	1.3	A
	Subtotal	620	617	99.4%	2.9	0.8	A
Total		1,730	1,732	100.1%	13.1	14.5	B

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	350	349	99.8%	96.5	52.9	F
	Through	370	368	99.5%	16.8	3.7	B
	Right Turn	20	19	97.0%	5.0	3.5	A
	Subtotal	740	737	99.6%	53.4	24.9	D
SB	Left Turn	5	5	100.0%	50.5	37.7	D
	Through	290	290	100.1%	74.6	47.5	E
	Right Turn	100	93	92.9%	21.0	13.8	C
	Subtotal	395	388	98.3%	62.1	42.5	E
EB	Left Turn	100	100	99.7%	60.2	25.7	E
	Through	150	148	98.3%	67.6	31.5	E
	Right Turn	570	566	99.4%	32.9	27.2	C
	Subtotal	820	814	99.2%	43.2	27.8	D
WB	Left Turn	20	21	106.0%	87.8	42.8	F
	Through	170	176	103.6%	75.6	21.2	E
	Right Turn	20	20	98.5%	66.8	53.0	E
	Subtotal	210	217	103.3%	76.6	23.2	E
Total		2,165	2,155	99.6%	53.2	23.3	D

SimTraffic Post-Processor **Petaluma Station**
Average Results from 10 Runs **Existing Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	184	179	97.4%	42.4	7.7	D
	Through	83	86	104.1%	31.1	8.5	C
	Right Turn	80	78	96.9%	18.7	7.7	B
	Subtotal	347	343	98.9%	35.0	5.8	D
SB	Left Turn	30	28	93.7%	49.5	16.6	D
	Through	156	157	100.7%	47.8	8.8	D
	Right Turn	32	34	106.3%	44.8	13.4	D
	Subtotal	218	219	100.6%	47.7	7.9	D
EB	Left Turn	24	26	108.8%	55.6	17.3	E
	Through	674	675	100.2%	41.9	13.5	D
	Right Turn	200	199	99.3%	37.0	13.7	D
	Subtotal	898	900	100.2%	41.3	13.4	D
WB	Left Turn	110	115	104.4%	72.8	24.0	E
	Through	656	663	101.0%	35.3	9.8	D
	Right Turn	30	29	95.3%	24.4	8.1	C
	Subtotal	796	806	101.3%	40.6	11.7	D
Total		2,259	2,269	100.4%	40.7	10.5	D

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	35	99.1%	48.9	11.0	D
	Through						
	Right Turn	98	105	107.6%	14.9	4.6	B
	Subtotal	133	140	105.3%	23.2	5.3	C
SB	Left Turn	20	17	84.5%	60.0	25.8	E
	Through						
	Right Turn						
	Subtotal	20	17	84.5%	60.0	25.8	E
EB	Left Turn	20	20	101.5%	54.9	21.5	D
	Through	780	773	99.1%	19.5	13.9	B
	Right Turn	26	27	102.7%	15.3	13.9	B
	Subtotal	826	820	99.3%	20.5	13.9	C
WB	Left Turn	121	123	101.2%	41.3	6.6	D
	Through	731	726	99.3%	7.2	2.5	A
	Right Turn	20	22	108.0%	7.3	8.6	A
	Subtotal	872	870	99.8%	12.0	2.1	B
Total		1,851	1,847	99.8%	17.2	7.3	B

SimTraffic Post-Processor **Petaluma Station**
Average Results from 10 Runs **Existing Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	67	68	101.3%	71.5	33.7	F
	Through	20	21	105.0%	72.1	43.4	F
	Right Turn	125	127	101.4%	56.8	30.4	F
	Subtotal	212	216	101.7%	63.7	33.6	F
EB	Left Turn	86	86	99.8%	8.0	2.7	A
	Through	611	606	99.2%	2.0	1.7	A
	Right Turn	20	20	98.0%	2.6	4.6	A
	Subtotal	717	712	99.2%	2.8	1.7	A
WB	Left Turn	20	20	99.0%	7.5	3.7	A
	Through	620	613	98.9%	2.6	1.6	A
	Right Turn	35	36	103.4%	1.7	0.9	A
	Subtotal	675	669	99.1%	2.7	1.6	A
Total		1,604	1,596	99.5%	10.8	4.3	B

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	368	364	99.0%	58.9	20.3	E
	Through	274	271	99.0%	10.3	1.6	B
	Right Turn	20	16	82.0%	3.3	2.5	A
	Subtotal	662	652	98.5%	36.6	9.5	D
SB	Left Turn	5	4	74.0%	61.4	67.7	E
	Through	330	339	102.6%	63.3	26.6	E
	Right Turn	131	127	96.6%	28.3	17.5	C
	Subtotal	466	469	100.6%	53.9	22.8	D
EB	Left Turn	53	49	92.5%	53.2	15.7	D
	Through	153	153	99.9%	64.7	16.1	E
	Right Turn	456	455	99.8%	20.0	12.8	B
	Subtotal	662	657	99.2%	32.7	14.0	C
WB	Left Turn	20	20	97.5%	92.1	48.5	F
	Through	176	177	100.6%	92.6	39.3	F
	Right Turn	20	21	106.5%	66.4	48.6	E
	Subtotal	216	218	100.9%	90.3	38.8	F
Total		2,006	1,996	99.5%	44.9	12.9	D

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	270	267	99.0%	42.4	9.9	D
	Through	152	156	102.8%	36.8	6.2	D
	Right Turn	80	82	101.9%	24.3	4.6	C
	Subtotal	502	505	100.6%	37.6	6.4	D
SB	Left Turn	50	46	91.2%	42.3	12.1	D
	Through	98	96	98.2%	43.9	11.8	D
	Right Turn	34	35	102.9%	35.7	14.3	D
	Subtotal	182	177	97.1%	42.2	10.2	D
EB	Left Turn	63	64	102.2%	65.7	14.6	E
	Through	812	817	100.6%	55.7	11.3	E
	Right Turn	200	194	97.1%	50.3	12.6	D
	Subtotal	1,075	1,076	100.0%	55.2	11.6	E
WB	Left Turn	100	97	96.9%	91.1	36.4	F
	Through	817	814	99.7%	58.9	25.2	E
	Right Turn	60	63	104.5%	50.8	29.0	D
	Subtotal	977	974	99.7%	61.5	26.4	E
Total		2,736	2,731	99.8%	53.8	13.8	D

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	38	95.5%	43.3	8.9	D
	Through	20	21	104.0%	50.0	10.8	D
	Right Turn	144	149	103.5%	22.9	4.7	C
	Subtotal	204	208	102.0%	29.4	4.4	C
SB	Left Turn	20	19	94.5%	56.6	20.0	E
	Through	20	19	94.5%	58.0	20.9	E
	Right Turn						
	Subtotal	40	38	94.5%	55.7	15.9	E
EB	Left Turn	20	19	95.5%	70.6	15.2	E
	Through	911	904	99.2%	25.3	10.1	C
	Right Turn	35	34	97.1%	19.2	10.4	B
	Subtotal	966	957	99.1%	26.1	10.0	C
WB	Left Turn	151	150	99.6%	53.7	7.1	D
	Through	950	946	99.5%	11.3	2.4	B
	Right Turn	20	22	109.5%	7.4	5.8	A
	Subtotal	1,121	1,118	99.7%	16.6	2.8	B
Total		2,331	2,321	99.6%	22.4	5.5	C

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	55	39	70.5%	289.7	125.6	F
	Through	20	13	65.0%	299.6	133.2	F
	Right Turn	130	92	70.9%	290.4	165.0	F
	Subtotal	205	144	70.2%	292.7	145.0	F
EB	Left Turn	145	140	96.6%	32.1	15.9	D
	Through	800	792	99.0%	27.0	17.3	D
	Right Turn	20	19	97.0%	27.2	21.6	D
	Subtotal	965	952	98.6%	27.7	17.0	D
WB	Left Turn	20	20	97.5%	17.6	16.0	C
	Through	571	556	97.4%	5.8	5.8	A
	Right Turn	70	65	92.7%	5.5	7.5	A
	Subtotal	661	641	96.9%	6.0	6.1	A
Total		1,831	1,737	94.8%	33.4	10.3	D

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	372	356	95.6%	174.4	74.9	F
	Through	380	383	100.8%	16.0	3.1	B
	Right Turn	20	21	106.5%	5.5	2.5	A
	Subtotal	772	760	98.4%	94.4	40.2	F
SB	Left Turn	5	4	88.0%	77.4	74.3	E
	Through	290	276	95.3%	74.4	31.2	E
	Right Turn	103	102	98.7%	30.3	18.3	C
	Subtotal	398	383	96.1%	62.2	26.7	E
EB	Left Turn	102	99	97.1%	96.2	29.0	F
	Through	161	157	97.6%	94.2	33.4	F
	Right Turn	581	557	95.8%	62.0	27.5	E
	Subtotal	844	813	96.3%	73.0	29.0	E
WB	Left Turn	20	20	99.0%	86.6	34.9	F
	Through	186	187	100.6%	89.3	32.8	F
	Right Turn	20	22	110.5%	84.4	37.1	F
	Subtotal	226	229	101.3%	88.7	32.5	F
Total		2,240	2,184	97.5%	79.1	17.4	E

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	218	209	95.7%	49.4	5.9	D
	Through	117	111	94.6%	40.9	11.9	D
	Right Turn	90	91	101.1%	20.6	8.3	C
	Subtotal	425	410	96.5%	40.3	6.4	D
SB	Left Turn	30	30	99.0%	87.3	45.6	F
	Through	194	193	99.6%	94.1	48.7	F
	Right Turn	30	31	104.0%	95.0	75.6	F
	Subtotal	254	254	100.0%	93.3	49.7	F
EB	Left Turn	23	22	97.0%	83.4	27.0	F
	Through	729	708	97.1%	76.9	20.4	E
	Right Turn	237	232	97.7%	79.7	25.9	E
	Subtotal	989	962	97.3%	77.9	21.6	E
WB	Left Turn	122	115	94.6%	209.7	151.8	F
	Through	704	713	101.3%	62.7	35.0	E
	Right Turn	34	35	104.1%	33.2	17.8	C
	Subtotal	860	864	100.5%	80.5	50.0	F
Total		2,528	2,490	98.5%	74.4	26.2	E

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	18	91.0%	49.8	22.9	D
	Through						
	Right Turn	89	89	99.8%	25.7	15.8	C
	Subtotal	109	107	98.2%	29.7	13.8	C
SB	Left Turn	20	19	97.0%	48.4	13.0	D
	Through						
	Right Turn						
	Subtotal	20	19	97.0%	48.4	13.0	D
EB	Left Turn	20	18	89.5%	85.2	43.1	F
	Through	880	851	96.7%	63.8	53.4	E
	Right Turn	20	20	97.5%	64.6	70.3	E
	Subtotal	920	889	96.6%	64.4	53.2	E
WB	Left Turn	123	127	103.0%	45.5	7.2	D
	Through	809	807	99.8%	7.7	2.7	A
	Right Turn	20	20	97.5%	4.4	3.2	A
	Subtotal	952	954	100.2%	12.7	3.6	B
Total		2,001	1,968	98.4%	37.6	24.4	D

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	29	27	92.4%	107.2	119.8	F
	Through	20	20	97.5%	93.7	125.7	F
	Right Turn	110	110	99.5%	68.4	85.3	F
	Subtotal	159	156	98.0%	78.3	95.8	F
EB	Left Turn	80	77	96.0%	18.6	21.3	C
	Through	684	678	99.2%	13.8	25.0	B
	Right Turn	20	18	91.0%	4.7	8.0	A
	Subtotal	784	773	98.6%	14.0	24.1	B
WB	Left Turn	20	19	97.0%	6.8	3.4	A
	Through	711	696	97.9%	2.2	1.4	A
	Right Turn	23	21	89.1%	0.6	0.2	A
	Subtotal	754	736	97.6%	2.2	1.4	A
Total		1,697	1,665	98.1%	13.2	15.5	B

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	427	417	97.6%	147.8	87.4	F
	Through	335	334	99.6%	13.2	5.3	B
	Right Turn	25	26	103.2%	7.1	10.0	A
	Subtotal	787	776	98.6%	86.9	50.1	F
SB	Left Turn	10	9	92.0%	69.1	39.5	E
	Through	401	393	98.1%	86.4	34.3	F
	Right Turn	142	134	94.4%	48.0	25.2	D
	Subtotal	553	537	97.0%	76.3	30.9	E
EB	Left Turn	66	55	83.8%	72.2	42.3	E
	Through	158	156	98.4%	83.9	49.6	F
	Right Turn	479	478	99.8%	37.5	41.7	D
	Subtotal	703	689	98.0%	50.5	43.5	D
WB	Left Turn	23	20	88.3%	143.2	82.7	F
	Through	185	186	100.4%	123.7	47.2	F
	Right Turn	24	21	85.4%	120.7	65.5	F
	Subtotal	232	227	97.6%	125.0	49.3	F
Total		2,275	2,228	97.9%	75.9	30.1	E

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	304	300	98.6%	52.4	10.7	D
	Through	193	181	93.8%	44.1	8.1	D
	Right Turn	94	86	91.3%	33.8	6.7	C
	Subtotal	591	566	95.8%	46.9	8.2	D
SB	Left Turn	56	50	89.6%	129.5	173.4	F
	Through	147	137	93.4%	126.3	170.3	F
	Right Turn	30	27	90.0%	117.2	145.6	F
	Subtotal	233	215	92.1%	125.8	167.5	F
EB	Left Turn	65	58	89.2%	87.4	27.3	F
	Through	866	780	90.1%	78.6	21.8	E
	Right Turn	247	220	88.9%	86.7	50.4	F
	Subtotal	1,178	1,058	89.8%	80.2	26.2	F
WB	Left Turn	119	104	87.6%	286.9	147.1	F
	Through	940	859	91.4%	214.2	78.9	F
	Right Turn	70	71	101.1%	209.2	79.7	F
	Subtotal	1,129	1,034	91.6%	218.4	78.8	F
Total		3,131	2,873	91.7%	123.4	38.3	F

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	31	104.0%	52.9	17.0	D
	Through	20	20	101.5%	60.2	26.7	E
	Right Turn	143	136	94.8%	46.0	14.4	D
	Subtotal	193	187	96.9%	47.7	11.2	D
SB	Left Turn	20	18	92.0%	51.5	20.1	D
	Through	20	19	93.0%	42.7	35.3	D
	Right Turn						
	Subtotal	40	37	92.5%	48.1	17.6	D
EB	Left Turn	20	19	96.0%	219.4	43.5	F
	Through	1,015	908	89.4%	231.2	48.9	F
	Right Turn	20	17	84.0%	268.7	178.2	F
	Subtotal	1,055	944	89.5%	231.6	49.2	F
WB	Left Turn	143	127	89.0%	59.3	11.6	E
	Through	1,111	1,036	93.2%	16.2	3.9	B
	Right Turn	20	18	88.5%	8.9	6.0	A
	Subtotal	1,274	1,180	92.7%	19.9	4.2	B
Total		2,562	2,348	91.7%	106.3	14.2	F

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	33	18	55.8%	274.4	127.3	F
	Through	20	12	61.0%	253.7	150.7	F
	Right Turn	120	80	66.3%	230.4	126.9	F
	Subtotal	173	110	63.7%	239.8	127.0	F
EB	Left Turn	130	120	92.0%	73.2	38.3	F
	Through	904	822	91.0%	72.9	43.7	F
	Right Turn	20	21	104.0%	65.9	45.5	F
	Subtotal	1,054	963	91.3%	72.8	42.9	F
WB	Left Turn	20	18	89.5%	17.3	12.0	C
	Through	693	631	91.1%	1.5	0.3	A
	Right Turn	40	38	95.3%	0.8	0.3	A
	Subtotal	753	687	91.2%	1.9	0.7	A
Total		1,980	1,760	88.9%	50.9	19.3	F

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	434	380	87.6%	343.9	65.8	F
	Through	435	425	97.8%	84.7	67.4	F
	Right Turn	25	25	98.4%	70.5	60.9	E
	Subtotal	894	830	92.8%	210.5	76.7	F
SB	Left Turn	12	9	74.2%	127.7	138.9	F
	Through	378	335	88.6%	119.9	107.1	F
	Right Turn	123	110	89.6%	54.7	47.2	D
	Subtotal	513	454	88.5%	105.5	92.6	F
EB	Left Turn	129	112	86.4%	137.3	39.7	F
	Through	202	169	83.6%	143.0	37.1	F
	Right Turn	617	534	86.6%	107.4	32.4	F
	Subtotal	948	815	85.9%	119.5	34.9	F
WB	Left Turn	22	24	107.3%	88.3	36.6	F
	Through	196	198	101.1%	91.3	50.0	F
	Right Turn	27	28	102.6%	85.8	46.3	F
	Subtotal	245	250	101.8%	90.8	48.4	F
Total		2,600	2,348	90.3%	138.7	37.0	F

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	222	224	100.8%	49.8	10.2	D
	Through	120	112	92.9%	37.3	10.0	D
	Right Turn	90	91	101.1%	24.0	8.9	C
	Subtotal	432	426	98.7%	41.5	4.8	D
SB	Left Turn	30	29	96.0%	100.1	74.7	F
	Through	195	192	98.7%	102.0	77.7	F
	Right Turn	32	29	91.6%	109.3	84.1	F
	Subtotal	257	251	97.5%	102.7	77.5	F
EB	Left Turn	27	29	108.5%	77.1	20.7	E
	Through	743	725	97.6%	79.0	22.6	E
	Right Turn	237	227	95.7%	75.6	24.6	E
	Subtotal	1,007	982	97.5%	78.2	22.9	E
WB	Left Turn	122	115	94.2%	200.7	158.1	F
	Through	710	695	97.9%	69.1	35.3	E
	Right Turn	34	32	94.1%	41.1	20.3	D
	Subtotal	866	842	97.3%	85.0	51.0	F
Total		2,562	2,501	97.6%	77.5	32.1	E

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	38	108.9%	51.0	20.8	D
	Through						
	Right Turn	107	106	99.4%	42.2	26.6	D
	Subtotal	142	145	101.8%	44.9	21.8	D
SB	Left Turn	20	19	95.0%	63.5	39.5	E
	Through						
	Right Turn						
	Subtotal	20	19	95.0%	63.5	39.5	E
EB	Left Turn	20	23	113.0%	135.7	108.8	F
	Through	880	858	97.5%	94.7	95.7	F
	Right Turn	26	25	94.6%	97.2	102.0	F
	Subtotal	926	905	97.7%	96.1	96.4	F
WB	Left Turn	134	129	95.9%	45.3	9.5	D
	Through	810	798	98.5%	9.6	4.0	A
	Right Turn	20	20	98.5%	8.1	5.1	A
	Subtotal	964	946	98.1%	14.5	4.4	B
Total		2,052	2,014	98.2%	52.7	43.1	D

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	76	64	83.6%	173.2	87.2	F
	Through	20	14	67.5%	176.6	101.3	F
	Right Turn	125	114	90.8%	148.5	70.2	F
	Subtotal	221	191	86.2%	161.1	78.3	F
EB	Left Turn	86	87	100.7%	25.3	22.7	D
	Through	684	681	99.5%	21.6	24.1	C
	Right Turn	20	21	107.0%	25.2	37.5	D
	Subtotal	790	789	99.8%	22.1	24.1	C
WB	Left Turn	20	18	91.0%	12.2	8.1	B
	Through	711	683	96.1%	4.6	3.7	A
	Right Turn	38	38	100.3%	4.4	4.7	A
	Subtotal	769	740	96.2%	4.9	3.7	A
Total		1,780	1,719	96.5%	29.4	14.6	D

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	435	424	97.4%	157.8	100.1	F
	Through	339	339	100.0%	15.1	5.1	B
	Right Turn	25	23	93.2%	6.4	5.3	A
	Subtotal	799	786	98.3%	90.6	54.4	F
SB	Left Turn	10	8	81.0%	71.4	68.4	E
	Through	401	389	97.1%	81.5	35.3	F
	Right Turn	143	136	95.2%	51.0	32.9	D
	Subtotal	554	534	96.3%	73.0	34.1	E
EB	Left Turn	69	63	91.6%	102.8	34.3	F
	Through	170	165	97.3%	103.3	35.4	F
	Right Turn	495	486	98.2%	60.1	35.7	E
	Subtotal	734	715	97.4%	74.3	36.2	E
WB	Left Turn	23	21	89.6%	146.1	93.7	F
	Through	191	181	95.0%	139.7	74.1	F
	Right Turn	24	23	94.6%	118.4	72.3	F
	Subtotal	238	225	94.4%	138.4	76.0	F
Total		2,325	2,259	97.2%	85.7	36.5	F

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	314	281	89.6%	64.4	14.1	E
	Through	195	180	92.2%	46.3	6.6	D
	Right Turn	94	80	84.7%	34.5	8.7	C
	Subtotal	603	541	89.7%	54.1	9.5	D
SB	Left Turn	56	53	94.6%	90.9	86.2	F
	Through	150	142	94.9%	96.1	91.9	F
	Right Turn	34	33	98.2%	99.4	88.7	F
	Subtotal	240	229	95.3%	95.0	90.2	F
EB	Left Turn	68	58	85.0%	85.1	27.3	F
	Through	878	775	88.2%	84.4	19.8	F
	Right Turn	247	209	84.7%	82.3	21.4	F
	Subtotal	1,193	1,042	87.3%	84.1	20.5	F
WB	Left Turn	119	97	81.4%	314.8	65.6	F
	Through	957	846	88.4%	272.1	32.0	F
	Right Turn	70	63	90.0%	267.2	45.9	F
	Subtotal	1,146	1,006	87.8%	275.7	34.2	F
Total		3,182	2,817	88.5%	150.2	25.6	F

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	37	92.5%	78.9	89.3	E
	Through	20	17	85.5%	47.9	43.8	D
	Right Turn	157	148	94.5%	85.9	116.6	F
	Subtotal	217	203	93.3%	86.0	114.0	F
SB	Left Turn	20	20	97.5%	57.0	18.2	E
	Through	20	20	99.0%	65.3	26.0	E
	Right Turn						
	Subtotal	40	39	98.3%	60.7	19.4	E
EB	Left Turn	20	17	82.5%	229.8	49.0	F
	Through	1,016	874	86.0%	237.0	39.0	F
	Right Turn	35	28	80.6%	232.1	52.4	F
	Subtotal	1,071	918	85.7%	236.8	38.6	F
WB	Left Turn	174	155	89.3%	49.1	9.7	D
	Through	1,111	987	88.9%	13.8	3.9	B
	Right Turn	20	16	82.0%	8.4	4.3	A
	Subtotal	1,305	1,159	88.8%	18.2	4.6	B
Total		2,633	2,319	88.1%	110.3	15.8	F

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	68	23	33.4%	516.2	154.6	F
	Through	20	6	31.0%	525.9	302.6	F
	Right Turn	130	36	27.4%	504.2	118.1	F
	Subtotal	218	65	29.6%	510.0	138.4	F
EB	Left Turn	145	126	86.8%	73.9	21.9	F
	Through	904	778	86.0%	74.3	24.4	F
	Right Turn	20	16	77.5%	98.1	85.7	F
	Subtotal	1,069	919	86.0%	74.3	23.9	F
WB	Left Turn	20	15	76.5%	16.7	19.3	C
	Through	694	608	87.7%	3.5	4.7	A
	Right Turn	80	72	89.5%	6.0	15.4	A
	Subtotal	794	695	87.6%	4.0	6.1	A
Total		2,081	1,679	80.7%	52.9	14.2	F

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	456	374	82.0%	389.4	51.6	F
	Through	445	408	91.7%	128.6	38.7	F
	Right Turn	25	26	102.8%	103.4	51.8	F
	Subtotal	926	808	87.2%	251.7	50.5	F
SB	Left Turn	12	8	69.2%	119.9	88.8	F
	Through	378	324	85.7%	98.9	42.3	F
	Right Turn	126	108	86.0%	41.3	20.0	D
	Subtotal	516	441	85.4%	83.5	34.5	F
EB	Left Turn	131	109	83.1%	171.6	66.3	F
	Through	213	171	80.3%	168.5	58.9	F
	Right Turn	628	495	78.9%	130.8	46.4	F
	Subtotal	972	775	79.7%	145.2	51.3	F
WB	Left Turn	22	21	94.5%	118.0	65.3	F
	Through	212	218	102.7%	100.2	42.9	F
	Right Turn	27	29	107.4%	85.2	38.3	F
	Subtotal	261	268	102.5%	99.2	42.1	F
Total		2,675	2,291	85.7%	159.5	23.1	F

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	207	199	96.3%	89.3	37.9	F
	Through	159	157	99.0%	81.1	32.1	F
	Right Turn	104	97	93.4%	68.2	40.7	E
	Subtotal	470	454	96.6%	82.0	35.2	F
SB	Left Turn	40	34	84.5%	211.1	135.3	F
	Through	233	205	87.8%	248.7	158.6	F
	Right Turn	40	36	89.0%	230.9	152.5	F
	Subtotal	313	274	87.5%	243.8	154.1	F
EB	Left Turn	30	28	92.3%	75.7	15.4	E
	Through	700	691	98.7%	58.8	24.1	E
	Right Turn	230	217	94.4%	59.5	27.8	E
	Subtotal	960	936	97.5%	59.4	24.3	E
WB	Left Turn	133	127	95.4%	184.2	158.7	F
	Through	691	682	98.7%	56.7	36.0	E
	Right Turn	40	39	97.0%	40.8	28.2	D
	Subtotal	864	848	98.1%	73.2	50.6	E
Total		2,607	2,511	96.3%	83.2	37.7	F

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	30	29	95.3%	54.7	16.9	D
	Through						
	Right Turn	90	85	94.0%	28.7	20.3	C
	Subtotal	120	113	94.3%	35.9	17.1	D
SB	Left Turn	30	27	89.3%	73.8	17.6	E
	Through						
	Right Turn						
	Subtotal	30	27	89.3%	73.8	17.6	E
EB	Left Turn	30	29	97.3%	84.4	21.5	F
	Through	840	825	98.2%	32.2	26.6	C
	Right Turn	30	30	99.3%	37.7	45.1	D
	Subtotal	900	884	98.2%	33.8	26.5	C
WB	Left Turn	120	111	92.1%	63.0	14.3	E
	Through	788	776	98.5%	7.2	4.3	A
	Right Turn	30	30	99.0%	6.0	4.7	A
	Subtotal	938	917	97.7%	13.3	5.5	B
Total		1,988	1,941	97.6%	24.7	12.3	C

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	40	33	83.5%	170.3	93.4	F
	Through	30	26	85.0%	235.3	183.3	F
	Right Turn	120	105	87.8%	209.8	202.2	F
	Subtotal	190	164	86.5%	210.6	185.6	F
EB	Left Turn	90	85	94.2%	56.0	35.6	F
	Through	691	649	93.8%	75.1	82.7	F
	Right Turn	30	28	93.0%	85.6	99.3	F
	Subtotal	811	761	93.9%	73.4	77.5	F
WB	Left Turn	30	24	79.7%	12.0	13.7	B
	Through	717	644	89.9%	2.0	0.8	A
	Right Turn	40	36	90.5%	1.9	1.6	A
	Subtotal	787	704	89.5%	2.4	1.4	A
Total		1,788	1,630	91.2%	44.7	26.3	E

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	427	399	93.3%	222.4	90.6	F
	Through	347	345	99.4%	30.1	36.4	C
	Right Turn	40	37	92.5%	18.6	35.1	B
	Subtotal	814	781	95.9%	126.6	55.8	F
SB	Left Turn	20	19	94.5%	123.7	73.5	F
	Through	416	379	91.2%	103.3	43.4	F
	Right Turn	160	137	85.3%	57.7	30.3	E
	Subtotal	596	535	89.7%	93.7	41.8	F
EB	Left Turn	83	79	95.3%	219.7	209.8	F
	Through	173	156	90.0%	207.4	201.4	F
	Right Turn	484	447	92.4%	152.0	161.4	F
	Subtotal	740	682	92.2%	174.8	180.7	F
WB	Left Turn	33	28	83.9%	199.3	77.6	F
	Through	200	170	85.1%	195.4	72.9	F
	Right Turn	40	34	86.0%	172.5	81.0	F
	Subtotal	273	232	85.1%	192.4	72.8	F
Total		2,423	2,229	92.0%	124.8	36.1	F

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	312	291	93.3%	76.0	36.7	E
	Through	214	196	91.4%	89.9	50.5	F
	Right Turn	108	99	91.7%	70.4	43.1	E
	Subtotal	634	586	92.4%	79.7	41.5	E
SB	Left Turn	60	52	86.7%	149.2	93.8	F
	Through	190	176	92.7%	155.3	95.9	F
	Right Turn	40	37	93.5%	142.0	86.7	F
	Subtotal	290	266	91.6%	153.2	93.7	F
EB	Left Turn	70	65	93.3%	94.8	20.4	F
	Through	851	818	96.2%	76.0	14.3	E
	Right Turn	247	228	92.3%	72.0	18.0	E
	Subtotal	1,168	1,112	95.2%	76.3	14.9	E
WB	Left Turn	122	112	91.5%	218.6	114.8	F
	Through	850	834	98.1%	92.4	57.2	F
	Right Turn	70	67	95.9%	75.6	43.7	E
	Subtotal	1,042	1,012	97.2%	104.5	60.0	F
Total		3,134	2,975	94.9%	92.5	28.7	F

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	40	38	94.5%	102.8	38.2	F
	Through	30	30	100.3%	107.5	47.2	F
	Right Turn	140	138	98.3%	94.4	53.8	F
	Subtotal	210	206	97.9%	96.9	47.0	F
SB	Left Turn	30	30	99.7%	127.7	96.0	F
	Through	30	31	101.7%	141.5	103.7	F
	Right Turn						
	Subtotal	60	60	100.7%	130.9	93.2	F
EB	Left Turn	30	26	85.0%	174.2	93.6	F
	Through	998	950	95.2%	131.2	79.2	F
	Right Turn	30	27	90.3%	131.8	91.2	F
	Subtotal	1,058	1,003	94.8%	132.1	79.3	F
WB	Left Turn	130	128	98.7%	99.5	26.3	F
	Through	1,042	1,002	96.2%	12.5	5.6	B
	Right Turn	30	28	94.3%	10.6	5.2	B
	Subtotal	1,202	1,159	96.4%	20.6	6.0	C
Total		2,530	2,427	95.9%	74.6	31.3	E

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	50	19	38.6%	437.2	198.5	F
	Through	30	12	39.7%	428.0	205.8	F
	Right Turn	130	50	38.5%	410.2	140.2	F
	Subtotal	210	81	38.7%	418.3	150.0	F
EB	Left Turn	140	129	92.2%	55.1	22.2	F
	Through	907	841	92.7%	63.7	38.2	F
	Right Turn	30	26	86.0%	74.1	59.3	F
	Subtotal	1,077	996	92.5%	62.5	35.4	F
WB	Left Turn	30	23	78.0%	26.3	22.5	D
	Through	673	561	83.4%	2.4	2.5	A
	Right Turn	60	49	82.0%	2.7	5.0	A
	Subtotal	763	634	83.1%	3.2	3.3	A
Total		2,050	1,711	83.5%	49.8	14.7	E

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	412	367	89.1%	257.5	93.8	F
	Through	452	446	98.7%	42.5	31.2	D
	Right Turn	40	42	104.8%	22.2	24.9	C
	Subtotal	904	855	94.6%	129.6	43.7	F
SB	Left Turn	20	17	84.0%	120.7	74.8	F
	Through	399	372	93.3%	99.9	57.4	F
	Right Turn	140	126	89.9%	44.0	35.9	D
	Subtotal	559	515	92.1%	87.6	53.9	F
EB	Left Turn	142	117	82.2%	154.9	96.7	F
	Through	215	184	85.8%	147.4	70.1	F
	Right Turn	623	547	87.8%	114.6	63.5	F
	Subtotal	980	848	86.5%	127.8	69.9	F
WB	Left Turn	32	21	66.3%	213.6	54.5	F
	Through	211	139	66.1%	212.0	28.4	F
	Right Turn	40	28	68.8%	208.6	33.6	F
	Subtotal	283	188	66.5%	212.9	25.3	F
Total		2,726	2,406	88.3%	123.8	36.9	F

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	211	202	95.9%	69.9	21.3	E
	Through	162	158	97.7%	79.5	21.9	E
	Right Turn	104	96	92.0%	67.3	29.7	E
	Subtotal	477	456	95.7%	73.2	21.2	E
SB	Left Turn	40	33	83.3%	242.9	128.0	F
	Through	234	210	89.9%	256.0	144.1	F
	Right Turn	42	37	89.0%	249.0	146.3	F
	Subtotal	316	281	88.9%	254.4	142.6	F
EB	Left Turn	34	33	96.2%	88.3	22.6	F
	Through	714	710	99.5%	74.2	17.1	E
	Right Turn	230	223	97.0%	69.4	16.9	E
	Subtotal	978	966	98.8%	73.8	16.9	E
WB	Left Turn	133	131	98.7%	216.0	155.8	F
	Through	696	684	98.3%	64.7	41.4	E
	Right Turn	40	39	98.0%	41.6	18.6	D
	Subtotal	869	855	98.4%	86.9	54.7	F
Total		2,640	2,558	96.9%	94.7	24.4	F

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	45	40	89.6%	81.2	66.2	F
	Through						
	Right Turn	108	112	103.3%	50.1	61.4	D
	Subtotal	153	152	99.3%	58.7	62.3	E
SB	Left Turn	30	26	88.0%	69.3	29.7	E
	Through						
	Right Turn						
	Subtotal	30	26	88.0%	69.3	29.7	E
EB	Left Turn	30	31	104.7%	88.3	14.9	F
	Through	840	828	98.6%	39.9	27.4	D
	Right Turn	36	35	98.3%	33.9	34.3	C
	Subtotal	906	895	98.8%	41.9	26.5	D
WB	Left Turn	131	121	92.6%	55.4	13.5	E
	Through	788	776	98.5%	10.6	7.7	B
	Right Turn	30	29	97.3%	8.0	5.4	A
	Subtotal	949	926	97.6%	16.5	7.5	B
Total		2,038	1,999	98.1%	31.8	15.3	C

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	87	52	60.0%	293.9	157.2	F
	Through	30	18	59.3%	292.4	185.4	F
	Right Turn	135	83	61.3%	318.5	177.6	F
	Subtotal	252	153	60.6%	308.9	161.5	F
EB	Left Turn	96	92	96.1%	52.4	63.4	F
	Through	691	674	97.5%	40.7	50.1	E
	Right Turn	30	29	96.3%	44.1	55.0	E
	Subtotal	817	795	97.3%	42.0	51.5	E
WB	Left Turn	30	31	103.0%	10.7	8.6	B
	Through	717	652	91.0%	2.0	0.7	A
	Right Turn	55	55	100.5%	1.3	0.5	A
	Subtotal	802	739	92.1%	2.3	1.2	A
Total		1,871	1,686	90.1%	39.9	23.6	E

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	435	415	95.5%	270.1	103.7	F
	Through	351	340	96.7%	64.8	57.6	E
	Right Turn	40	41	102.5%	48.6	51.6	D
	Subtotal	826	796	96.3%	172.6	77.8	F
SB	Left Turn	20	18	89.5%	65.0	20.8	E
	Through	416	389	93.6%	70.9	19.3	E
	Right Turn	161	145	89.8%	32.1	14.0	C
	Subtotal	597	552	92.4%	60.3	16.0	E
EB	Left Turn	86	75	87.0%	130.1	78.6	F
	Through	185	181	97.6%	127.0	85.1	F
	Right Turn	500	468	93.7%	90.0	78.3	F
	Subtotal	771	724	93.9%	104.1	81.1	F
WB	Left Turn	33	27	80.6%	213.9	79.6	F
	Through	206	180	87.3%	213.6	32.4	F
	Right Turn	40	35	87.0%	209.1	46.1	F
	Subtotal	279	241	86.5%	212.0	36.5	F
Total		2,473	2,313	93.5%	124.5	44.7	F

SimTraffic Post-Processor **Petaluma Station**
Average Results from 10 Runs **Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **Lakeville St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	322	300	93.3%	79.4	44.6	E
	Through	216	189	87.6%	84.1	44.4	F
	Right Turn	108	91	84.2%	70.7	39.8	E
	Subtotal	646	580	89.8%	79.7	42.8	E
SB	Left Turn	60	55	91.0%	187.5	108.9	F
	Through	193	171	88.4%	217.6	138.3	F
	Right Turn	44	44	99.3%	207.1	127.2	F
	Subtotal	297	269	90.6%	209.6	129.5	F
EB	Left Turn	73	68	93.0%	41.1	17.4	D
	Through	862	797	92.4%	21.7	2.2	C
	Right Turn	247	223	90.4%	16.8	8.0	B
	Subtotal	1,182	1,088	92.0%	22.0	3.5	C
WB	Left Turn	122	105	86.0%	253.0	141.2	F
	Through	867	835	96.3%	116.9	77.4	F
	Right Turn	70	70	99.9%	94.6	62.4	F
	Subtotal	1,059	1,010	95.3%	128.3	82.7	F
Total		3,184	2,947	92.6%	85.2	39.2	F

Intersection 8 **Copeland St/E Washington St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	38	76.4%	186.6	96.6	F
	Through	30	24	81.0%	168.8	75.1	F
	Right Turn	154	125	81.1%	193.3	166.6	F
	Subtotal	234	187	80.1%	174.7	98.6	F
SB	Left Turn	30	24	81.0%	217.6	270.4	F
	Through	30	28	91.7%	179.3	264.4	F
	Right Turn						
	Subtotal	60	52	86.3%	92.5	80.6	F
EB	Left Turn	30	23	77.7%	193.2	77.6	F
	Through	998	941	94.3%	143.6	62.4	F
	Right Turn	45	45	100.4%	141.7	73.4	F
	Subtotal	1,073	1,010	94.1%	144.5	63.0	F
WB	Left Turn	161	148	92.0%	93.7	21.5	F
	Through	1,042	1,002	96.2%	14.5	6.8	B
	Right Turn	30	27	90.3%	11.1	8.3	B
	Subtotal	1,233	1,177	95.5%	24.3	7.9	C
Total		2,600	2,426	93.3%	85.3	27.4	F

Intersection 10 **Copeland St/E D St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	85	25	29.4%	367.7	104.3	F
	Through	30	10	34.3%	430.8	121.5	F
	Right Turn	140	40	28.9%	399.0	109.7	F
	Subtotal	255	76	29.7%	386.1	93.7	F
EB	Left Turn	155	137	88.5%	74.6	55.2	F
	Through	907	764	84.3%	73.2	47.2	F
	Right Turn	30	26	87.3%	82.9	101.2	F
	Subtotal	1,092	928	84.9%	73.6	49.3	F
WB	Left Turn	30	24	79.3%	21.9	15.3	C
	Through	673	533	79.2%	2.6	0.9	A
	Right Turn	100	80	79.5%	2.0	1.5	A
	Subtotal	803	636	79.2%	3.4	1.1	A
Total		2,150	1,639	76.2%	55.5	19.8	F

Intersection 2 **Lakeville St/E D St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	434	363	83.7%	375.8	50.9	F
	Through	462	443	95.8%	109.4	75.7	F
	Right Turn	40	41	102.5%	79.2	55.7	E
	Subtotal	936	847	90.5%	225.6	64.8	F
SB	Left Turn	20	20	98.5%	143.2	82.2	F
	Through	399	355	89.0%	119.9	55.0	F
	Right Turn	143	126	87.8%	53.2	30.2	D
	Subtotal	562	501	89.1%	103.6	48.5	F
EB	Left Turn	144	115	79.8%	169.4	116.1	F
	Through	226	173	76.7%	157.1	80.5	F
	Right Turn	634	491	77.5%	126.5	76.3	F
	Subtotal	1,004	780	77.7%	140.4	83.2	F
WB	Left Turn	32	19	59.4%	207.8	78.3	F
	Through	226	144	63.8%	226.6	36.0	F
	Right Turn	40	25	63.3%	207.7	80.8	F
	Subtotal	298	189	63.3%	224.3	41.6	F
Total		2,800	2,316	82.7%	163.2	41.4	F

Appendix B:

Approved Projects Trip Generation

Table B1
Pipeline Projects Trip Generation

Pipeline Projects	Land Use	Land Use Code	Unit[1]	Amount	Trips					
					AM Peak Hour			PM Peak Hour		
					IN	OUT	TOTAL	IN	OUT	TOTAL
COMMERCIAL PROJECTS										
Adobe Road Winery	Winery	970	ksf	16	30	13	43	58	58	116
Valero Food Mart[2]	Gas Station	945	disp	-	-	-	-	-	-	-
Floathouse[3]	-	-	-	-	-	-	-	-	-	-
MIXED USE PROJECTS										
Riverfront 2010	Office	710	ksf	60	82	11	93	15	74	89
	Townhouse	230	units	31	2	12	14	11	5	16
	Hotel	310	rooms	120	41	26	67	38	33	71
	Specialty Retail		ksf	30	18	12	30	36	45	81
	Apartments	220	units	100	10	41	51	40	22	62
	SF Housing	210	units	135	25	76	101	86	50	136
	Live/Work		units	6	3	2	5	2	4	6
	City Park		acres	6	20	20	40	14	14	28
	TOTAL				**187**	**186**	**373**	**213**	**217**	**430**
Haystack Pacifica	Shopping Center	820	ksf	15	31	17	48	78	87	164
	Apartment	220	units	178	22	69	91	72	43	116
	TOTAL				**53**	**86**	**139**	**150**	**130**	**280**
North River Apartments	Apartment	220/223	units	184	17	38	55	42	30	72
	Retail	826/820	ksf	3	2	1	3	4	4	8
	Office	710	ksf	2	2	1	3	0	3	3
	TOTAL				**21**	**40**	**61**	**46**	**37**	**83**
Scannell Mixed Use Development[4]	Mixed				210	135	344	144	239	383
RESIDENTIAL PROJECTS										
109 Ellis Street	Apartment	220	units	13	2	8	10	16	9	25
Baywood Apartments	Apartment	220	units	299	36	114	150	114	68	182
Sepaher Residential Building	Apartment	220	units	4	1	4	6	12	7	20
East Washington Commons	Apartment	220	units	24	4	12	15	19	12	31
Sid Commons	Apartment	220	units	278	28	112	140	111	60	171
Riverbend	Single-family, detached	210	units	30	6	16	22	19	11	30
						External Trips:	**1,904**			**2,602**

Notes:
1. ksf = thousand square feet.
2. Vehicle trips related to the Valero Food Mart are anticipated to decrease with removal of service bays.
3. Floathouse project is not anticipated to generate additional vehicle trips.
4. The Scannell Mixed Use Development at 500 Hopper includes the following ITE land use types:
   Commercial - 710 General Office Building (197.5 ksf)
   Single Family Residential - 210 Single-FAmily Detached Housing (95 units)
   Multifamily Residential - 220 Multifamily Housing Low Rise (180 units)

Source: Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition); Fehr & Peers, 2020

TRIP GENERATION RATES, ITE 10TH EDITION			AM Peak Hour			PM Peak Hour		
			IN	OUT	L	IN	OUT	L
Single-family	210	units	25%	75%	0.74	63%	37%	0.99
Apartment	220	units	24%	76%	0.46	63%	38%	0.56
Condo/Townhouse	220	units	24%	76%	0.46	63%	38%	0.56
Hotel	310	rooms	60%	40%	0.46	50%	50%	0.59
Office	710	ksf	80%	20%	1.25	20%	80%	1.25
Restaurant	932	ksf	55%	45%	10.00	63%	37%	9.83
Shopping Center	820	ksf	64%	36%	0.93	47%	53%	3.80
Gas Station	945	disp	51%	49%	12.50	51%	49%	14.00
Mini-Warehouse	151	ksf	55%	45%	0.14	50%	50%	0.26
Auto Sales	841	ksf	74%	26%	2.09	46%	54%	3.73
Superstore	862	ksf	57%	43%	1.57	49%	51%	2.33
Casino		ksf	70%	30%	2.95	53%	47%	4.95
Senior Housing	252	units	36%	64%	0.20	57%	43%	0.26
Winery	970	ksf	70%	30%	2.70	50%	50%	7.31

Appendix C:

Signal Warrant Worksheets

Intersection #10: Copeland Street & East D Street was analyzed to determine if a traffic signal was warranted under any of the scenarios explored.

It was determined that the volumes at this intersection *did* warrant a traffic signal under Warrant 3A in both the AM or PM peak periods of the Existing scenario. Since the Existing volumes warrant a signal, it is reasonable to assume that a signal would be warranted under all future conditions as well.

FEHR PEERS

Major Street	East D Street
Minor Street	Copeland Street

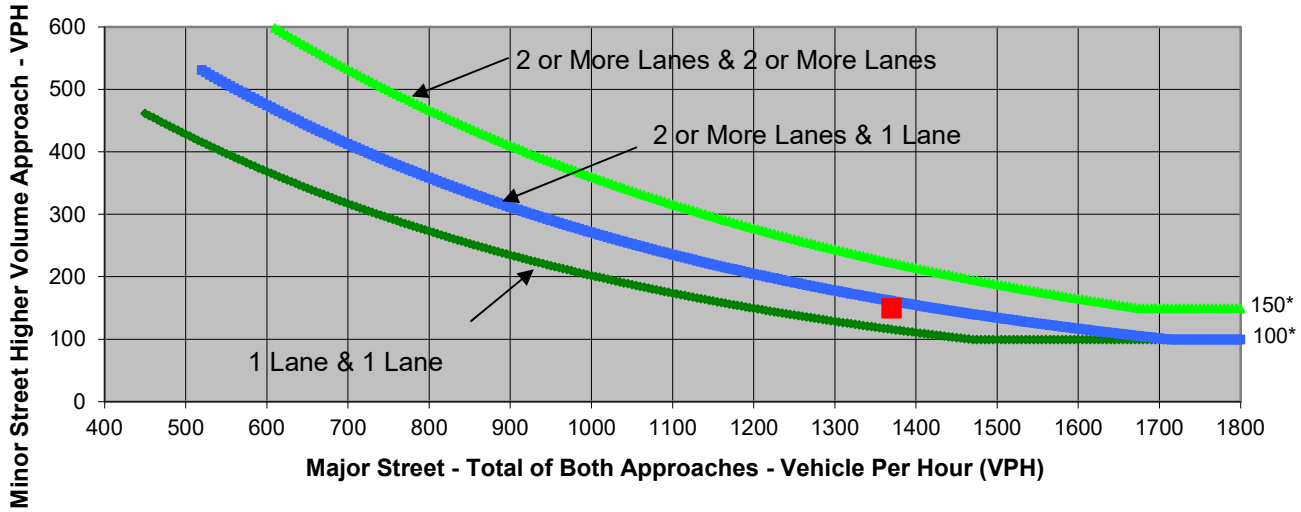
Project	Petaluma Station
Scenario	Existing
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	20	80	20
Through	0	20	610	620
Right	0	110	20	20
Total	0	150	710	660

Major Street Direction

	North/South
x	East/West



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	East D Street	Copeland Street	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,370**	**150**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	East D Street
Minor Street	Copeland Street

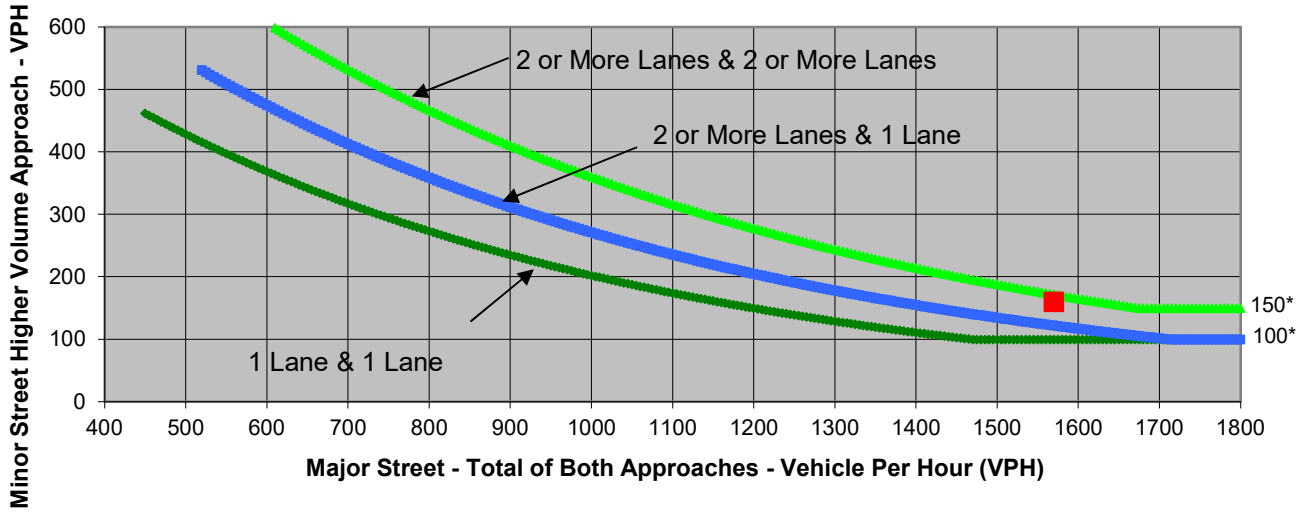
Project	Petaluma Station
Scenario	Existing
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	20	130	20
Through	0	20	800	570
Right	0	120	20	30
Total	0	160	950	620

Major Street Direction

	North/South
x	East/West



* 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.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	East D Street	Copeland Street	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,570**	**160**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.