SECTION 8.4

Transportation Appendix

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1. Existing Conditions

1.1 Existing Roadway Network

The roadway network in Bremerton features a combination of grid and non-grid systems including state highways that provide access to the region. State Route (SR) 3 is the primary limited access highway serving the Kitsap Peninsula, extending north from Bremerton to the Hood Canal Floating Bridge and south to U.S. Route 101 in Shelton. Within Bremerton, SR 3 provides connections to major destinations including Navy Yard City, Gorst, and the Bremerton National Airport. State routes extend east of SR 3 through the city's urban core and carry most traffic within the city. SR 304 and SR 310 are east--west highways which provide service to downtown, Naval Base Kitsap-Bremerton (NBK-BR), and the Bremerton Ferry Terminal. SR 303 provides a connection from downtown Bremerton across the Port Washington Narrows to East Bremerton and up to Silverdale. East of Gorst, SR 16 extends to noncontiguous areas within Bremerton city limits and continues to Tacoma. SR 166 extends east from SR 16 in Gorst to Port Orchard.

The city uses functional classification to organize its streets into categories based on their intended use and traffic volumes. Functional classes within Bremerton include limited access highways, principal arterials, minor arterials, collectors, and local access roadways. Classifications are defined in alignment with definitions used by the Federal Highway Administration (FHWA) and the Washington State Department of Transportation (WSDOT). Limited access highways and principal arterial roadways—including state routes, 11th Street, and Washington Avenue— carry high volumes of traffic within the city and are important local and regional connections. Minor arterials are designed for moderate traffic volumes and speeds, but they provide access to local destinations throughout the city and nearby areas of Kitsap County. Collector roadways distribute vehicular traffic between local streets and arterials at lower speeds and are intended to be a transition between local streets and arterials. Figure 1 shows roadways within the city by classification.

1.2 Bremerton National Airport

Bremerton National Airport and the adjacent Olympic View Business and Industrial Park are located on State Highway 3 and are approximately nine miles southwest of downtown Bremerton. The surrounding land area is designated for industrial related land uses that are compatible with aviation activity. This area has been designated as "Manufacturing /Industrial Center" (MIC) by PSRC.

The Port of Bremerton has owned and operated the Bremerton National Airport for nearly 50 years. As the airport owner, the Port is responsible for conforming to all Federal Aviation Administration (FAA) regulations, design standards and grant assurances. The Port of Bremerton has The Bremerton National Airport Master Plan, developed in cooperation with the FAA and adopted in May of 2015.

Bremerton National Airport is included in the federal airport system, the National Plan of Integrated Airport Systems (NPIAS). Participate in the NPIAS is limited to public use airports that meet specific FAA criteria. The FAA recognizes NPIAS airports as being vital for serving the needs of the public for air transportation. There are more than 3,300 NPIAS airports, and more than 75% are general aviation airports, similar to the Bremerton National Airport. Bremerton National Airport is the only NPIAS airport in Kitsap County, with other nearby NPIAS airports located in Shelton, Vashon Island and Tacoma.

Bremerton National Airport is considered a major infrastructure component of the South Kitsap Industrial Area (SKIA) subarea that encompasses about 3,700 acres. Most of this area was annexed by the city of Bremerton in 2009.

Services provided by Bremerton National Airport include aircraft operations (take offs and landings), aircraft parking aprons, aircraft fuel storage and dispensing, storage hangars for commercial and private aircrafts. The airport provides a full-service fixed base operator (FBO), Aviation Flight Center, helicopter flight training and has a general aviation terminal.

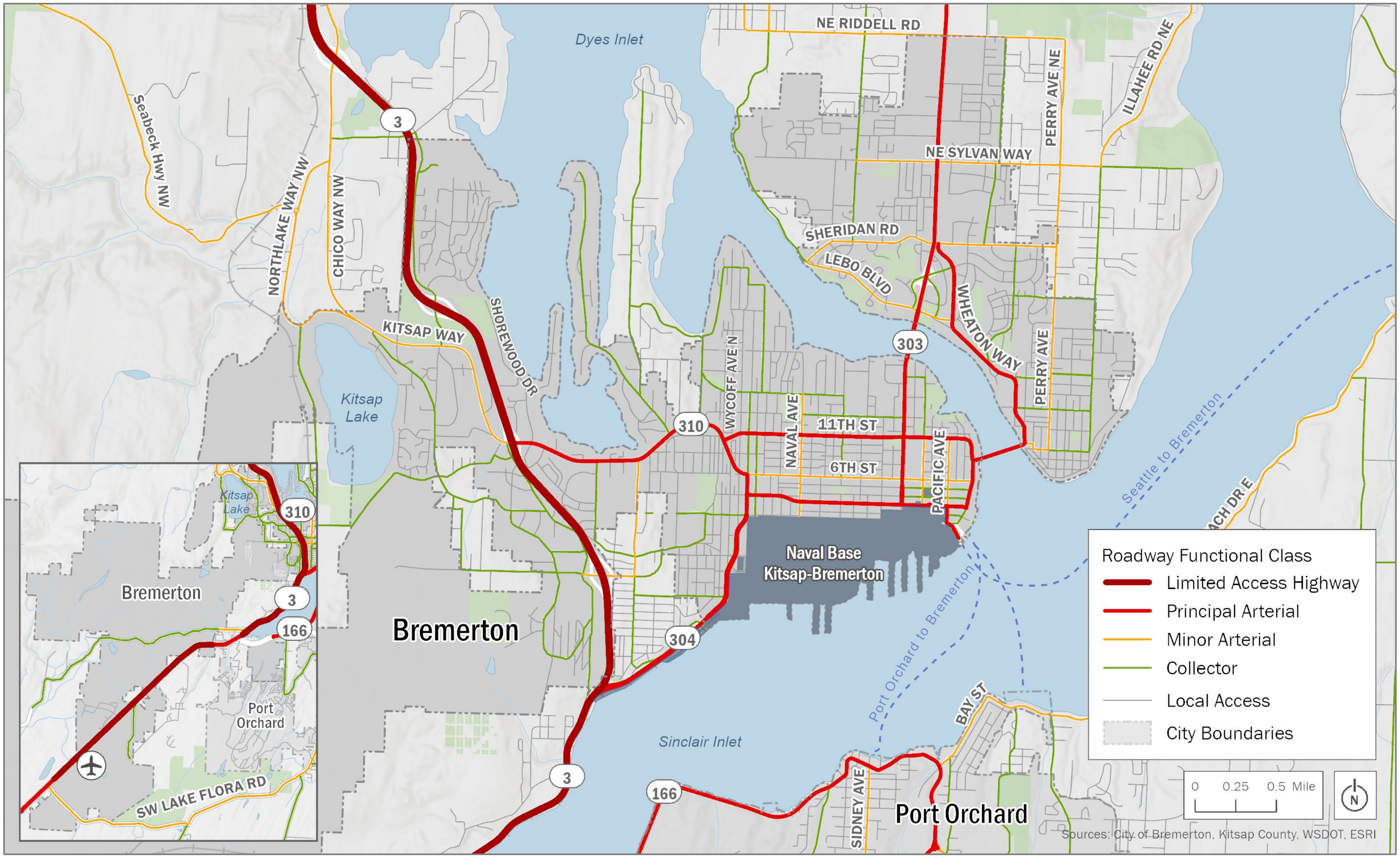


Figure 1. Roadway Functional Classifications

1.3 Active Transportation

1.3.1 Existing Pedestrian Network

Sidewalks are present along many of the collector and arterial roadways in Bremerton, with higher concentrations of existing pedestrian infrastructure in the downtown area. Designated pedestrian infrastructure promotes safe travel options for those who walk or take transit to reach local destinations, encouraging healthy lifestyles and reducing vehicular traffic. Sidewalks, shared-use paths, and crosswalks enhance connectivity within the city, making it easier for residents and visitors alike who are walking or using assistive mobility devices. The 2016 Transportation Element designated Pedestrian and Bicycle Priority Areas along key routes for active transportation users to concentrate facility development along these corridors.

Figure 2 shows the existing pedestrian facilities along collector and arterial roadways in the city. Within city limits, sidewalks are available on both sides of 44% of arterial and collector roadways. The conditions and widths of existing sidewalks vary throughout the city. As of 2018, most existing sidewalks (62%) are in fair or better condition, and 38% of existing sidewalks in the city are in marginal or poor condition. Since sidewalk conditions were assessed in 2018, the City began a sidewalk trip hazard removal program and a sidewalk reconstruction and infill program to address deficiencies in sidewalk condition and remove obstructions to pedestrian mobility. These ongoing programs allow the city to remove approximately 800 trip hazards from city sidewalks annually, and construct or reconstruct approximately 2,000 linear feet of sidewalk annually.

Most functionally classified streets downtown—Warren Avenue, Washington Avenue, and 6th Street—have sidewalks that are generally in better condition than those on adjacent local roads. Most existing sidewalks have a width of 5 feet or less. While sidewalks are present on at least one side of most downtown streets, their conditions vary across different streets. Figure 3 highlights the conditions of existing sidewalks in downtown Bremerton. A safety analysis for pedestrians and bicyclists, including review of crashes that involved a person walking or using an assistive mobility device, is included in Section 1.7.

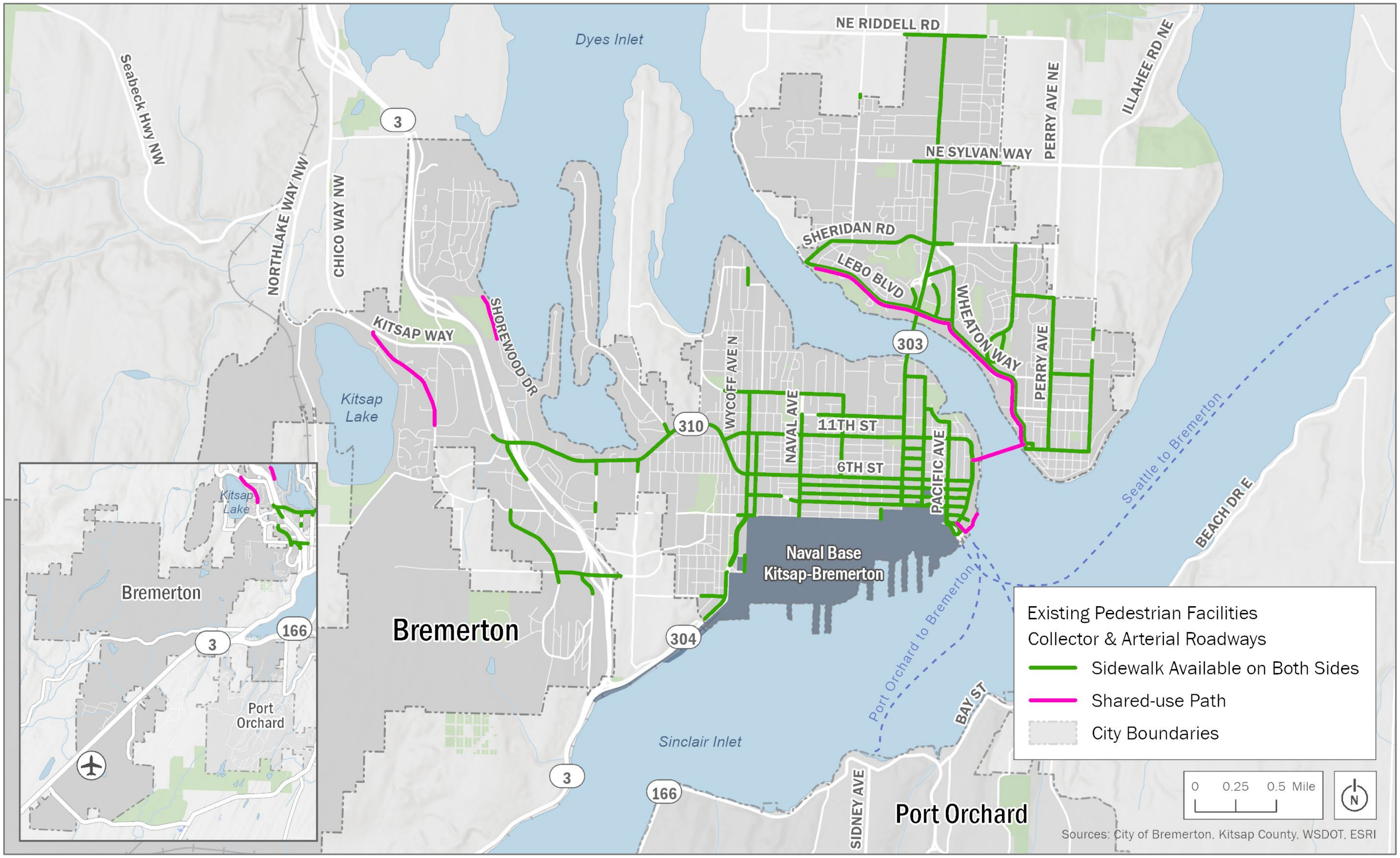


Figure 2. Existing Pedestrian Facilities

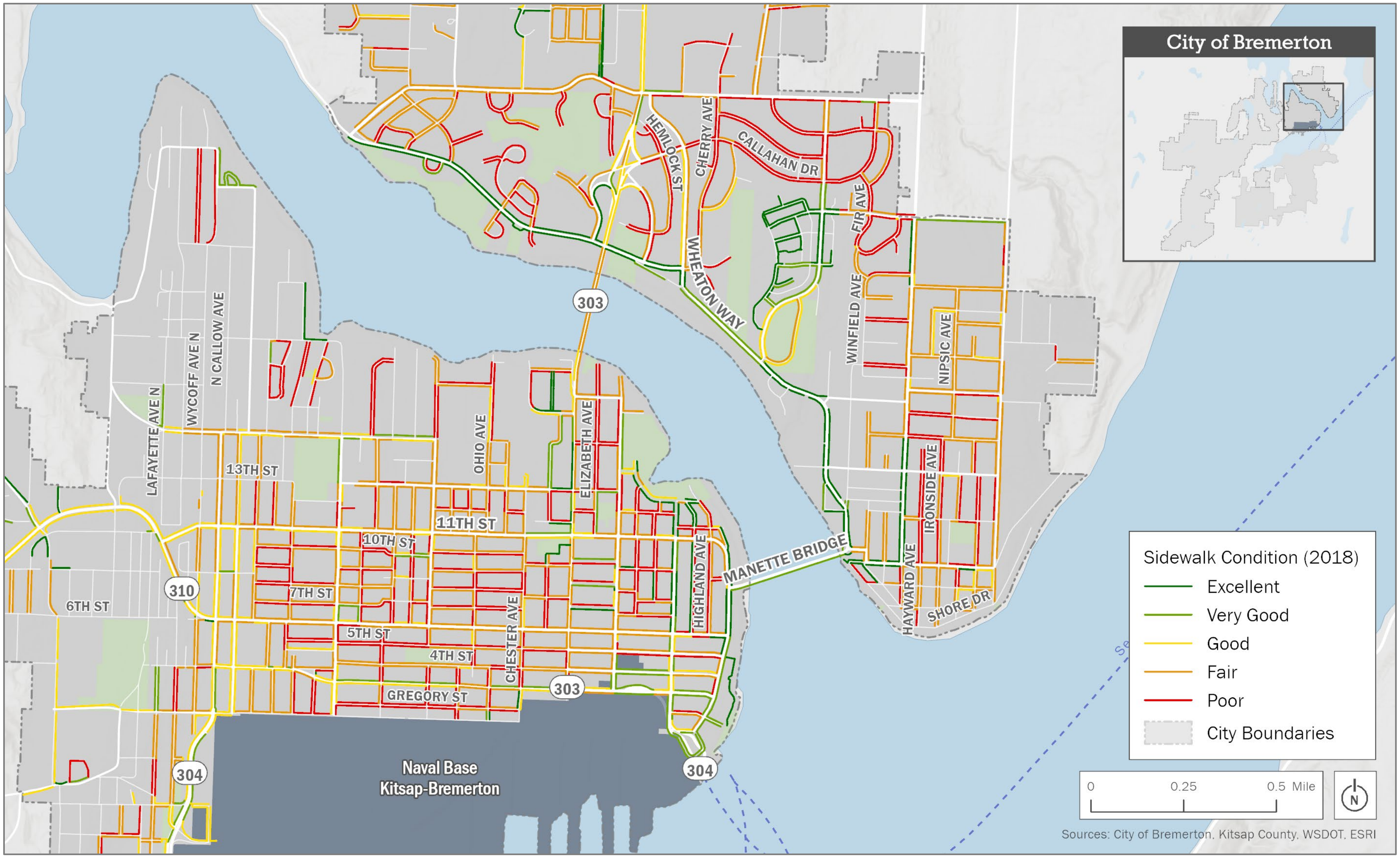


Figure 3. 2018 Sidewalk Conditions

1.3.2 Existing Bike Network

The existing bicycle network within the city includes bicycle lanes, neighborhood greenways, shared -use paths, and other shared facilities. Table 1 summarizes all bicycle facilities included in the data inventory. While the data inventory included paved shoulders as an existing facility for bicycle users, these may not meet current best practices for facility design and user comfort. Existing bicycle facilities are shown in Figure 4.

Table 1. Bicycle Facilities

Bicycle Facility	Description	Miles of Facility
Bike Lane	Dedicated facility for bicyclists adjacent to traffic with striping and lane markings	6.5
Buffered Bike Lane	Dedicated facility for bicyclists adjacent to traffic with a buffer of 2 feet or greater and lane markings	1.4
Shared-Use Path	Paved facility typically separated from motor vehicle traffic, designed to accommodate various nonmotorized users	3.4
Neighborhood Greenway	Low-stress streets with speeds 25 mph or lower that are optimized for bicycle traffic, featuring traffic calming measures and signage to prioritize bicycles and enhance safety	2.1
Paved Shoulder	Shoulders at least 4 feet wide designated for bicycle use; paved shoulder may not meet current best practice for facility design since it is not a dedicated facility	0.8
Shared-Lane Markings	Pavement markings or sharrows that indicate shared use by bicyclists and vehicles in a lane	0.8
Total		**15**

Bremerton has a range of bicycle facilities on city streets, but the existing bicycle network is incomplete with facilities that are disconnected. Near the Bremerton Ferry Terminal, a shared-use path along the waterfront connects to a bicycle lane and neighborhood greenway facility on Washington Avenue and 11th Street. Designated bike lanes extend along Kitsap Way and SR 304 west of downtown and along some connecting roadways near SR 3, including Auto Center Way and Austin Drive. Newer facilities, such as the bike lanes along Kitsap Way and Austin Drive, have a painted buffer between the facility and traffic lane. In East Bremerton, designated bike lanes are present along Wheaton Way and Lebo Boulevard.

A safety analysis for pedestrians and cyclists is in Section 1.7.

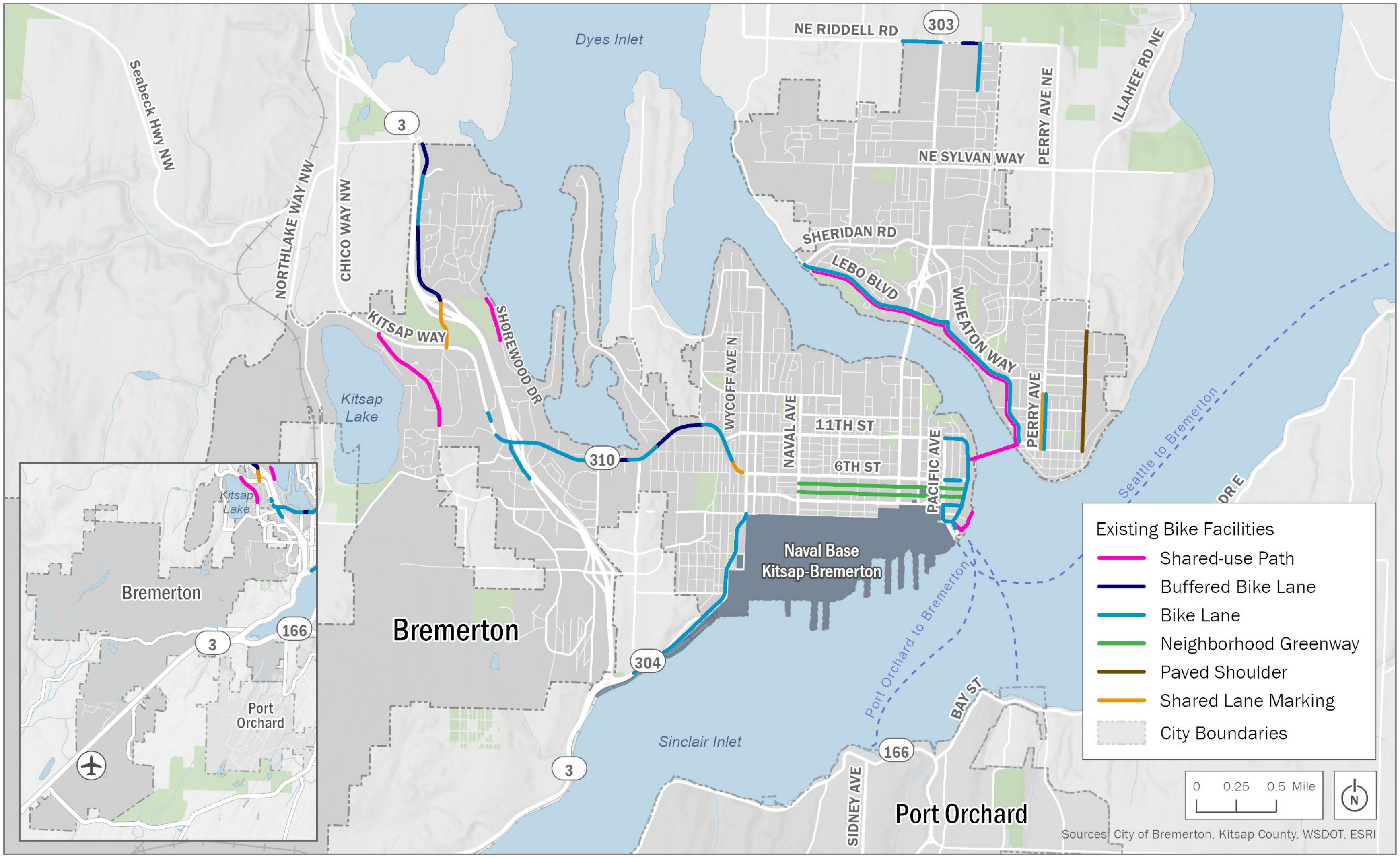


Figure 4. Existing Bicycle Facilities

1.4 Existing Transit Network

Transit service in Bremerton is provided by Kitsap Transit, Mason Transit, and Washington State Ferries. Public transit options include both bus services and ferry routes. Kitsap Transit is the primary transit provider for bus routes within the city, operating 14 fixed routes and on-demand service. Fixed transit routes are concentrated in Bremerton's downtown urban core and Eastside. Kitsap Transit provides on-demand service in the Nollwood Dial-A-Ride service area along Werner Road to connect with fixed-route service. Additionally, Kitsap Transit operates a worker/driver bus service to the Puget Sound Naval Shipyard for federal workers and the South Kitsap Ride on-demand bus service for areas of southwest Bremerton, including the Bremerton National Airport and Puget Sound Industrial Center-Bremerton (PSIC). Mason Transit operates Route 3 and Route 23 between Belfair and Bremerton Ferry Terminal. Typical peak and off-peak transit frequencies by bus route are shown in Table 2. Service hours vary by route but generally begin at 4:30 or 5 a.m. and extend to 8 or 9 p.m. on weekdays. Saturday service times are more variable, with service between 8 a.m. and 7 p.m. for the most frequent Kitsap Transit bus routes with 30-minute frequencies and between 10 or 11 a.m. and 5 to 6 p.m. for routes with 60-minute frequencies. Route 212 is the only bus route serving Bremerton that has regular Sunday service. Routes with peak-only weekday service do not have Saturday or Sunday service.

Table 2. Bus Service and Average Frequencies

Bus Route	*Service Period*	*Weekday Service Span*	*Peak Frequency*	*Off-Peak Frequency*
#212 - Bremerton/Silverdale West	Mon - Sat	4:30 a.m.–10 p.m.	30 minutes	30 minutes
#215 - McWilliams	Mon–Fri	4 a.m.–8 a.m. 3 p.m.–7 p.m.	20–40 minutes	N/A
#217 - Bremerton/Silverdale East	Daily	4:30 a.m.–10 p.m.	30 minutes	30 minutes
#219 - Crossroads	Mon–Fri	5 a.m.–7:30 a.m. 3 p.m.–4:30 p.m.	15-35 minutes	N/A
#220 - Sunn Fjord	Mon–Sat	4:30 a.m.–9 p.m.	60 minutes	60 minutes
#221 - Perry Avenue	Mon–Sat	5 a.m.–9 p.m.	30 minutes	60 minutes
#222 - Gateway	Mon–Fri	4 a.m.–8 a.m. 3 p.m.–6:30 p.m.	AM peak: 30–50 minutes PM peak: 30–120 minutes	N/A
#223 - Kariotis	Mon–Sat	6:30 a.m.–7 p.m.	60 minutes	60 minutes
#224 - Olympic College	Mon–Sat	5:00 a.m.–7:30 p.m.	30 minutes	60 minutes
#225 - Sheridan Park	Mon–Sat	5 a.m.–9 p.m.	30 minutes	60 minutes
#226 - Bay Vista	Mon–Sat	5 a.m.–9 p.m.	30 minutes	60 minutes
#228 - Marion	Mon–Sat	5:30 a.m.–7:30 p.m.	60 minutes	60 minutes
#229 - Trenton	Mon–Fri	5:30 a.m.–8 a.m. 3 p.m.–7 p.m.	40–50 minutes	N/A
#301 - North Kitsap Fast Ferry	Mon–Fri	4:30 a.m.–8 a.m. 12:30 p.m.–7 p.m.	75–80 minutes	75–80 minutes
Mason Transit #3	Mon–Sat	5:30 a.m.–7:30 p.m.	50–60 minutes	140–170 minutes
Mason Transit #23	Mon–Fri	4 a.m.–5 a.m.	One Trip Daily	

Four ferry routes provide service from the Bremerton Ferry Terminal (see Table 3). The Washington State Ferries Seattle-Bremerton route offers auto and passenger service to Coleman Dock in downtown Seattle. Seattle-Bremerton Ferry is a vital connection for the region's transportation network and has heavy ridership for commuters accessing Seattle during the week. Due to fleet and staffing challenges faced by Washington State Ferries, the Seattle-Bremerton Ferry is running on a reduced schedule. Kitsap Transit operates a passenger-only fast ferry service, which also carries heavy commuter traffic. WSDOT currently funds expanded Kitsap Fast Ferry service with additional sailings while the Washington State Ferries Seattle-Bremerton ferry is operating on a reduced schedule. Kitsap Transit also operates two passenger-only foot ferry routes from the Bremerton Ferry Terminal to Port Orchard and Annapolis.

Table 3. Transit Service: Ferry Routes

Agency	*Ferry Route*
WSDOT	Seattle - Bremerton Ferry
Kitsap Transit	Bremerton - Seattle Fast Ferry Bremerton - Annapolis Foot Ferry Port Orchard - Bremerton Foot Ferry

In Bremerton, residents access transit via bus stops, park and rides, transit centers, and the Bremerton Ferry Terminal. These amenities facilitate transportation connections both within Bremerton and to regional destinations. Transit facilities are summarized in Table 4, with the existing transit network shown in Figure 5.

Table 4. Transit Facilities

Facility	*Transit Connections*		*Amenities*
Bremerton Transportation Center (Ferry Terminal)	#212 - Bremerton/ Silverdale West #215 - McWilliams Commuter #217 - Bremerton/ Silverdale East #220 - Sunn Fjord #221 - Perry Avenue #222 - Gateway #224 - Olympic College	#225 - Sheridan Park #226 - Bay Vista #228 - Marion #229 - Trenton Commuter #301 - North Kitsap Fast Ferry Kitsap Transit Local Foot Ferries Bremerton Fast Ferry Mason Transit Washington State Ferries	Bus shelters, pedestrian lighting, ferry waiting and queueing areas, restrooms, bicycle parking for up to 28 bikes
Crossroads Neighborhood Church Park & Ride	#219 - Crossroads Shuttle #217 - Bremerton/Silverdale East #301 - North Kitsap Fast Ferry Express		107 parking spaces, paved lot, pedestrian lighting
Wheaton Way Transit Center	#215 - McWilliams Commuter #217 - Bremerton/ Silverdale East #219 - Crossroads Shuttle #221 - Perry Avenue	#223 - Kariotis #225 - Sheridan Park #229 - Trenton Commuter #30 - North Kitsap Fast Ferry Express	163 parking spaces, paved lot, pedestrian lighting, bus shelters bike racks and lockers, restrooms, 4 EV chargers
Bremerton United	#212 - Bremerton/Silverdale West #222 - Gateway Express #224 - Olympic College		53 parking spaces, paved lot, pedestrian lighting

Methodist Church	#226 - Bay Vista	
Gateway	#222 - Gateway Express #226 - Bay Vista	105 parking spaces, paved lot, pedestrian lighting

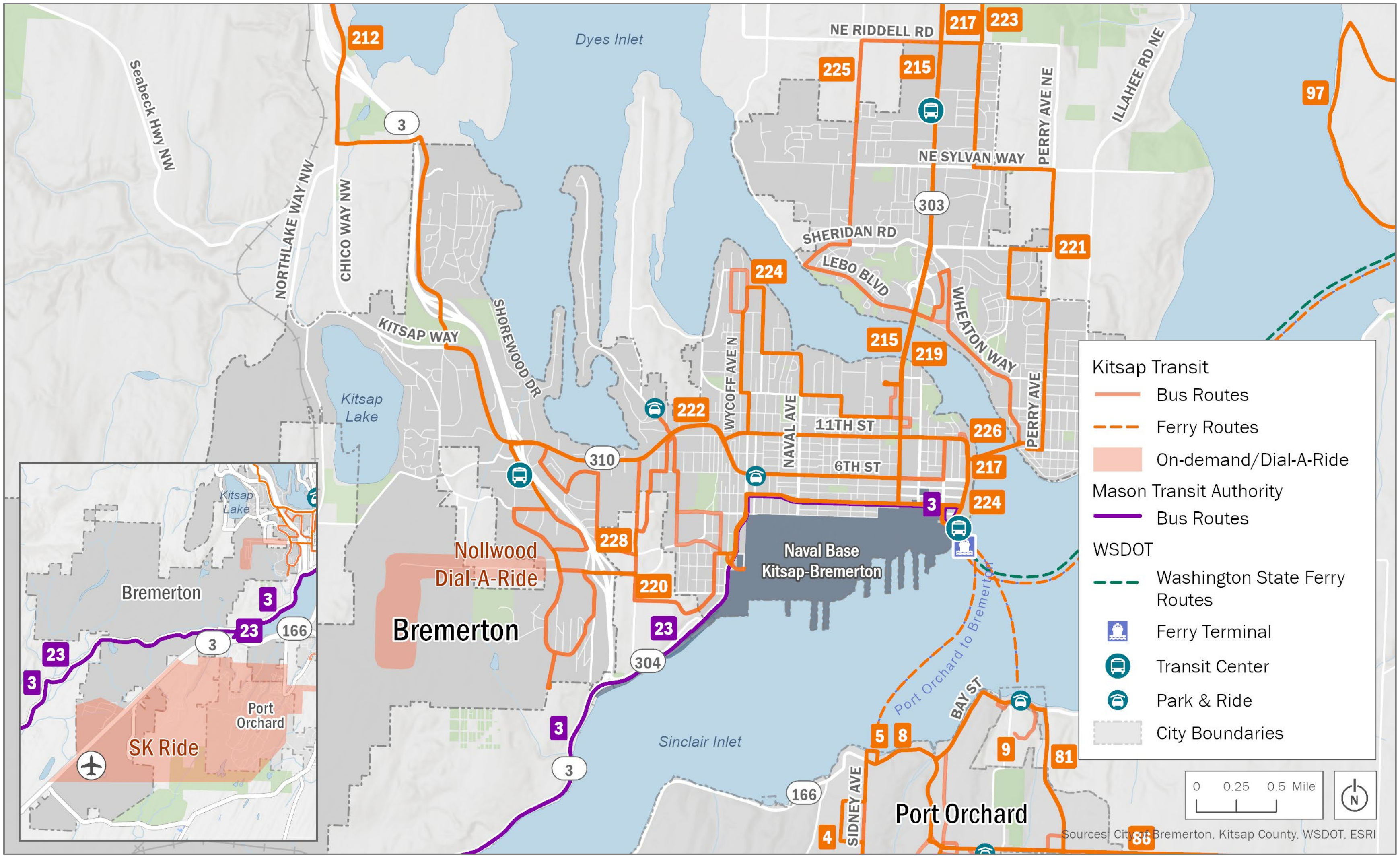


Figure 5. Existing Transit Network

1.5 Existing Freight Network

The Washington State Freight and Goods Transportation System (FGTS) is a freight network designated by WSDOT. FGTS classifies freight corridors for truck, rail, and waterways based on annual freight tonnage carried. Strategic Freight Corridors, based on the FGTS system, are critical transportation routes of significant economic importance, carrying substantial freight volumes. Strategic Freight Corridors include T-1 and T-2 truck routes, R-1 rail routes, and W-1 through W-4 waterway routes. The FGTS network within Bremerton includes both truck and rail corridors. FGTS corridors are categorized into five tiers per mode based on annual freight volumes, as shown in Table 5.

Table 5. WSDOT FGTS Classification Descriptions

Freight Mode	***FGTS Corridors***		***Major FGTS Routes in Bremerton***
	Classification	***Freight Moved Annually***	
Truck	T-1	> 10 million tons per year	SR 3, SR 16
	T-2	4 million to 10 million tons per year	SR 3, SR 16
	T-3	300,000 to 4 million tons per year	SR 303, SR 304, Kitsap Way (SR 310), other local arterial and collector roadways
	T-4	100,000 to 300,000 tons per year	Local arterial and collector roadways
	T-5	> 20,000 tons in 60 days and < 100,000 tons per year	Seattle to Bremerton Ferry (SR 304)
Rail	R-1	> 5 million tons per year	N/A
	R-2	1 million to 5 million tons per year	N/A
	R-3	500,000 to 1 million tons per year	N/A
	R-4	100,000 to 500,000 tons per year	Puget Sound and Pacific Railroad
	R-5	< 100,000 tons per year	N/A
Waterway	W-1	> 25 million tons per year	N/A
	W-2	10 million to 25 million tons per year	N/A
	W-3	5 million to 10 million tons per year	N/A
	W-4	2.5 million to 5 million tons per year	N/A
	W-5	0.9 million to 2.5 million tons per year	N/A

Source: WSDOT 2021 FGTS

As presented in Figure 6, SR 3 and SR 16 are the only roadways in Bremerton classified as T-1 and T-2 truck freight corridors. Most other major truck freight corridors in the city are classified as T-3, which primarily include arterial roadways such as SR 303, SR 304, and SR 310 and a number of other local arterial and collector roadways that carry higher freight volumes. The Seattle to Bremerton WSDOT ferry is classified as a T-5 corridor as an extension of SR 304. The Puget Sound and Pacific Railroad is the only designated rail corridor within Bremerton and is classified as R-4. This rail corridor is owned by the U.S. Navy and operated by Puget Sound and Pacific Railroad. One segment of the rail, which is not part of the FGTS rail network, extends along SR 304 to NBK-BR. Freight corridors in Bremerton are shown in Figure 6.

1.6 Existing Vehicular Traffic

Bremerton uses level of service (LOS) to evaluate existing operational conditions of major intersections. LOS metrics provide a qualitative measure of vehicle delay, represented by grades ranging from A (free flow with minimal delays) to F (high congestion with significant delays). LOS is determined by delay per vehicle at signalized intersections. For unsignalized intersections, LOS is determined by the delay per vehicle for the approach with the greatest delay rather than the average delay at the intersection as a whole. The existing intersection LOS evaluation is based on fall 2023 traffic counts and does not account for current projects or future roadway improvements.

LOS thresholds are established by the city for municipal roads and by WSDOT for state routes. In Bremerton, minimum standards are defined as LOS E for City roadways. WSDOT LOS thresholds are LOS D for roads designated as Highways of Statewide Significance (HSS), which are SR 304 (Charleston Blvd and Burwell Street), SR 310 (Kitsap Way) and LOS E/Mitigated for non-HSS roadways which is SR 303 (Wheaton Way and Warren Avenue). LOS E/Mitigated identifies locations where congestion must be mitigated when peak hour LOS falls below LOS E.

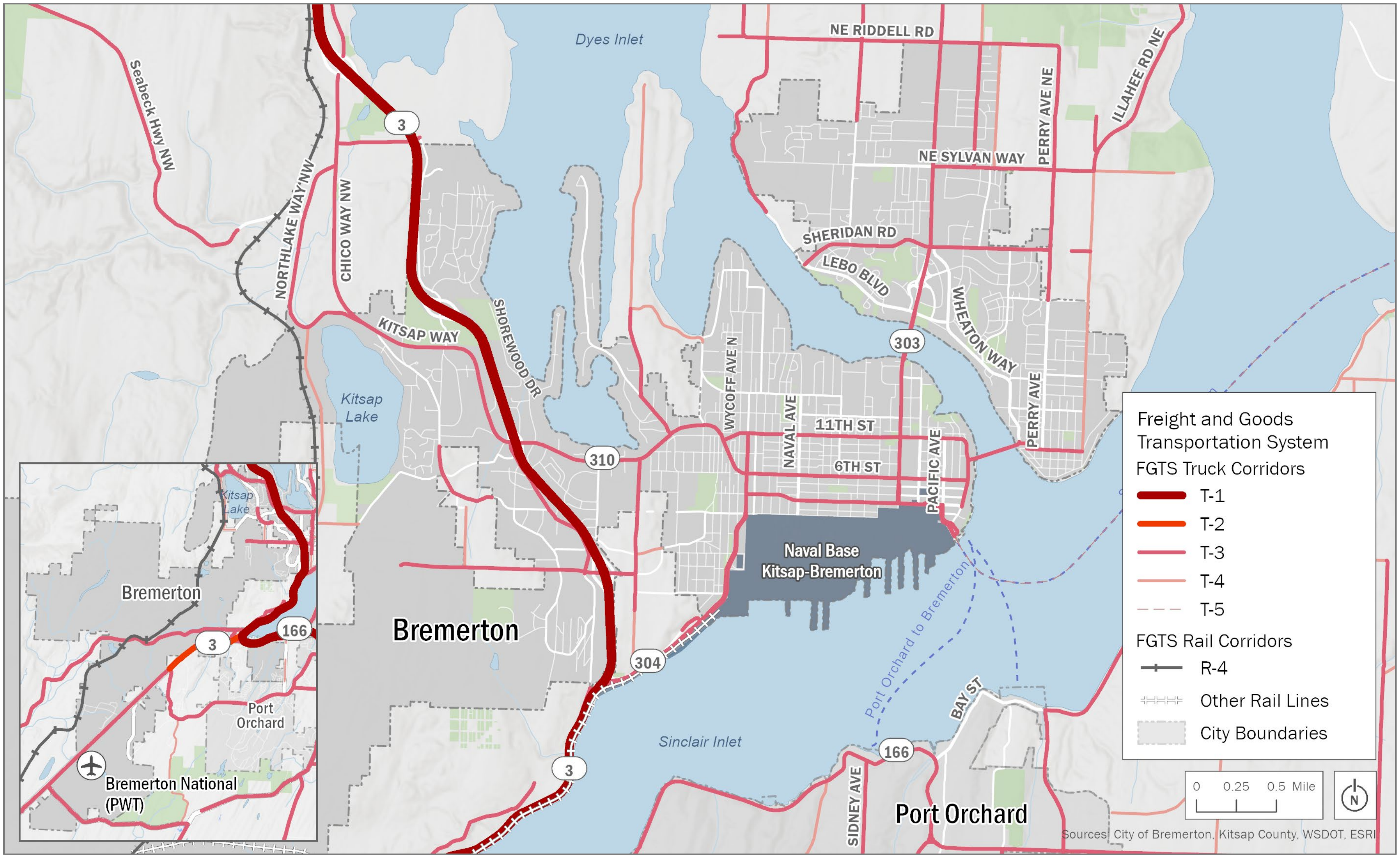


Figure 6. FGTS Classifications

The LOS analysis examined 60 major intersections in Bremerton during peak congestion hours in 2023. Intersections that performed at or below the applicable LOS standard are shown in Table 6. Figure 7 shows the morning peak hour LOS, Figure 8 shows the evening peak hour LOS. The AM peak and PM peak hours were defined based on observed weekday traffic by intersections, roadway federal functional classification, control type, and location. Three intersections operate below standard, and three intersections currently operate at their minimum LOS standard. All intersections at or below minimum LOS standard are located along WSDOT routes, as analyzed in the 2023 Intersection Level of Service Analysis Technical Memo, based on traffic counts from the fall of 2023, and is included in Attachment B.

Table 6. Existing (2023) Intersection LOS at or below City or WSDOT Standard

Intersection	***LOS Standard***	***AM LOS***	***PM LOS***
Kitsap Way (SR 310) & SR 3 southbound off-ramp	D (WSDOT HSS)	C	D
Kitsap Way (SR 310) & Marine Drive	D (WSDOT HSS)	D	E
Warren Ave (SR 303) and Burwell Street (SR 304)	D (WSDOT HSS)	C	D
Wheaton Way (SR 303) & Sheridan Road	E/Mitigated (WSDOT Non-HSS)	D	E
Loxie Eagans Blvd & SR 3 southbound off-ramp	D (WSDOT HSS)	F	F
SR 3 & Imperial Way	D (WSDOT HSS)	B	E

Kitsap Way (SR 310) and Marine Drive operates at LOS D in the AM peak hour and LOS E in the PM peak hour. In the PM peak hour, the westbound Kitsap Way approach operates over capacity with a volume-to-capacity (v/c) ratio of 1.15 and a 95th percentile queue of over 1,000 feet. Mitigation may require reconfiguration of the intersection or widening of Kitsap Way on both sides of the intersection. The feasibility of major intersection improvements would need to be evaluated in coordination with WSDOT.

The Loxie Eagans Boulevard and SR 3 southbound off-ramp operates at LOS F in both the AM and PM peak hours. The stop-controlled SR 3 southbound off-ramp operates with high delay due to high volume on Loxie Eagans Boulevard. The intersection is identified for a recommended roundabout improvement in the Joint Compatibility Transportation Plan (JCTP) Preferred Alternative and the SR 16 Tacoma Narrows Bridge to SR 3 Congestion Study.

Three intersections are currently operating at the minimum adopted LOS standard may reach LOS-deficient status with ongoing local and regional growth. A detailed evaluation of existing (2023) LOS at all study intersections is included in Attachment B.

Kitsap Way (SR 310) and SR 3 southbound off-ramp operates at LOS D in the PM peak hour. The West Kitsap Way Planning Study identifies future re-channelization of the SR 3 southbound off-ramp which will provide additional intersection capacity.

Wheaton Way (SR 303) and Sheridan Road operates at LOS E in the PM peak hour. The eastbound and southbound approaches operate at LOS E, and the westbound approach operates at LOS F.

Warren Avenue (SR 303) and Burwell Street (SR 304) operates at LOS D in the AM peak hour. The south intersection leg currently provides access to a parking lot. Mitigation may include closure of the parking lot access which would allow more allocation of signal green time to the other three approaches. The SR 303 Corridor Study identifies this intersection for improvements.

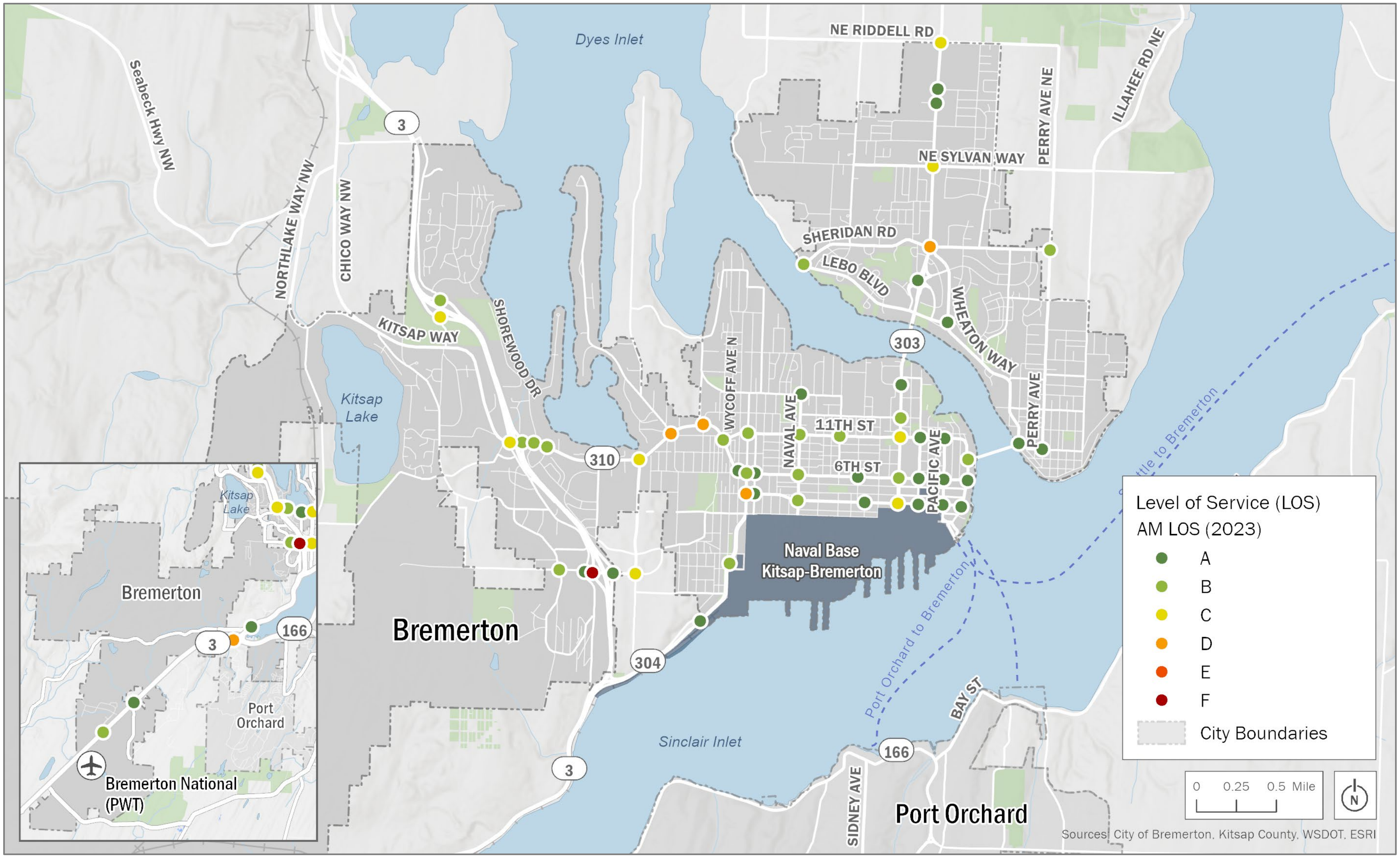


Figure 7. AM LOS (2023)

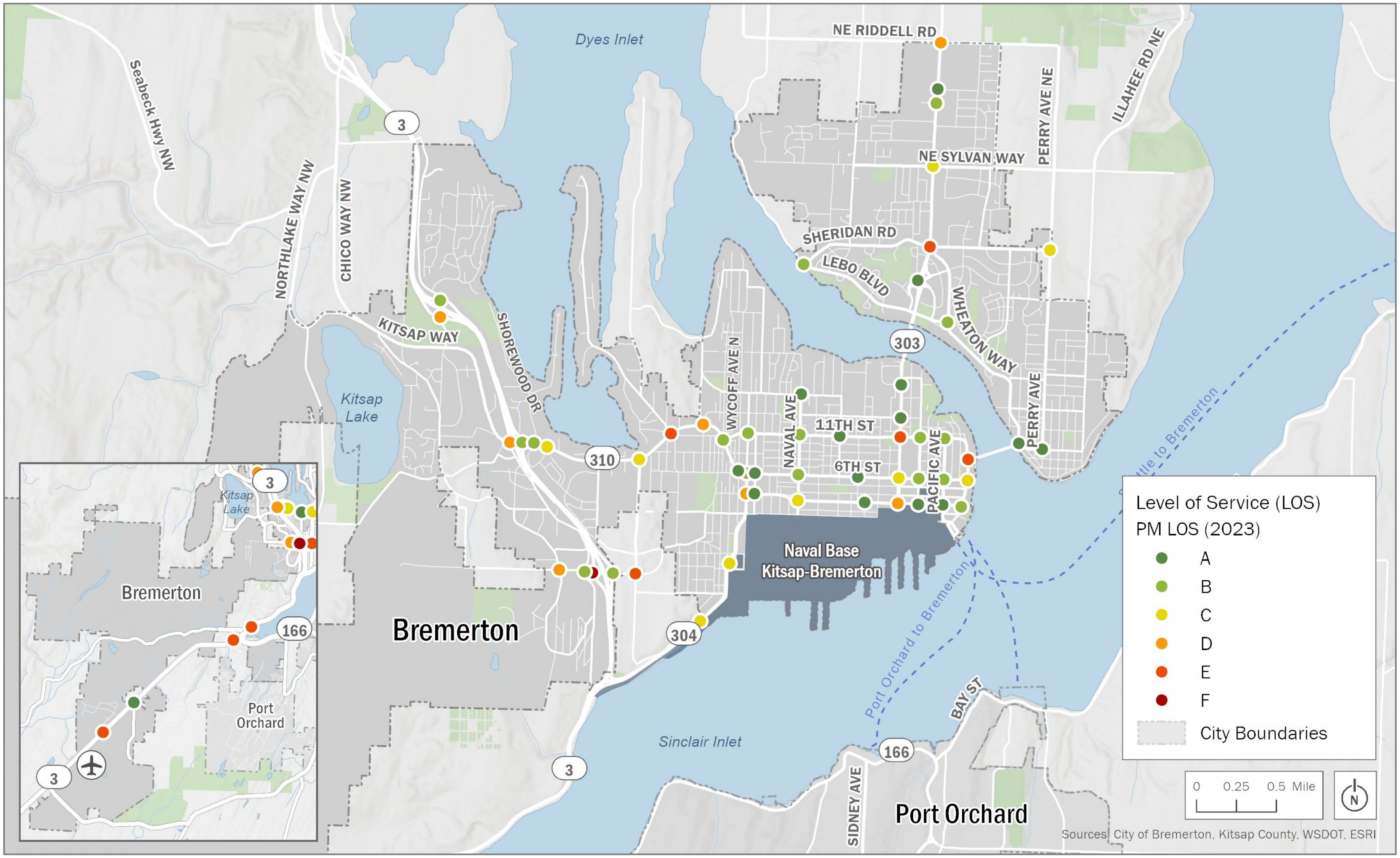


Figure 8. PM LOS (2023)

1.7 Safety and Collisions

Crashes within the city of Bremerton between 2018 and 2022 are concentrated near higher traffic roadways, including state routes, arterials, and major intersections. Figure 9 shows the locations of crashes of all user types, which are also particularly dense along state routes and arterials within the city including SR 3, SR 303, SR 304, SR 310, 11th Street, and other downtown streets. The fatal crashes that have occurred over the same period were concentrated primarily along or near SR 3 and SR 303. Crashes involving bicyclists and pedestrians between 2018 and 2022 showed a similar pattern and were more concentrated in downtown Bremerton and along state routes and arterials.

Within the past 5 years, there have been 110 crashes that involved a bicyclist or pedestrian within the city limits of Bremerton, and only 6% involved drivers under the influence of drugs or alcohol. Most active transportation crashes occurred along arterial or collector roadways, with major crash hotspots downtown and at a major intersection of SR 303 in the northeast section of the city. Table 7 summarizes all active transportation crashes in the past 5 years.

Table 7. Active Transportation Crashes within the City of Bremerton (2018–2022)

		2018	*2019*	*2020*	*2021*	*2022*
No Injury/ Unknown	Bicyclist	4	7	1	2	2
	Pedestrian	7	8	3	4	1
Suspected Serious Injury	Bicyclist	1	1	0	0	0
	Pedestrian	3	3	5	3	3
Suspected Minor Injury	Bicyclist	2	4	2	1	5
	Pedestrian	11	5	6	5	8
Fatal	Bicyclist	0	0	0	0	0
	Pedestrian	2	0	0	0	1
Total Bicyclist Crashes		**7**	**12**	**3**	**3**	**7**
Total Pedestrian Crashes		**23**	**16**	**14**	**12**	**13**

Source: Washington State Department of Transportation Crash Data 2018 -2022

Total crashes involving bicyclists and pedestrians has generally decreased since 2018. A sharp decline in annual crashes occurred in 2020, which may be a result of changing traffic patterns and reduced vehicular traffic due to the COVID-19 pandemic. Approximately 66% of these crashes occurred at an intersection. There were three fatal pedestrian crashes during this timeframe. Two of the pedestrian fatalities on National Avenue and Oyster Bay Avenue W involved drivers under the influence. The other pedestrian fatality occurred along SR 3, which is maintained by WSDOT, on Sam Christopherson Avenue. Figure 9 shows the location and severity of all crashes from 2018 to 2022. Figure 10 and Figure 11 show the locations and severity of pedestrian-related and bicyclist-related crashes from 2018 to 2022.

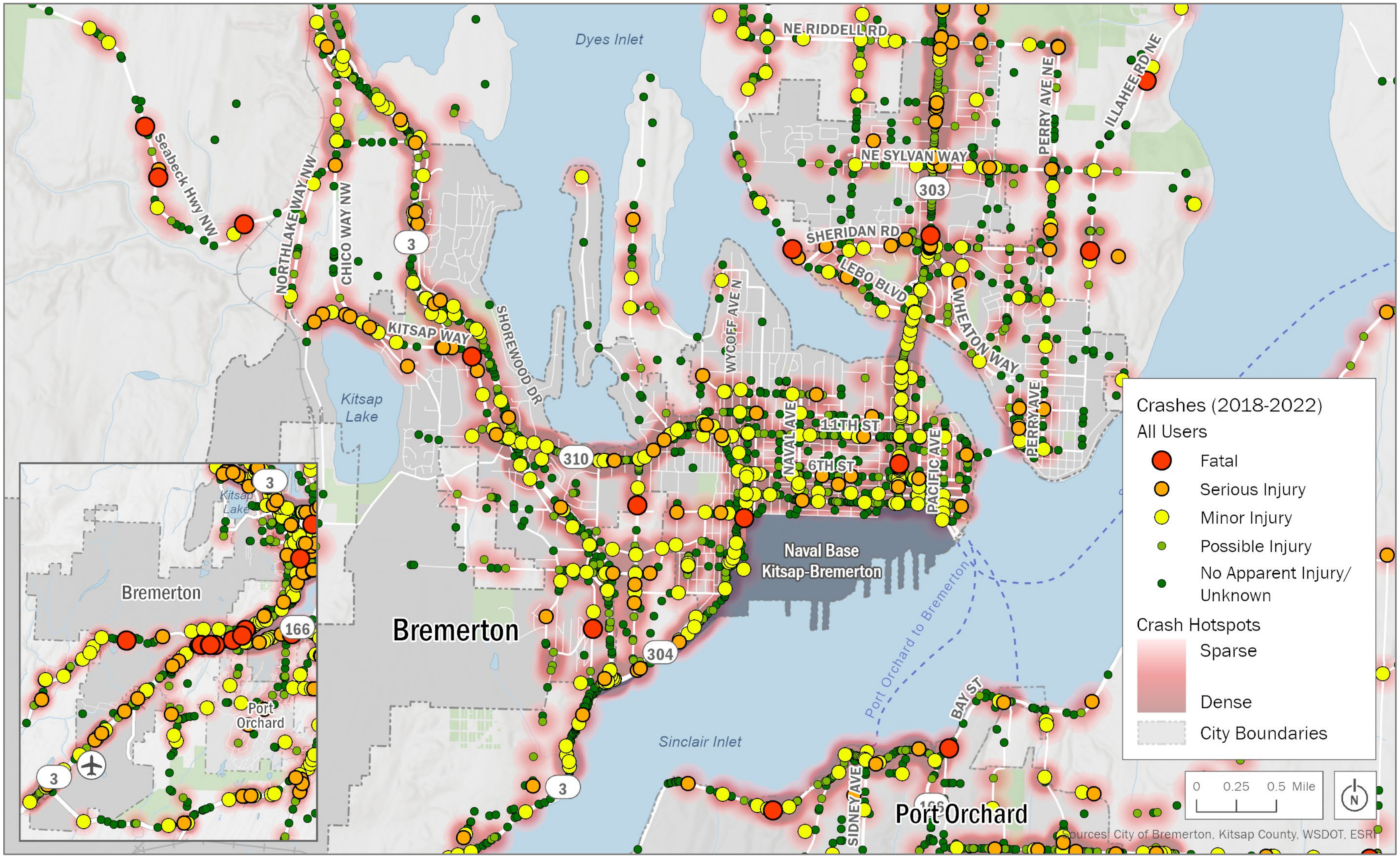


Figure 9. All Crashes (2018–2022)

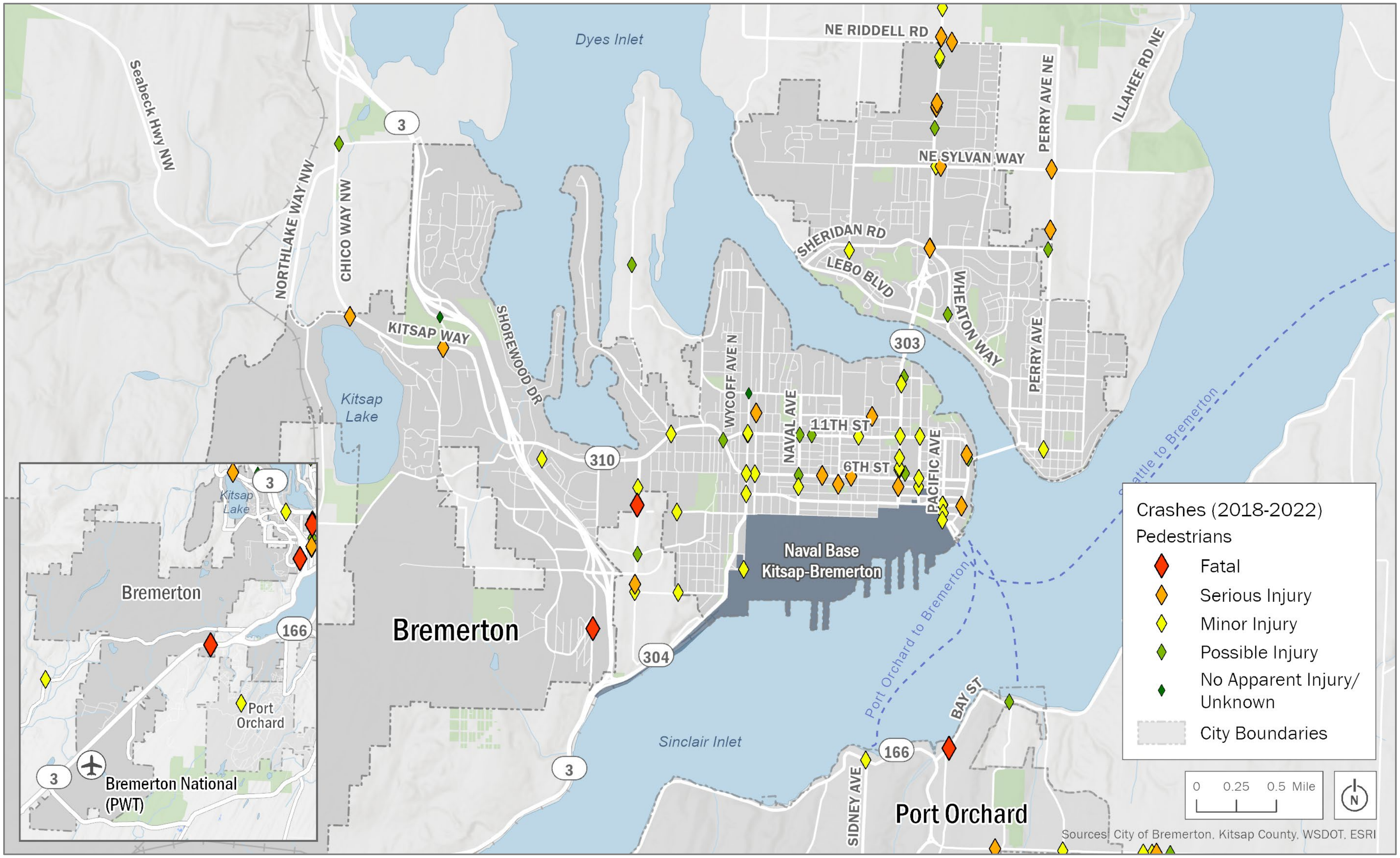


Figure 10. Pedestrian Crashes (2018–2022)

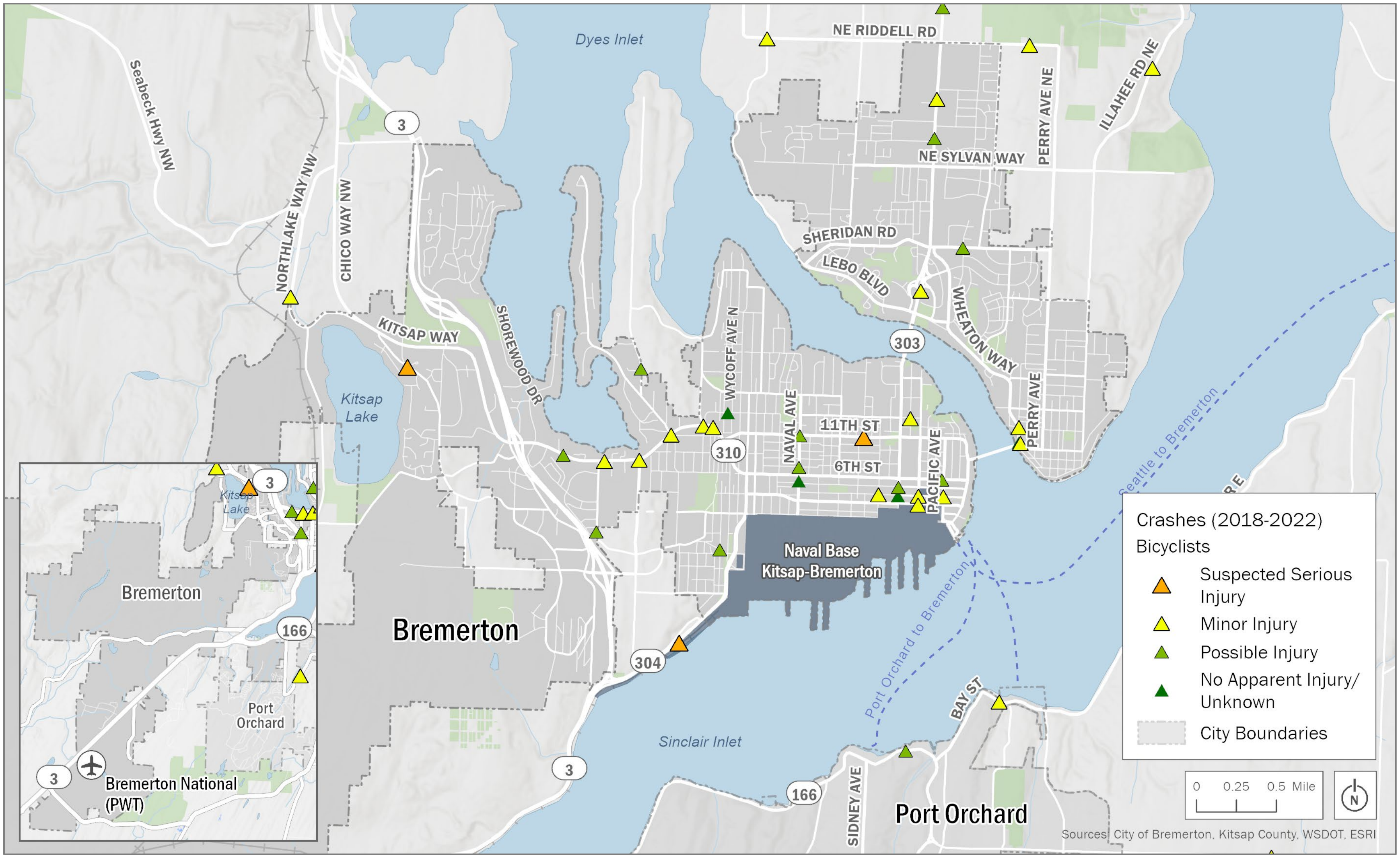


Figure 11. Bicycle Crashes (2018–2022)

2. Related Plans and Projects

2.1 City Plans

2.1.1 Bremerton Active Transportation Plan

Bremerton adopted its first Non-Motorized Transportation Plan in 2007. This plan identified deficiencies in the city's existing pedestrian and bicycle networks and recommendations for the future pedestrian and bicycle networks. The 2007 Plan recommended a range of different types of improvements that would benefit people walking, cycling, and rolling in Bremerton. These included fundamental elements of the network such as sidewalks, crosswalks, bicycle lanes, and shared-use paths. The strategies and priorities in the plan include:

- Investment in Safe Routes to School.
- Changes to City design requirements for parking and transportation facilities.
- Access to transit improvements.
- Potential implementation of the future pedestrian and bicycle network.

Bremerton's next Active Transportation Plan will be an update to the 2007 Non-Motorized Transportation Plan. The new Plan will be developed in close coordination with the transportation analysis in this Transportation Appendix and will support the goals and policies of the Transportation Element of the 2044 Comprehensive Plan with a focus on people walking, cycling, and rolling. Public input collected during the engagement process informed the recommendations of the Transportation Appendix and the infrastructure investments that are included in the 20-year transportation capital project list in this document. These recommendations will be considered with the update of the Active Transportation Plan set to resume, after adoption of the 2044 Comprehensive Plan update.

2.1.2 Joint Compatibility Transportation Plan (JCTP)

The 2023 JCTP is a commuter and traffic plan the city of Bremerton developed in partnership with NBK-BR. The JCTP is intended to ensure NBK-BR meets its mission for national defense and supports Bremerton's long-range growth needs. As part of the planning process, the JCTP team examined the existing and future needs for all transportation modes that serve NBK-BR and identified strategies to improve multimodal mobility, build and strengthen partnerships, and improve quality of life in Bremerton.

The JCTP builds on previous work from NBK-BR and other agencies, and it evaluates a range of alternatives to improve multimodal access throughout the city of Bremerton and to and from NBK-BR. The plan's analysis follows the four primary goals of the study and process to develop and evaluate future alternatives.

1. Examine and define existing and future needs for all transportation modes serving NBK-BR.
2. Develop solutions to resolve deficiencies.
3. Evaluate options to mitigate transportation and parking demands.
4. Develop a prioritized implementation plan for the Preferred Alternative.

In the evaluation of future alternatives, the JCTP found that there was tension between base accessibility and livability. The Preferred Alternative identified in the plan balances these two objectives with primarily multimodal improvements to Bremerton's transportation system to support access to NBK-BR. Capital improvements in the JCTP that are expected to be led by the city include re-channelization of 6th Street and Naval Avenue, multimodal infrastructure improvements near the base gates, and adaptive signal timing on Burwell Street, Kitsap Way, 6th Street, and 11th Street. Conceptual improvements as part of the JCTP are shown in Figure 12.

Figure 12. JCTP Conceptual Improvements on 6th Street and Naval Avenue

Capital projects identified as part of the JCTP Preferred Alternative to be implemented by the city are incorporated in the 20-year transportation project list. See Attachment G Capital Improvements Program (CIP).

2.1.3 SR 303 Corridor Study

The SR 303 Corridor Study was a study of the SR 303 corridor in Bremerton and unincorporated Kitsap County completed in 2021 and led by the city of Bremerton and WSDOT in partnership with Kitsap County. The purpose of the study was to assess constraints along the corridor and prioritize potential projects that would help meet local needs along the corridor. The study evaluated existing and future corridor needs and deficiencies on SR 303 and identifies a preferred alternative with near-, mid-, and long-term improvement strategies to achieve the long-term vision for the corridor.

The overall vision for the SR 303 corridor that was developed as part of the study, is an economically prosperous corridor with a mix of land uses that is accessible and safe for people using all modes of travel. A critical part of this vision is that all people traveling on the corridor feel safe and have access to economic opportunities. To achieve this vision, the preferred alternative identified in the study includes an emphasis on improved sidewalks, reduced conflict points, investments in transit, and corridor traffic management. The proposed improvements in the preferred alternative include:

- Adaptive signal technology with an option for transit signal priority.
- Roundabouts at key locations that contribute to traffic operations, pedestrian accessibility, safety, and context.
- Widened and completed city sidewalks south and north of the Warren Avenue Bridge.
- 10-footwide sidewalks that may be used by all modes of active transportation.

- More connections for active transportation along, across, and adjacent to the corridor.
- Designated bicycle facilities across and adjacent to the corridor.
- Business access and transit (BAT) lane between Callahan Drive and Hollis Street.

Corridor concepts from the SR 303 Corridor Study are shown in Figure 13, Figure 14, and Figure 15.

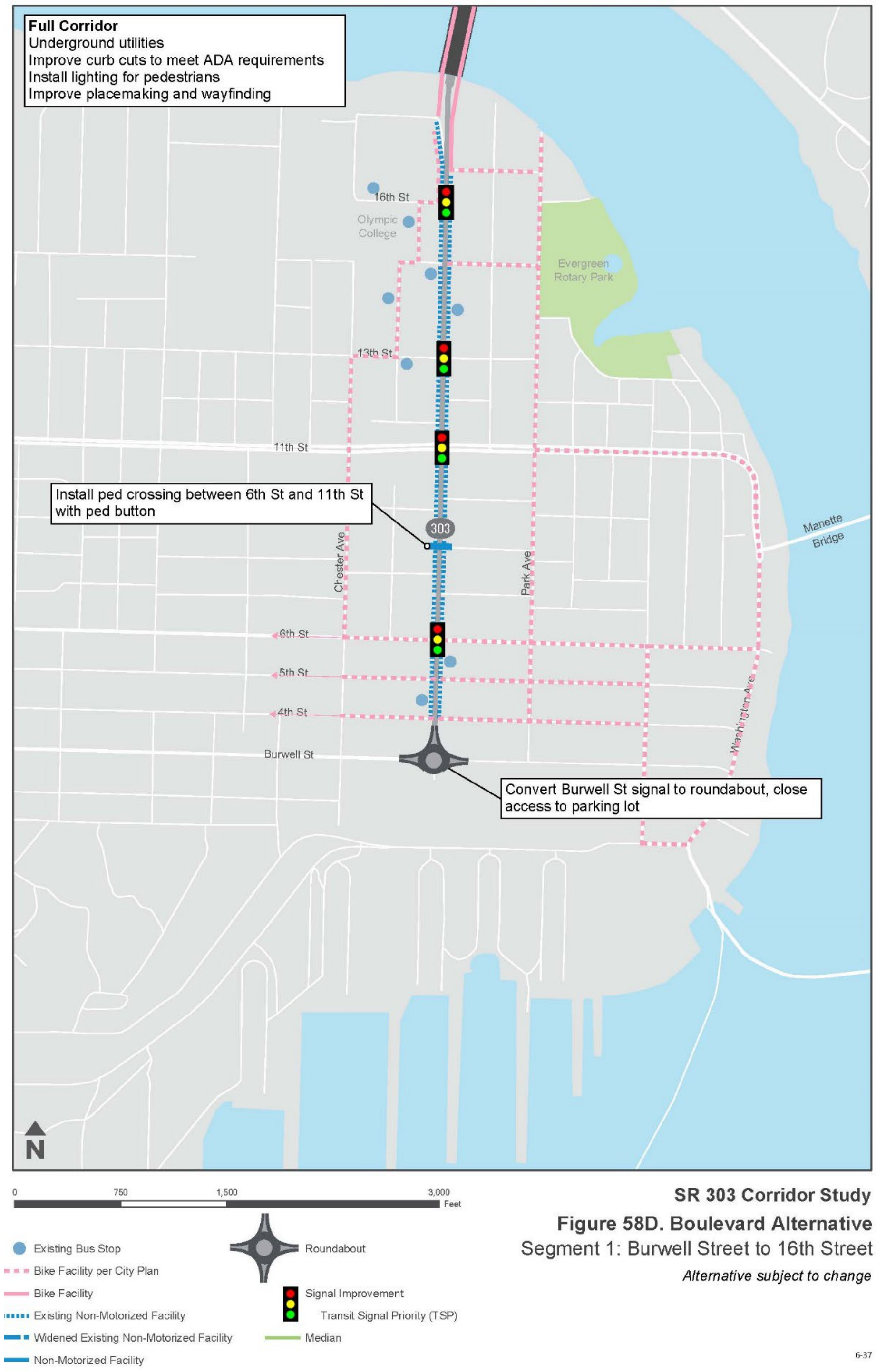


Figure 13. SR 303 Concept Burwell Street to 16th Street Section

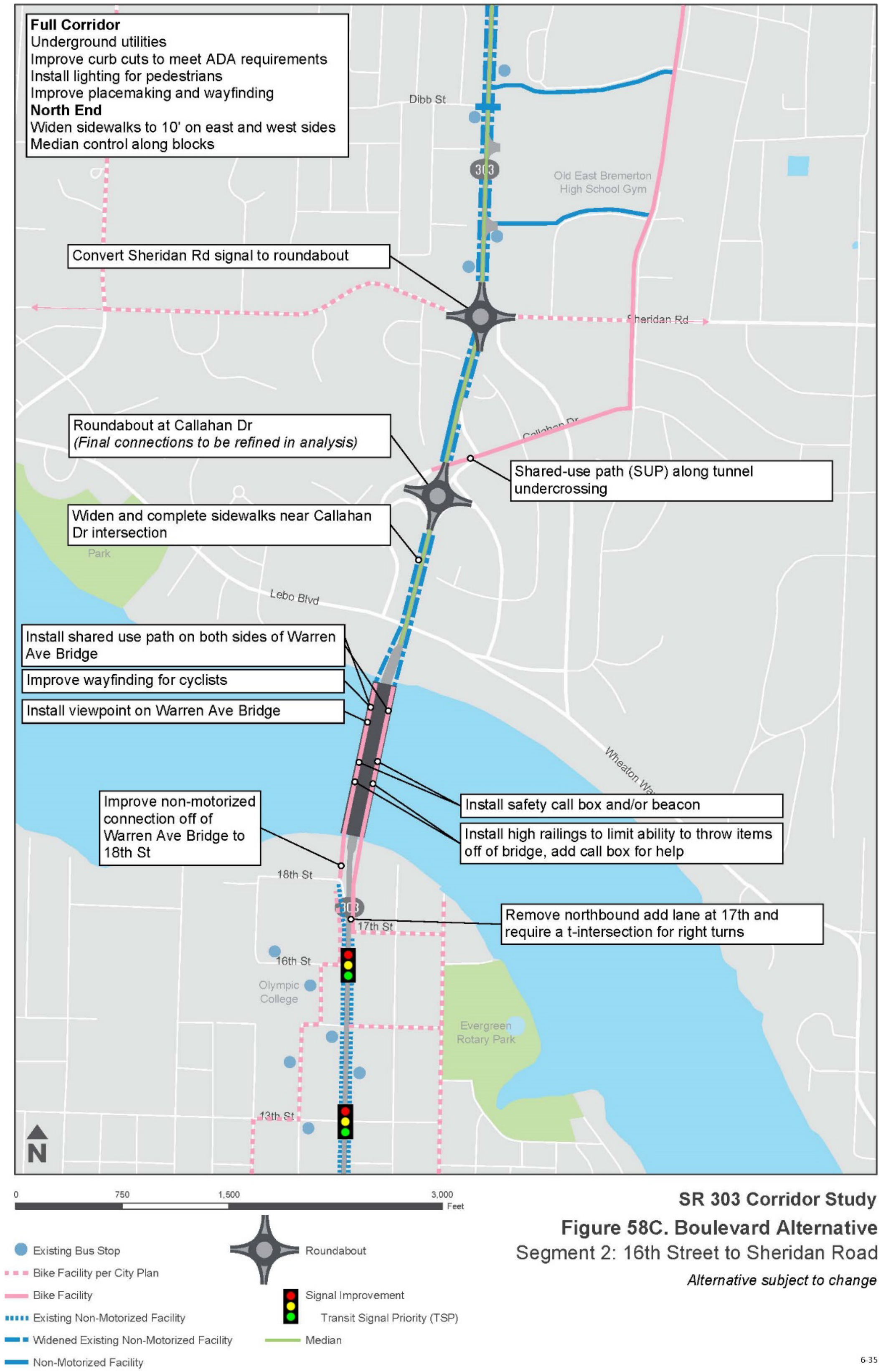


Figure 14. SR 303 Corridor Concept 16th Street to Sheridan Road Section

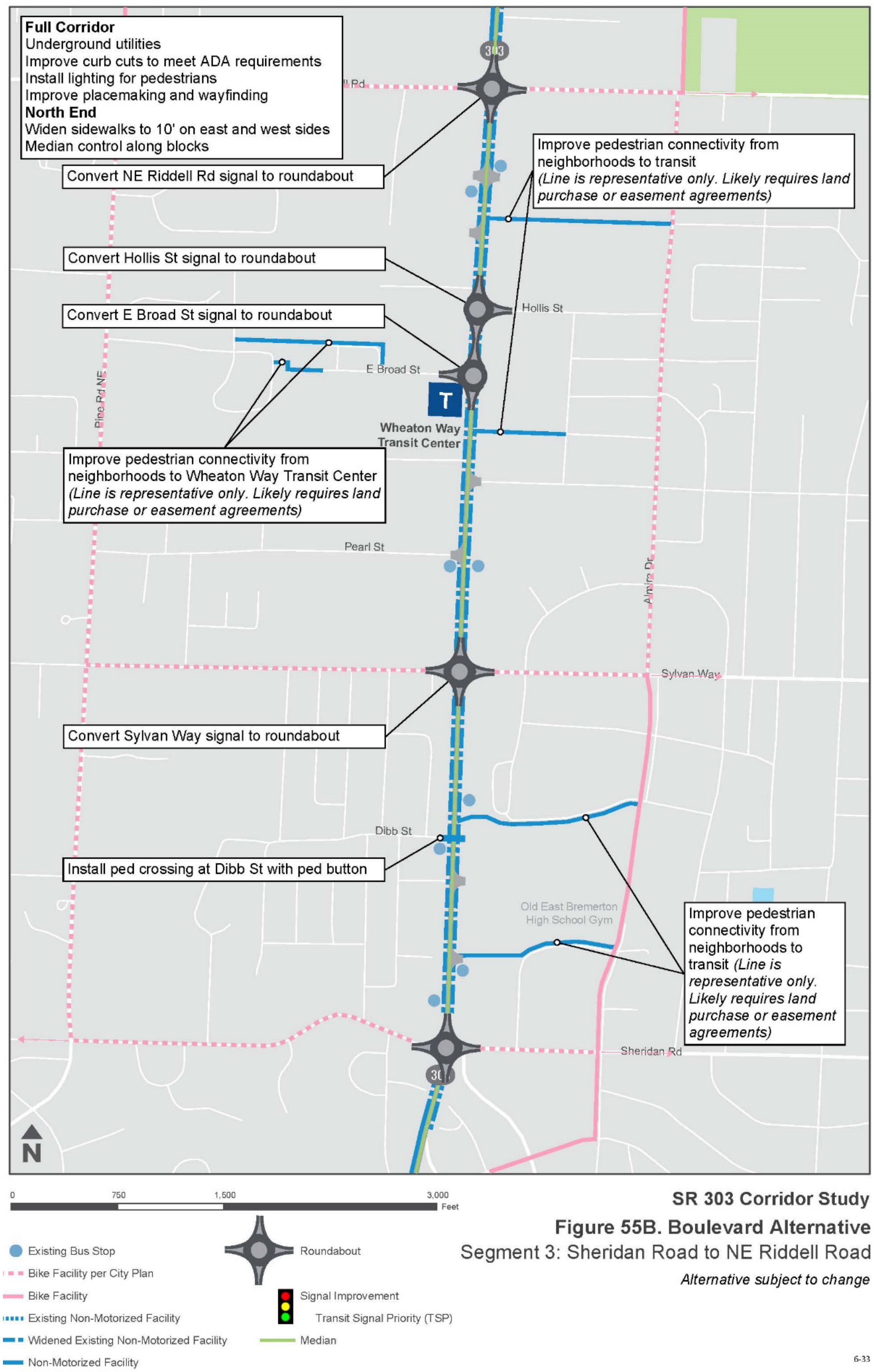


Figure 15. SR 303 Corridor Concept Sheridan Road to Riddell Road Section

2.1.4 Subarea Plans

2.1.4.1 Downtown Subarea Plan

The Downtown Subarea Plan was adopted in 2007 and is undergoing a significant update in 2024/2025. The plan establishes a vision for compact, mixed-use development in Downtown Bremerton. The plan defines desired patterns of development and design through urban design concepts and land use strategies. These strategies for implementation of the land use and urban design vision for downtown, incorporate sustainable design and development that is sensitive to local context, views, and environmental features. These urban design strategies are coupled with design principles that are reflected in zoning schemes for Downtown Bremerton.

2.1.4.2 PSIC Subarea Plan (formally SKIA or South Kitsap Industrial Area 2012)

The City of Bremerton completed a subarea plan for the South Kitsap Industrial Area known as SKIA, in 2012. SKIA was recognized as a regional manufacturing/industrial center or MIC in 2003 by PSRC. In 2014, the city and the port acted to rename the center “Puget Sound Industrial Center - Bremerton” or PSIC. The plan supports sustainable economic development in southwest Bremerton. It also ensures that future development would help reduce greenhouse gas emissions and promote low-impact development concepts. The plan’s long-term vision is an industrial employment center that is home to a range of different activities and industries focused on environmentally sustainable industrial development and jobs.

The PSIC subarea consists of approximately 3,700 areas located in south central Kitsap County. The plan includes goals, strategies, and desired outcomes to support compact and intensive industrial development that minimizes impacts to the natural environment. The goals and strategies for the future transportation network support all modes of travel. The plan also describes opportunities for partnerships with other agencies including WSDOT and local property owners and developers to create a transportation system that is financially feasible. The subarea plan’s preferred conceptual roadway network includes a comprehensive circulation concept to be implemented as part of new development in the subarea.

2.1.4.3 Other Subarea Plans

The City of Bremerton’s other subarea plans envision future localized transportation improvements and potential future connections in Bremerton’s districts and centers including the following:

- **Harrison Heights Subarea Plan:** This plan was adopted in 2020; amended in 2022 and renamed in 2024. The plan is focused on mixed growth, with a range of commercial and multifamily residential into this key center. Included in the plan are design standards, and zoning.
- **East Park Subarea Plan:** Adopted in 2006; Street network concepts such as narrow lanes and street parking are utilized to reduce impervious areas and for traffic calming. Greenways, sidewalks and tree lawns are incorporated for pedestrian and bicycle safety.
- **Bay Vista Subarea Plan:** Originally known as The West Park Sub-Area Plan was adopted in 2007; in 2008 the area was renamed Bay Vista and in 2009 the subarea plan was renamed the Bay Vista Subarea Plan. The plan promotes a mixed-use, mixed-income traditional neighborhood, creating a pedestrian oriented environment and enhancing more usable open space.

2.1.4.4 Other Planning Documents

- **Rediscover Charleston | Area-Wide Planning Study (CAPS plan):** This Planning Study was created in 2020 and while not a subarea plan, the study outlines redevelopment strategies for the Charleston District focusing on brownfield site revitalization. It includes land use planning, market analysis, and community input to support economic growth, enhance walkability, and improve environmental conditions.

2.2 Kitsap County

2.2.1 Countywide Planning Policies

In 2023, Kitsap County adopted revisions to its Countywide Planning Policies (CPPs) together with growth targets for the cities, urban growth areas (UGAs), and rural lands in the County. The CPPs establish a countywide framework for city and county comprehensive plans. The transportation policies in the Kitsap County's 2023 CPPs are summarized by subject area.

- T-1. Strategies to optimize and manage the safe use of transportation facilities and services including maintenance of the existing network, prioritization of existing deficiencies, transportation system management strategies, access management, and shared facilities and transportation resources.
- T-2. Reducing the rate of growth in auto traffic, including the number of vehicle trips, the number of miles traveled, and the length of vehicle trips taken, for both commute and non-commute trips including incentives for non-single occupancy -vehicle travel, complete streets standards, missing vehicular and active transportation links, and active transportation plans.
- T-3. Environmental and human health impacts of transportation policies including minimizing adverse impacts to human and environmental health, and programs that improve human health and air quality, as well as protection of water resources.
- T-4. Designation of centers and efficient and equitable transit and pedestrian travel appropriate for each planning area including development strategies and plans for designated centers, incorporation of emerging transportation modes into planning, and engagement to understand local transportation needs.
- T-5. Transportation linkages between designated local, regional, and candidate centers including designated corridors for travel between centers by all modes.
- T-6. Freight transportation strategies to ensure reliable goods movement including compatible land uses around freight corridors and facilities and appropriate roadway standards and designations for freight corridors.
- T-7. Active participation of Kitsap County cities in Puget Sound Regional Council (PSRC) and the Peninsula Regional Transportation Planning Organization (PRTPO).
- T-8. Coordination of intra-county transportation planning efforts including collaboration in reassessment of land use and transportation goals, compatible land uses and transportation facilities, coordinated street classifications and standards between jurisdictions.
- T-9. Coordinated and consistent LOS standards to develop comparable standards between the County, cities and WSDOT and expansion of LOS standards to address multimodal concurrency.

Kitsap County's CPPs were considered in the planning process to update the goals, policies, and strategies in the Bremerton 2044 Comprehensive Plan and the plan's Transportation Element.

2.2.2 Kitsap County Comprehensive Plan

The Kitsap County Comprehensive Plan 2024–2044 is a policy document that will guide decision-making, growth, and investments in Kitsap County for the next 20 years. The plan emphasizes sustainable housing and employment growth based on targets that align with the regional growth strategies in VISION 2050, described in Section 2.3. The Kitsap County Comprehensive Plan sets targets for and outlines strategies to accommodate future growth throughout the county, including the Bremerton UGA.

The Transportation Element of the Kitsap County Comprehensive Plan 2024–2044 outlines goals, policies, and strategies to guide future investment in the county's transportation system. The county's policies and strategies fall under 10 transportation goals for county facilities. These countywide goals align with the goals and policies of Bremerton's Transportation Element.

The Kitsap County Comprehensive Plan includes a specific Gorst Neighborhood Plan for the Gorst UGA between Bremerton and Port Orchard. This neighborhood plan includes zoning alternatives for higher-density residential and mixed-use development. To achieve the vision for growth in Gorst, the County defines policies for land use and community design as well as the provision of transportation and public services.

2.2.3 Kitsap Transit 2022–2042 Long Range Plan

Kitsap Transit is the public transit agency that serves Kitsap County with fixed-route buses, local ferry, and fast ferry service. The agency also administers car and vanpool programs, worker-driver buses, and on-demand services in different areas of the county. Kitsap Transit updates its Long-Range Transit Plan (LRTP) every 5 to 10 years and adopted its most recent LRTP in 2022. The current LRTP plans for transit investments through 2042 and is coordinated with regional plans by PSRC.

Kitsap Transit's 2022–2042 LRTP includes a range of service projects designed to improve transit service in Kitsap County and capital projects to accommodate operational needs. Kitsap Transit's service projects define the agency's approach to expanded and improved transit service and are dependent on successful implementation of capital projects. Service projects Kitsap Transit is planning for in Bremerton include new or upgraded bus service and other services described below.

- Frequency upgrades to a number of bus routes in and connecting to Bremerton.
- A new local bus route connecting Belfair and West Bremerton.
- A new express bus route connecting Bremerton and Tacoma.
- A new Bremerton circulator to shuttle people around Bremerton.
- A new high-capacity transit route on SR 303 between Silverdale and Bremerton.
- New on-demand ride zones in and around Bremerton.

2.3 VISION 2050 and Regional Transportation Plan 2022–2050

PSRC is the metropolitan planning organization for the Central Puget Sound Region. PSRC develops regional plans and policies and coordinates decisions about regional growth in King, Pierce, Snohomish, and Kitsap Counties. The PSRC VISION 2050 plan is the long -range plan for growth in the Central Puget Sound Region and includes actions for local governments in support of the plan's vision. The two main components of the plan are the Regional Growth Strategy that focuses growth within designated growth centers near high-capacity transit and the Multicounty Planning Policies that provide a common policy framework for city and county planning.

The PSRC Regional Transportation Plan (RTP) is a long-range plan for transportation investments in the Central Puget Sound Region. This plan builds on and helps implement the plan for growth in the region in VISION 2050. The RTP is updated every 4 years with multimodal investments to create a safe and efficient transportation system for the region. The current RTP was adopted in 2022 and focuses future investments through 2050 in the regional transportation system to support regionwide goals in six areas: climate, access to transit, equity, safety, mobility, and lastly, local needs and future visioning. The RTP anticipates $300 billion in transportation investments over the next 28 years, with 70% dedicated to investments in local and regional public transit.

The future transit network in the RTP includes planned projects in Bremerton and investments in high-capacity transit. Planned improvements by Washington State Ferries in Bremerton are also described in the plan, but these investments are not candidate projects for PSRC funding. The current RTP describes specific candidate projects that would provide multimodal improvements on local roadways. One of the largest candidate projects in the RTP is the reconfiguration of Wheaton Way (SR 303) from Sheridan Road to Riddell Road to include BAT lanes and improve sidewalks on the corridor.

2.4 WSDOT Plans and Projects

2.4.1 SR 3 Freight Corridor

WSDOT is leading the SR 3 Freight Corridor Project to create a new route for SR 3 through portions of Kitsap and Mason Counties that would allow vehicles to travel around Belfair in unincorporated Mason County. This new route for SR 3 would maintain the existing state highway as a business loop but offer drivers and freight traffic the option to travel around, rather than through, Belfair. The new section of SR 3 would be a Limited Access Corridor with a restricted number of intersections and access points to the highway. Limiting business access and the number of intersections is expected to improve travel times along the corridor with fewer sections of the corridor with slow or stopping traffic. The project is currently in the National Environmental Policy Act (NEPA) review process and is expected to begin construction in summer 2026 and be completed in winter 2028.

2.4.2 SR 3 Gorst Area Planning and Environmental Linkages Study

In the summer of 2024, WSDOT began the SR 3 Gorst Area Planning and Environmental Linkages (PEL) Study to examine potential future designs for SR 3 near Gorst. SR 3 and SR 16 are critical to accessing the Kitsap Peninsula, and both routes experience frequent congestion in the Gorst area and are susceptible to environmental hazards. The PEL study will look at alternative designs for the SR 3 corridor to reduce congestion and make the corridor more resilient in the future. During the PEL study process, WSDOT will work with various stakeholders including the City of Bremerton to define the purpose and need for future projects along the SR 3 corridor between SR 304 and Gorst and develop design options to carry into the environmental review process. The SR 3 Gorst Area PEL Study is expected to be complete in December 2025.

3. Community and Stakeholder Engagement

3.1 Public Survey

The city surveyed community members who travel in and around Bremerton to better understand perceptions and barriers to using transportation services and to identify potential transportation improvements. The city fielded an online survey from January 19 to February 15, 2024. To recruit survey respondents, the survey team mailed invitations to a statistically valid, random sample of 5,000 households with Bremerton addresses, including some addresses outside of city limits. A total of 605 people responded to the survey. The response rate was 12.7%, and the margin of error was +/- 4%.

Most respondents (86%) lived in the city of Bremerton and traveled to or within Bremerton 4 to 7 days per week (79%) for various purposes and daily needs. Most survey respondents (78%) currently drive alone or with friends or family (68%). Respondents reported using the following modes of travel:

- 78% reported driving alone, and 68% driving together with friends or family.
- 34% reported using ferries, and 18% reported riding the bus.
- 38% reported walking, and 19% reported biking for regular trips.
- Other less common modes included ride share (8%) and carpool (7%).

Respondents were asked to identify the barriers they encountered using different modes. For driving, the most common issues reported were traffic congestion and aggressive or reckless driving. For active transportation the most common barriers reported were incomplete bicycle and pedestrian facilities, as well as dangerous driver behavior. For transit, the most common barriers were infrequent or unreliable ferry schedules and bus trips taking too long.

Survey questions also asked respondents about opportunities to improve transportation services that would motivate them to use each travel mode more. For active transportation, the most common responses were new or improved bicycle and pedestrian facilities. For bus and ferry transit, more frequent service was the most common opportunity to improve transit in survey responses. There was also broad support among those that drive regularly for adaptive or smart signals to improve congestion on Bremerton's roadways. These survey responses informed the planning process for this Transportation Technical Appendix and the ongoing Active Transportation Plan update and helped to refine the list of potential future transportation improvements.

3.2 Open House #1

The city of Bremerton hosted a virtual open house (a prerecorded narrated presentation was produced with Bremerton Kitsap Access Television or BKAT) to introduce the overall Comprehensive Plan update and the process to update the Transportation Element of the Comprehensive Plan and the city's Active Transportation Plan. The open house video was posted on the Comprehensive Plan Transportation Element webpage from January 19 to February 15, 2024. The open house narrative explained how the community can be involved in shaping the future of Bremerton's transportation by submitting comments and participating in the survey. The city's project manager, Vicki Grover, shared the study timeline including future outreach milestones, and she encouraged attendees to participate in the public survey and visit the project website for updates.

The virtual open house offered a flexible way for the city of Bremerton to introduce the project and public survey to community members. Attendees viewed the presentation and were able to leave comments through the comment box on the project website or by participating in the public survey. The city's main objectives were as follows:

- Gather input from community members about their transportation needs, concerns, and suggestions.
- Educate the broader Bremerton community about the city's Transportation Element in the Comprehensive Plan and the city's Active Transportation Plan and how they can be involved in shaping these transportation planning documents.
- Notify community members about future opportunities to provide feedback to help inform the project.

3.3 Webmap Engagement

The project team developed a draft pedestrian priority network and draft bicycle priority network based on previous plans. The priority networks highlight corridors considered high or medium priority for implementing active transportation projects over the next 20 years. The city published the draft pedestrian and bike priority networks for public engagement on a webmap where members of the public could add comments as lines or points. The draft pedestrian priority network and bicycle priority network were available for public comment from August 19 through September 9, 2024, and was refined using public input collected on the webmap and via email during that period.

The feedback collected during this engagement will play a crucial role in determining where the city focuses its investments in active transportation, and it will help shape the development of projects and programs to improve the multimodal transportation system. The city received a total of 225 comments and 8 emails and letters from the public. The input gathered during this period helped align priority network segments and potential future projects with public priorities. The pedestrian and bicycle prioritization networks are shown in Section 5.3.2.

3.4 Open House #2

The City of Bremerton hosted another virtual open house (a prerecorded narrated presentation was produced with Bremerton Kitsap Access Television or BKAT) to update Bremerton about progress on the transportation plans. The team posted the open house video on the Comprehensive Plan, Transportation Element webpage from October 2 to 16, 2024.

Bremerton hosted an in-person open house on Tuesday, October 8, 2024, at the Norm Dicks Council Chambers. City staff hosted the open house from 5 to 7 p.m. Ten community members attended the open house. Four in-person comments were collected at the in-person open house and four email comments were received that specifically referenced either the online or in-person open house.

4. Future Transportation Needs

4.1 Future Active Transportation Needs

People biking, walking, and rolling need dedicated infrastructure to get around Bremerton safely and comfortably. Current needs for active transportation facilities in the city were evaluated as part of the analysis to develop the Transportation Element of the Bremerton 2044 Comprehensive Plan. Key needs for active transportation facilities were identified through an analysis of gaps in Bremerton's pedestrian and bicycle networks. This analysis guides investments in Bremerton's transportation system that are included in the transportation capital project list.

Level of traffic stress (LTS) was the primary measure used as a preliminary analysis of Bremerton's pedestrian and bicycle networks. The methodology used for this analysis is from the WSDOT Design Manual, Chapter 1510 (September 2024). LTS is a measure used to evaluate the comfort and safety of active transportation users on roadways, considering factors such as vehicle speed, traffic volume, the number of lanes, and the presence of dedicated pedestrian and/or bicycle facilities. The LTS scale ranges from 1 to 4, with LTS 1 representing the lowest stress, suitable for users of all ages and abilities, and LTS 4 representing the highest stress, suitable only for very experienced and confident bicyclists as shown in Figure 16.

Further review of alternative methodologies used to evaluate LTS for existing and proposed bicycle and pedestrian networks in the city is under consideration. A formalized approach will be developed as a separate effort to the development of the Transportation Element.

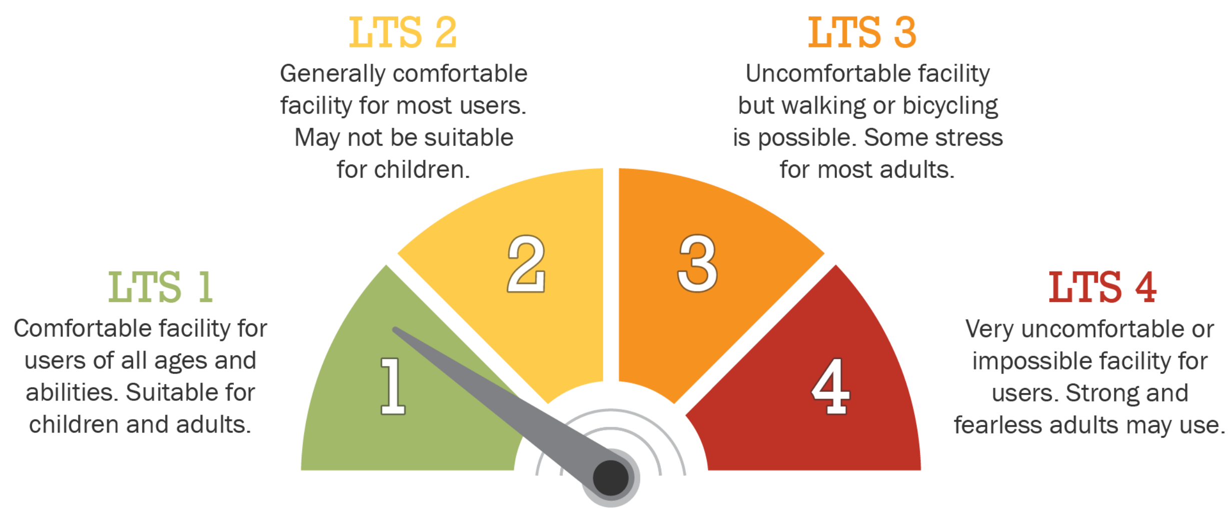


Figure 16. Level of Traffic Stress Ratings

4.1.1 Gaps in the Pedestrian Network

An analysis of pedestrian level of traffic stress (PLTS) was used to identify major roadway segments that lack sufficient pedestrian infrastructure, shown in Figure 17. Current guidelines from the Washington State Department of Transportation outlined in Chapter 15 of the 2023 WSDOT Design Manual served as a model for classification of gaps in the pedestrian network. Arterial and collector roadways in Bremerton with a PLTS rating of 3 or 4 were considered gaps in the pedestrian network. Most streets in Bremerton's downtown core were rated PLTS 1 or 2 because of existing sidewalks and roadway speeds. The city of Bremerton will develop and adopt

PLTS standards, and the process will consider a range of methodologies as part of a separate planning process.

While the PLTS thresholds in the WSDOT Design Manual consider sidewalk width, they do not factor in the conditions of the sidewalks or the grade change along the roadways. Roadways with no sidewalks—sections of Kitsap Way, West Arsenal Way, and Auto Center Boulevard—were higher stress at PLTS 3 or 4. Streets with sidewalks at a minimum width of 5 feet in areas with higher traffic volumes or posted speeds at or greater than 35 mph, including Loxie Eagans Boulevard and 11th Street, were also higher stress. The WSDOT methodology relies on target speeds; however, since target speed data was not available for all roads, posted speed limit data was used as a substitute. However, observed traffic speeds on certain roadways such as 11th Street have historically been higher than the roadway's posted speed limit. Other roadways including Corbet Drive and sections of 15th Street west of N Lafayette Avenue do not have existing sidewalks and can be a challenging pedestrian environment; they are rated LTS 2 because of posted travel speeds, consistent with the WSDOT methodology. The Warren Avenue (SR 303) Bridge, currently in design for active transportation improvements, was ranked PLTS 4 due to sidewalk widths less than 4 feet.

4.1.2 Gaps in the Bicycle Network

An analysis of bicycle level of traffic street (BLTS) was used to identify major roadway segments that lack sufficient bicycle infrastructure. Current guidelines from WSDOT served as a model for classification of gaps in the bicycle network. Arterial and collector roadways in Bremerton with a BLTS rating of 3 or 4 were considered gaps in the bicycle network. BLTS was evaluated for collector and arterial roadways within the city limits of Bremerton as shown in Figure 18. Most arterial or collector roadways in Bremerton rated as BLTS 3 or 4 due to a lack of dedicated bicycle facilities. State routes without bike lanes—including SR 303 and segments of SR 304/Burwell Street—were rated as high as BLTS 4. SR310/Kitsap Way has bike lanes and is rated BLTS 2. Roadways in East Bremerton and near Kitsap Lake generally rated as more comfortable and lower stress due to lower posted speed limits and traffic volumes. The city of Bremerton will develop and adopt BLTS standards, and the process will consider a range of methodologies as part of a separate planning process.

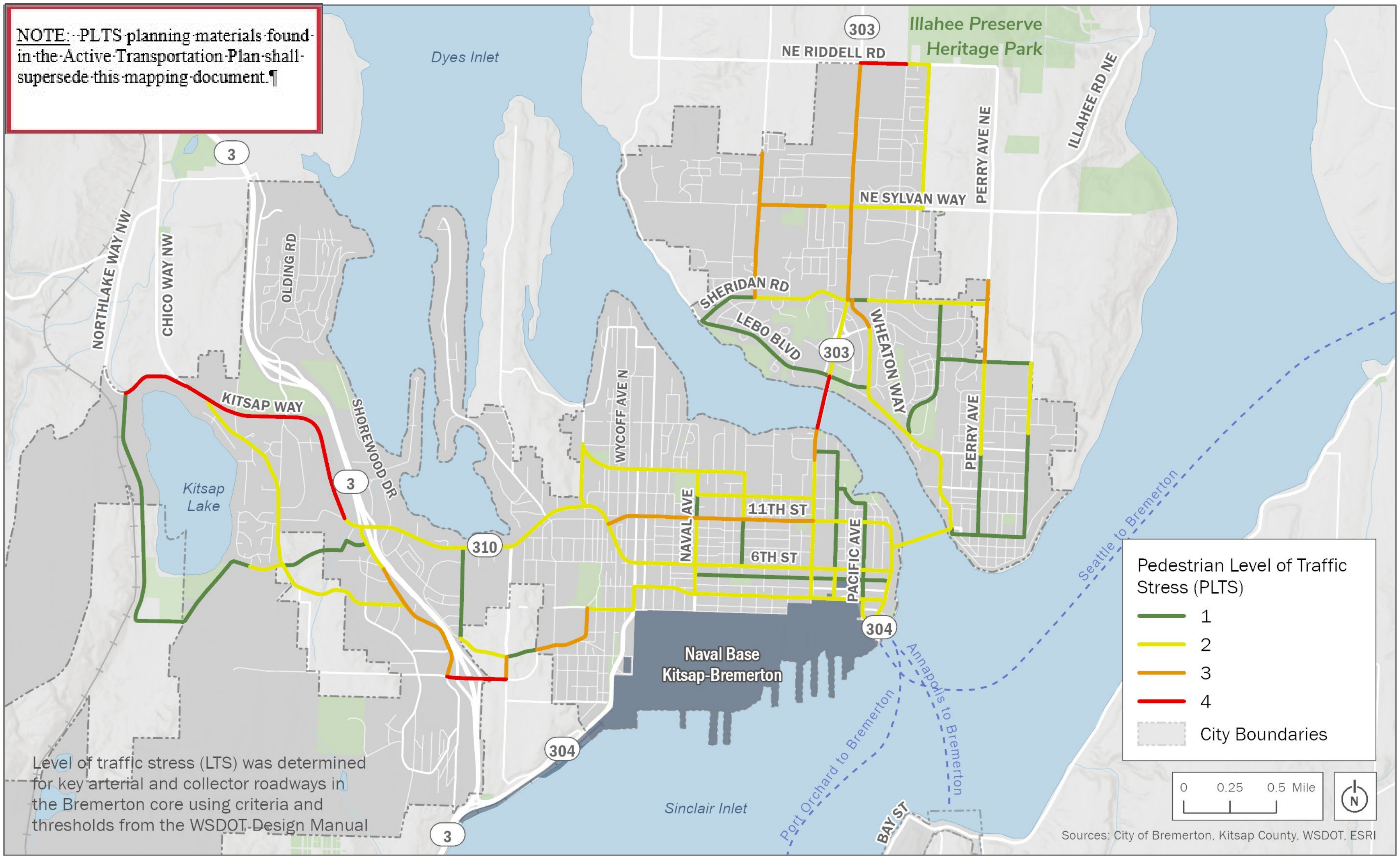


Figure 17. Existing Pedestrian Level of Traffic Stress (PLTS) on Arterial and Collector Roadways

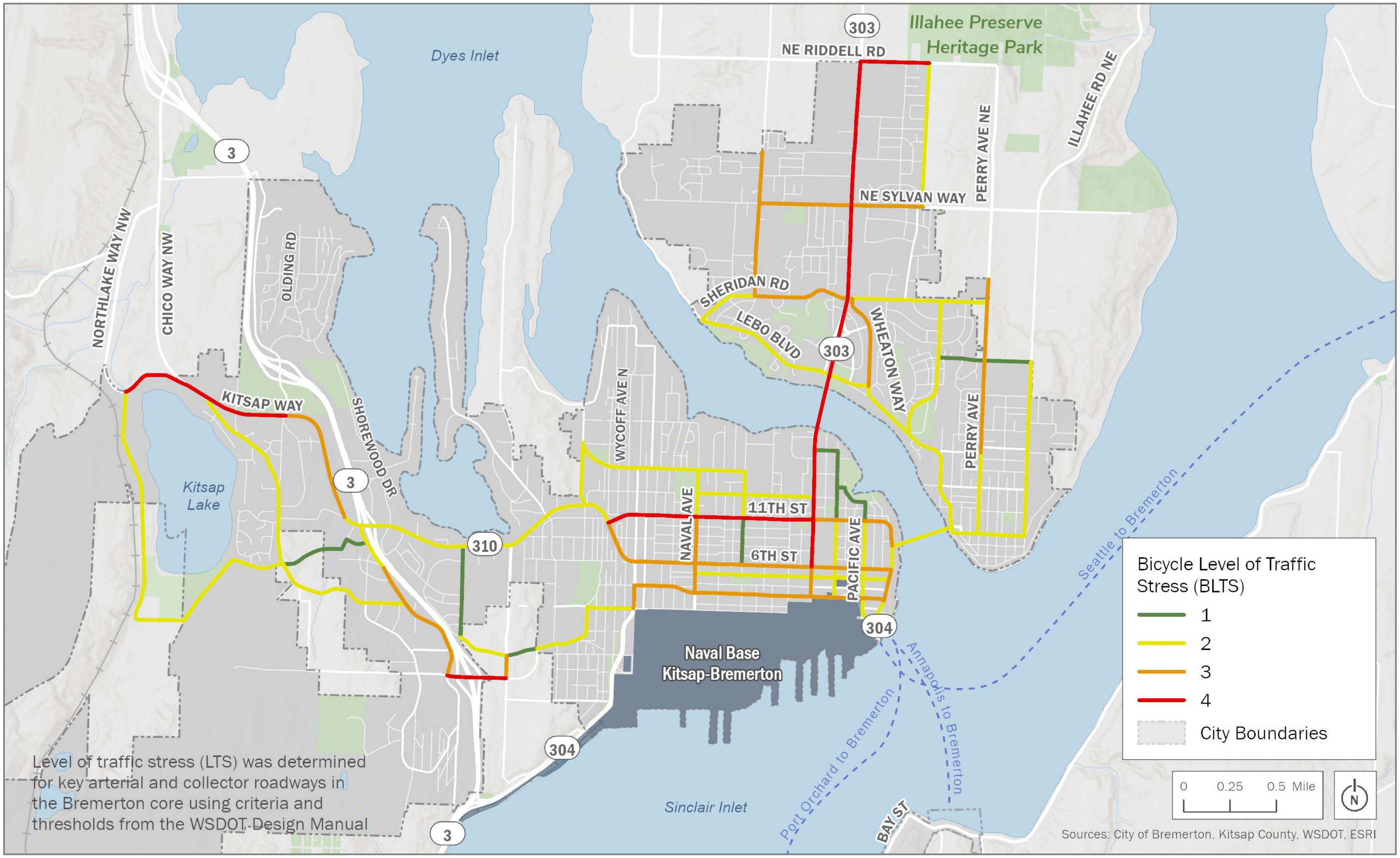


Figure 18. Existing Bicycle Level of Traffic Stress (BLTS) on Arterial and Collector Roadways in Bremerton

4.1.3 Active Transportation Demand

- Active transportation demand refers to the desire and need for nonmotorized modes of travel, encompassing both the level of interest and use of these modes within a community. Understanding active transportation demand helps inform infrastructure planning, policy decisions, and initiatives aimed at the implementation of active transportation facilities where they are needed the most, with a goal of minimizing auto-dominance on streets by working to further develop complete streets with multimodal functions.

. Racial and social equity are included in the planning process when identifying where active transportation facilities will be built. These objectives are included in the Prioritization Matrix. The matrix is included in Attachment A. This prioritization process includes a category titled, Equity and the Environment. The scoring for this category is from the Department of Health's disparities mapping dashboard.

The active transportation demand analysis focused on identifying and evaluating key destinations for people walking, bicycling, taking transit, or utilizing other forms of nonmotorized travel. Locating active transportation destinations within Bremerton's city limits can inform the existing demand and existing connections and opportunities for improvement. This analysis serves as a foundation for developing strategies that promote walking, cycling, and other sustainable modes of transportation.

A total of 315 active transportation destinations were identified within the city limits of Bremerton. Destinations included a variety of community resources designed to meet the needs of the population. These include civic buildings that serve as hubs for local government and public services, health facilities that provide essential medical care and wellness programs, schools, and parks that offer recreational and green spaces for relaxation and outdoor activities. Destinations also include transportation connections such as transit centers, bus stops, and ferry terminals. Beyond these, other critical community resources, such as senior centers or public libraries, were also included to enhance overall quality of life and support the well-being of residents. Table 8 outlines all facilities identified as destinations for active transportation users.

Table 8. Active Transportation Demand

Category	***Destinations***
Civic buildings	Government buildings, law enforcement, NBK-BR
Community resources	Museums, public library, Red Cross, senior center, PSIC industrial growth center, Bremerton Foodline
Health resources	Urgent care clinic
Park	Parks
School	Schools, Olympic College
Transportation	Transit stops, pedestrian overpass, NBK-BR gate access, airport, ferry, park and ride

NBK-BR = Naval Base Kitsap Bremerton; PSIC = Puget Sound Industrial Center

Areas with high active transportation demand were located based on higher concentrations of active transportation destinations. Notably, downtown and East Bremerton exhibited high demand due to their denser populations and greater availability of civic services. The prevalence of transit stops along collector and arterial roadways in Bremerton's core also influenced concentrations of high demand observed in these areas. Figure 19 shows areas of high active transportation demand in and around Bremerton.

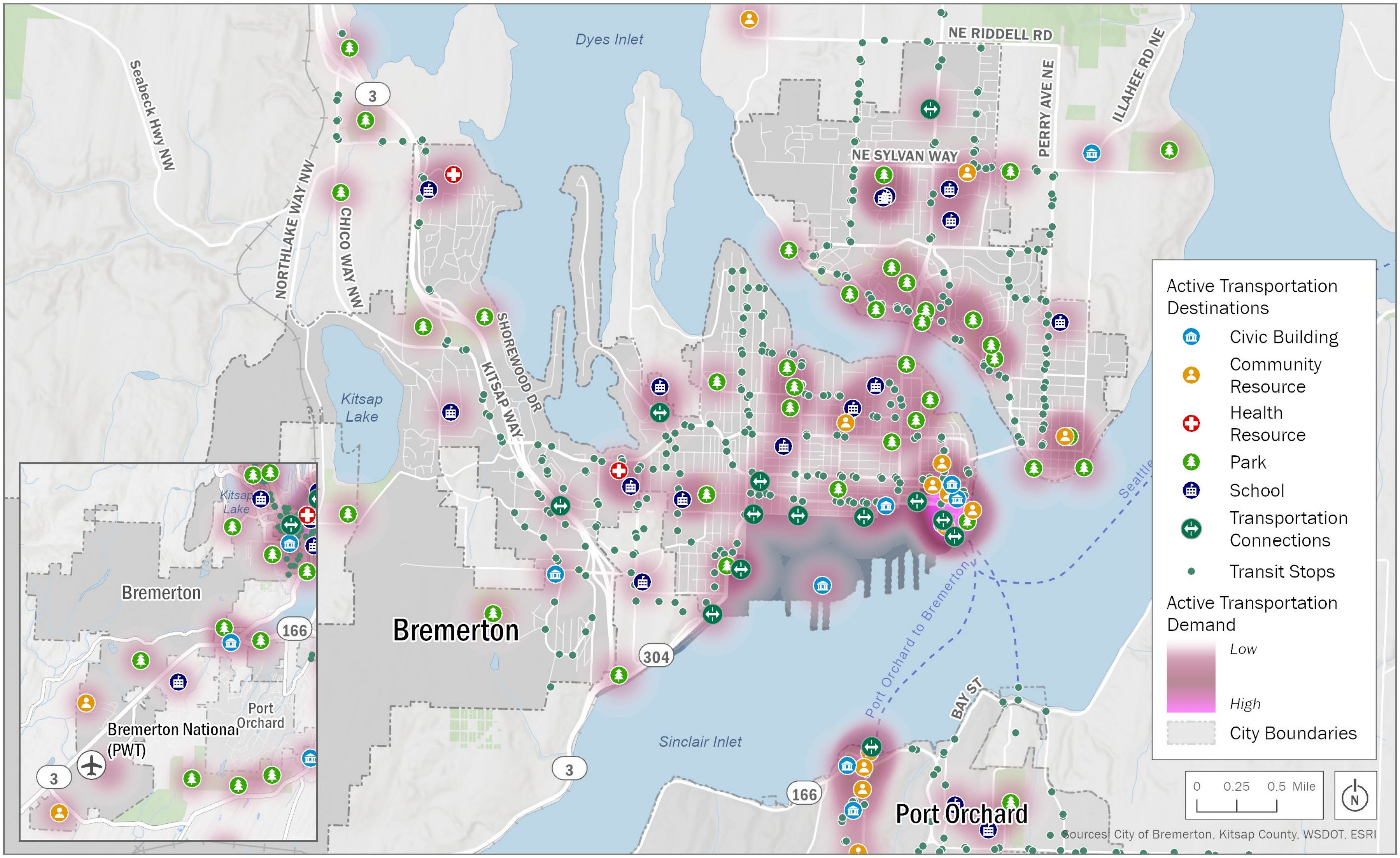


Figure 19. Active Transportation Demand

4.2 Future Vehicular Network

4.2.1 Future Traffic Operations

Future traffic volumes were forecast for 2030 and 2044 using the Bremerton travel demand model, updated in 2023 to reflect the latest development inventory, driver behavior, trip generation rates, and modeling procedures. The model was validated against observed traffic counts and shows a strong correlation with actual travel behavior in both the morning (AM) peak and evening (PM) peak hours of travel. In the validation process, 2023 travel demand model results were compared with 2023 observed traffic; there was a 0.98 correlation coefficient in the morning peak and a 0.96 correlation coefficient in the evening peak between observed traffic and forecast traffic for 2023. This indicates that modeled traffic volumes very closely reflect observed traffic counts. This model represents the best available tool to forecast travel demand in and around Bremerton. Signalized and stop-controlled intersection operations were analyzed in Synchro 11 software using Highway Capacity Manual 6th Edition methodologies. Roundabout intersections were analyzed in Sidra Intersection 9.1 software using the Sidra capacity model and WSDOT Sidra Policy Setting.

Anticipated future deficiencies in 2030 and in 2040 based on forecast growth from Bremerton's assigned housing and employment growth targets and the land use changes considered in the Bremerton 2044 Comprehensive Plan were identified based on intersection LOS. LOS is a qualitative description of traffic operations typically expressed as a letter score from LOS A to LOS F as described in Section 1.6. The analysis of 2030 and 2044 traffic operations assumed the construction of two transportation improvement projects planned by the city:

- **Naval Avenue Rechannelization:** This project will re-channelize Naval Avenue from 1st Street to 15th Street to provide two through lanes and a center turn lane in addition to safe active transportation facilities.
- **6th Street Active Transportation Improvements:** This project will re-channelize 6th Street from 11th Street and Kitsap Way to Washington Avenue to provide two through lanes and a center turn lane in addition to safe active transportation facilities.

Current LOS thresholds are established by the city for municipal roads and by WSDOT for designated state routes. In Bremerton, the minimum standard for traffic operations is LOS E for intersections on city roadways. WSDOT LOS thresholds are LOS D for intersections on roads designated as Highways of Statewide Significance (HSS) and LOS E/Mitigated for intersections on state routes that are not classified as HSS. LOS E/Mitigated identifies locations where congestion must be mitigated when peak hour LOS falls below LOS E. A detailed evaluation of future LOS at all study intersections is included in Attachment C.

4.2.1.1 2030 Traffic Operations

Four intersections within city limits are expected to operate below their minimum adopted LOS standard by 2030 as shown in Table 9. Three of the intersections have existing deficiencies as noted in Section 1.6 and are expected to remain deficient in 2030. Forecast growth through 2030 is not expected to result in additional deficiencies based on applicable LOS standards from the City and WSDOT.

Table 9. Intersections with Anticipated Deficiencies by 2030			
Intersection	***Deficiency Horizon***	***2030 AM Peak LOS (delay)***	***2030 PM Peak LOS (delay)***
Kitsap Way (SR 310) & Corbet Drive	2030	D (27)	F (183)
Loxie Eagans Boulevard & SR 3 Southbound Ramps	2023	F (109)	F (>300)
SR 3 & Imperial Way	2023	E (65)	F (75)
Warren Avenue (SR 303) and Burwell Street (SR 304)	2030	D (35)	E (56)

4.2.1.2 2044 Traffic Operations

Seven intersections within city limits are anticipated to operate below their minimum adopted LOS standard by 2044. These include existing (2023) deficiencies at three locations. Anticipated deficiencies and forecast LOS at each intersection are summarized in Table 10 and shown in Figure 20 and Figure 21.

Table 10. Intersections with Anticipated Deficiencies by 2044			
Intersection	***Deficiency Horizon***	***2044 AM Peak LOS (delay)***	***2044 PM Peak LOS (delay)***
Kitsap Way (SR 310) & SR 3 Southbound Off-Ramp	2044	D (39)	F (86)
Kitsap Way (SR 310) & Marine Drive	2044	E (62)	E (72)
Kitsap Way (SR 310) & Corbet Drive	2030	F (262)	F (>300)
Warren Ave (SR 303) & Burwell St (SR 304)	2030	D (41)	F (82)
Wheaton Way (SR 303) & Sheridan Road	2044	D (46)	F (87)
Loxie Eagans Boulevard & SR 3 Southbound Ramps	2023	F (>300)	F (>300)
SR 3 & Imperial Way	2023	E (65)	F (75)

Seven intersections in Bremerton are anticipated to operate below their minimum adopted LOS standard by 2044. While these intersections satisfy overall intersection LOS standards, individual intersection approaches or lanes may operate over capacity during periods of peak travel demand. Additional capacity at these intersections is not required to maintain transportation concurrency at these locations, but monitoring traffic operations at these intersections with expected growth should be incorporated into the city's concurrency management process. Forecasted traffic operations at these intersections in 2044 are described in Table 11.

Table 11. Intersections at Traffic Operations Standard by 2044			
Intersection	***Analysis Year***	***2044 AM Peak LOS (delay)***	***2044 PM Peak LOS (delay)***
11th Street & Pacific Avenue	2044	B (12)	E (39)
Kitsap Way (SR 310) SR 3 Northbound Ramps	2044	B (18)	D (36)
Kitsap Way (SR 310) & National Avenue	2044	C (23)	D (40)
Warren Ave (SR 303) & 11th Street	2044	C (31)	E (59)
Wheaton Way (SR 303) & Riddell Road	2044	C (29)	E (60)
Burwell Street (SR 304) & Naval Avenue	2044	C (20)	D (52)
SR 3 Southbound Ramps and Austin Drive	2044	C (23)	D (28)

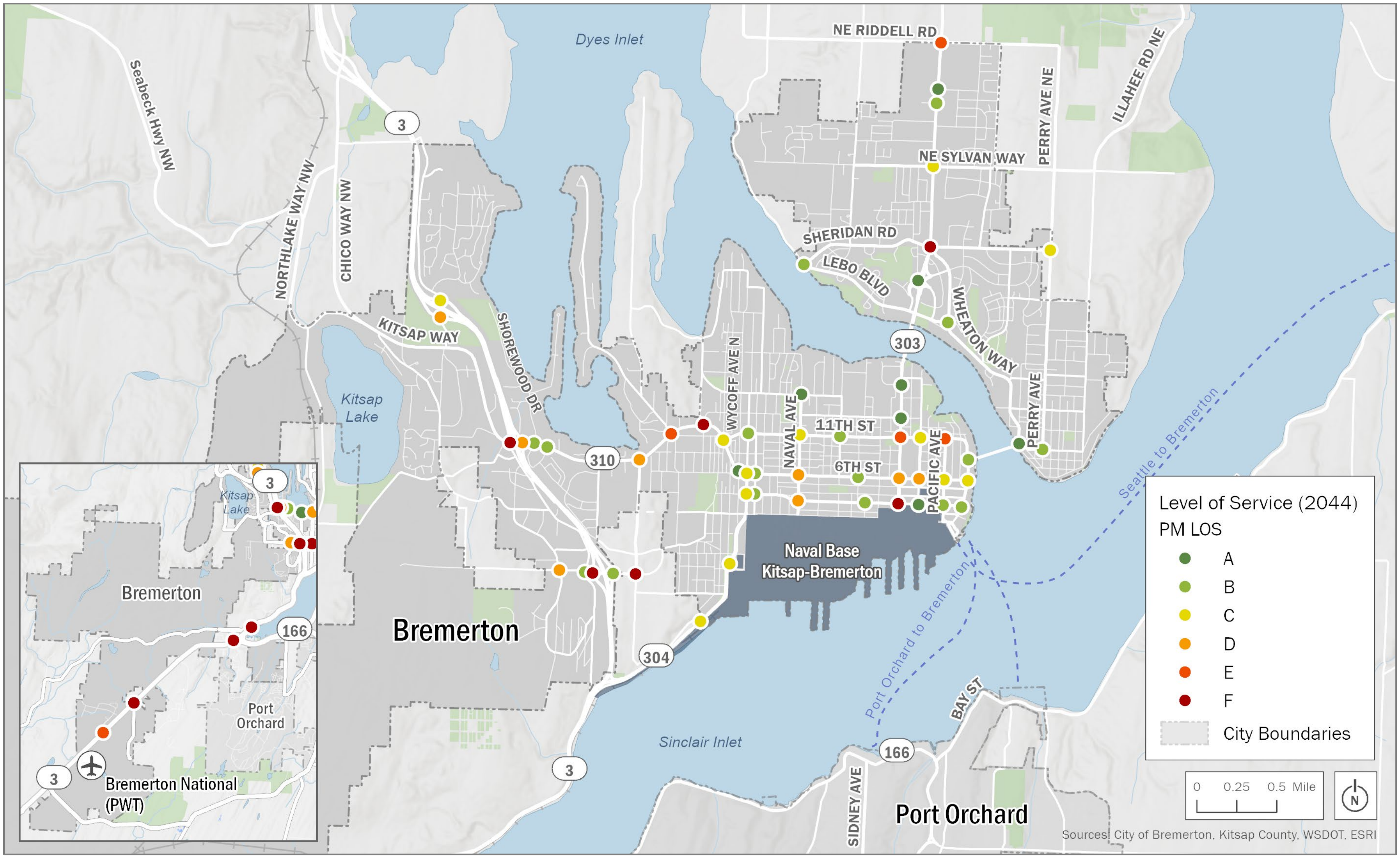


Figure 20. PM LOS (2044)

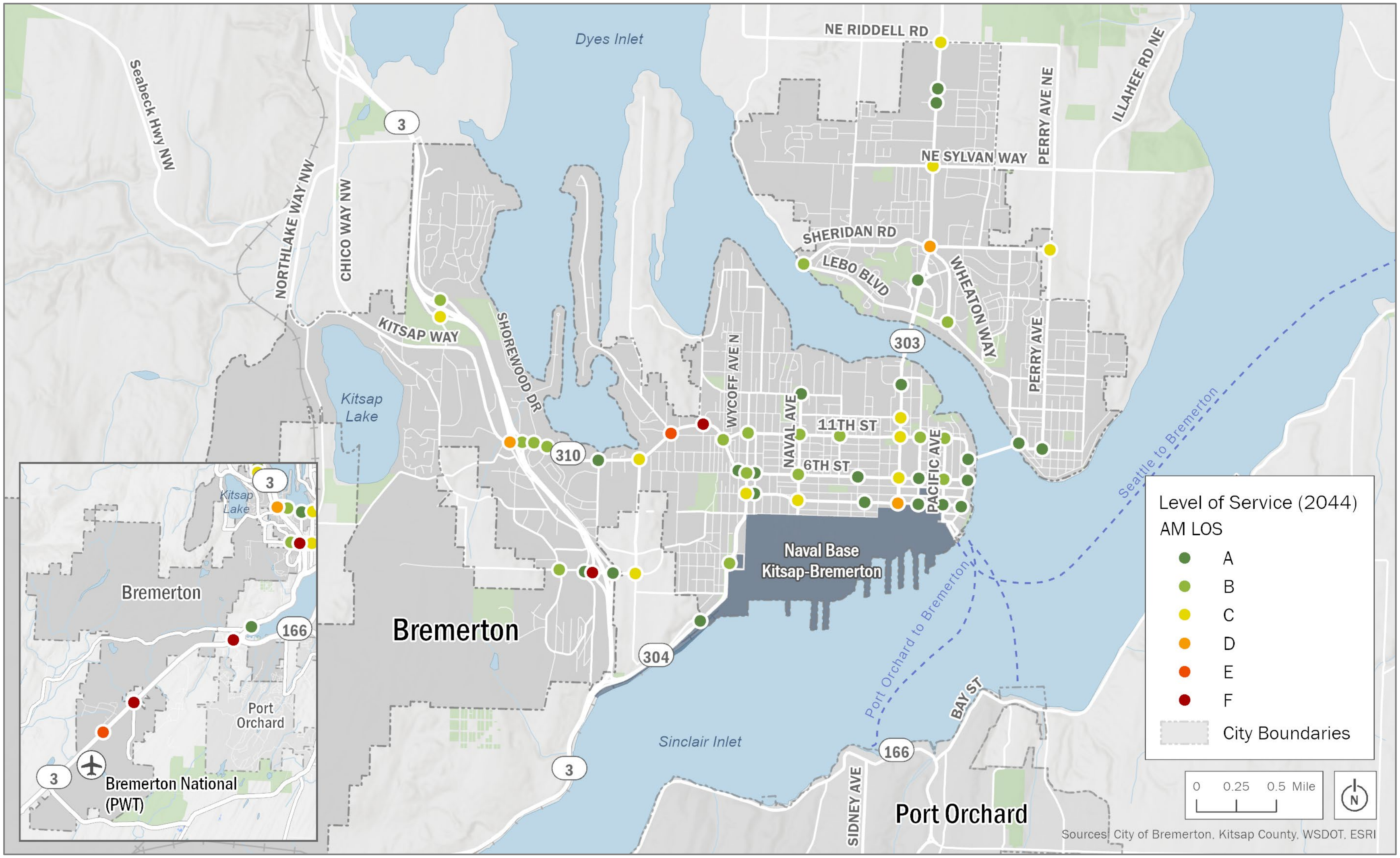


Figure 21. AM LOS (2044)

4.3 Mode Share in PSRC Designated Centers

4.3.1 Current and Historical Mode Share

There are two regional centers in Bremerton: The Downtown Bremerton regional growth center and the PSIC manufacturing/industrial center (MIC). PSRC collects data on travel patterns in most designated regional centers through the regional household travel survey and commute mode estimates from the Soundcast travel model. The PSRC regional growth center profiles provide the mode of travel used to commute to work for the Downtown Bremerton regional growth center for 2012, 2017 and 2022. Modes of travel for work-related trips in Downtown Bremerton are shown in Table 12.

Table 12. Mode of Travel Used for Work Trips for Residents of Downtown Bremerton Regional Growth Center

Commute Mode	*2012*	*2017*	*2022*
Drive Alone	17.4%	25.2%	26.0%
Carpool	6.6%	0.3%	4.5%
Transit	9.6%	12.3%	4.3%
Bike	0.0%	0.3%	0.4%
Walk	37.4%	58.3%	59.0%
Work from Home	28.0%	2.8%	5.2%
Other	1.0%	0.8%	0.5%

Source: PSRC Regional Growth Center Profiles, 2024.

PSRC Soundcast estimates from the 2018 activity-based model—available in the PSRC profile for the Downtown Bremerton Urban Growth Center—estimate that 63.4% of commuters to the Growth Center drove alone and 36.6% of commuters used other modes.

PSRC estimated the mode share for commuters traveling to the PSIC area using the Soundcast Activity Based Model. The travel mode for work trips was estimated using Replica, a transportation and land use data platform that aggregates information on travel behavior. Historical travel data and estimates from Replica are available for fall and spring from 2019 onward. Mode-share data was consistent with PSRC estimates from the Soundcast model for 2018, which showed an estimated 73.4% of commute trips were drive-alone trips and 26.4% were made by other modes.

To compare pre- and post-pandemic travel behavior in the PSIC manufacturing/industrial center, Replica estimated the trips to work by mode ending in the two census block groups with boundaries that include the PSIC area shown in Figure 22. This includes some surrounding areas outside of PSIC, such as residential and commercial areas in Gorst, nearby areas of Bremerton and unincorporated Kitsap County. Modes of travel for work-related trips in PSIC and the surrounding area are listed in Table 13.

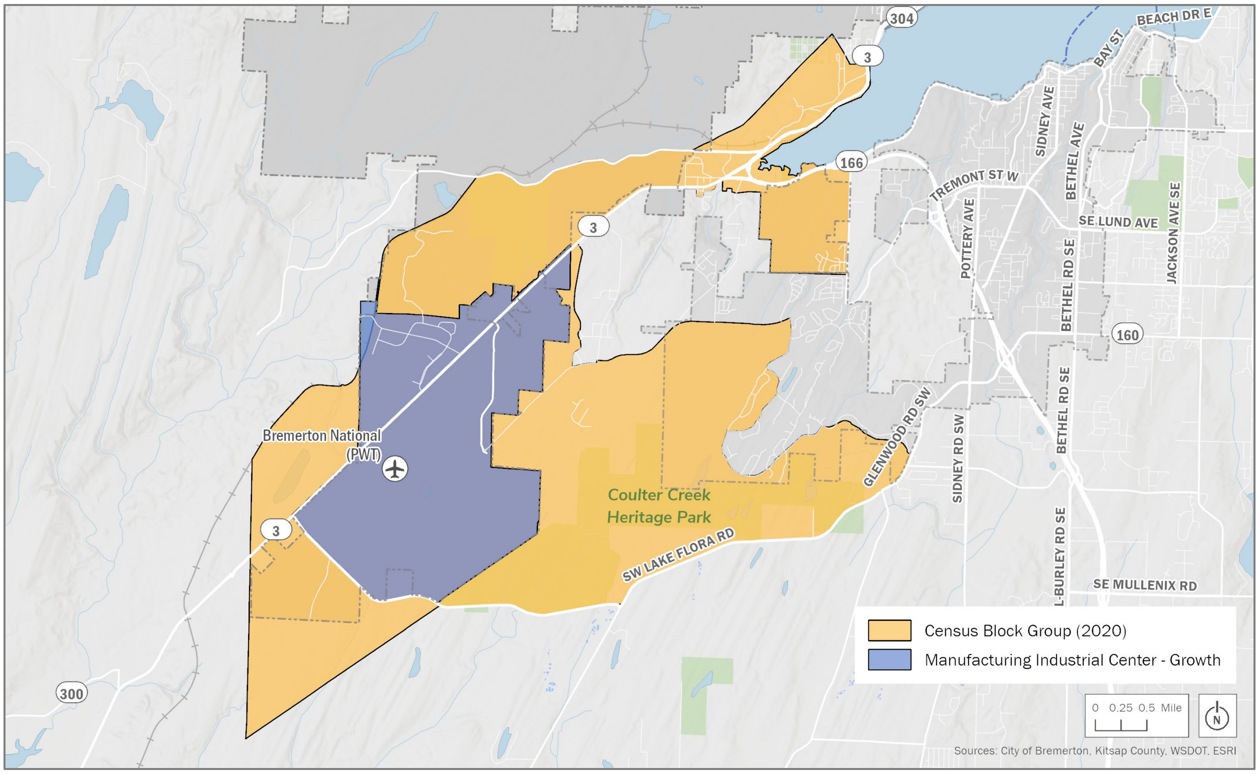


Figure 22. Census Block Groups for PSIC Area Commute Trip Analysis

Table 13. Mode of Travel Used for Work Trips in and around PSIC		
Commute Mode	***Fall 2019***	***Spring 2024***
Drove Alone	70.2%	74.1%
Carpool	24.3%	22.6%
Transit	0.0%	0.1%
Taxi	0.3%	0.0%
Bike	0.7%	0.1%
Walk	1.3%	1.3%
Other	3.2%	1.9%

In the future, carpooling and driving alone are expected to account for a larger share of commute trips in PSIC, while walking would be a more common mode of travel for work trips in Downtown Bremerton. This is primarily a result of the land uses, development patterns, and planned growth in Bremerton's PSRC -designated regional centers and of the communities from which people are accessing employment in Downtown Bremerton and PSIC. Walking trips recorded in 2019 and 2024 likely include trips to work coming from outside of the PSIC area such as Gorst, Sunnyslope, and nearby areas of Kitsap County that have a mix of residential and non-residential land uses.

4.3.2 Mode-Share Goals

Downtown Bremerton and surrounding areas in the city of Bremerton are expected to accommodate a mix of housing and employment growth, with employment concentrated in Downtown Bremerton. Downtown Bremerton is currently served by more frequent transit routes and includes the Bremerton Ferry Terminal with regular service to and from Seattle. In PSIC, growth will be primarily in industrial employment, although some nearby areas of Bremerton and unincorporated Kitsap County will continue to accommodate some residential and commercial growth. PSIC currently has limited transit service along Mason Transit routes. The growth patterns and transit service expected in each of these areas helped inform the City's goals in both centers in the future (see Table 14).

Table 14. Mode-Share Goals for Work and Non-Work Trips in Downtown Bremerton and PSIC

Commute Mode	*Downtown Bremerton*	*PSIC*
Drive Alone	34%	55%
Carpool	30%	35%
Transit	10%	8%
Bike/Walk/Work from home/Other	26%	2%

5. Projects and Implementation

5.1 Capital Projects and Programs

Capital projects were identified from a range of previous planning efforts including corridor or area plans and studies, and subarea plans; all of which have specific identified and prioritized transportation investments. Some additional projects were developed and added to future capital projects and programs based on public engagement for operational needs. This Transportation Technical Appendix consolidates the recommended projects and programs from previous planning efforts into one long-term project list. These projects have been prioritized for funding and implementation based on criteria described in Section 5.3.1.

The plans and studies incorporated into this document and the list of future transportation investments include, but are not limited to the following:

- 2023 Joint Compatibility Transportation Plan.
- 2021 SR 303 Corridor Study.
- 2016 Comprehensive Plan.
- 2007 Non-Motorized Transportation Plan.
- 2007 Downtown Subarea Plan, updated in 2024.
- 2012 Puget Sound Industrial Center Subarea Plan, Amended 2018.
- 2022 Harrison Heights Subarea Plan.
- 2006 East Park Subarea Plan.
- 2006 Bay Vista Subarea Plan.
- 2021 Charleston Areawide Planning Study.

The list of future transportation investments draws from these previous planning documents as well as from analysis and public engagement for the Transportation Element and Active Transportation Plan. Future transportation investments are described in this document as transportation projects and programs.

- Projects generally include larger improvements along corridors or at specific intersections and may include right-of-way acquisition.
- Programs typically include smaller projects that can be funded annually and include locations to be implemented together. The City's operations staff would implement these programs to help achieve Bremerton's goals and vision for the future of the transportation system.

5.2 Financial Forecasts and Revenue Sources

5.2.1 Revenue Sources and Projections

The GMA requires the city to include a realistic financing plan (for the six-year period) and make adjustments to the plan if funding is inadequate. Capital facilities are important because they support the growth envisioned in the City's Comprehensive Plan. GMA requires that all capital facilities have "probable funding" to pay for capital facility needs, and that jurisdictions have capital facilities in place and readily available when new development comes in or must be of sufficient capacity when the population grows, particularly for transportation (concurrency) or for services deemed necessary to support development.

Growth, LOS and MMLOS standards, and a funded capital improvement program are to be in balance. In the case where the LOS or MMLOS cannot be met by a particular service or facility, the jurisdiction could do one of the following: 1) add proposed facilities within funding resources, 2) reduce demand through demand management strategies, 3) lower LOS or MMLOS standards, 4) phase growth, or 5) change the land use plan.

If the anticipated funding for the needed capital facilities falls short, the GMA requires a reassessment of the Land Use Element to determine what changes needed to be made. When funding cannot keep pace, Bremerton must make decisions about whether to construct new capital or to lower level of service standards. The analysis attempts to create as realistic of a picture as possible, basing assumptions on historical data and stated City policy. The revenue analysis of the Capital Facility Plan supports the financing for providing facilities and services, as required by RCW 36.70A.070(3)(d). Revenue estimates, using assumptions that are based on historical trends, were used to represent a realistic expectation for revenue that may be available for capital funding.

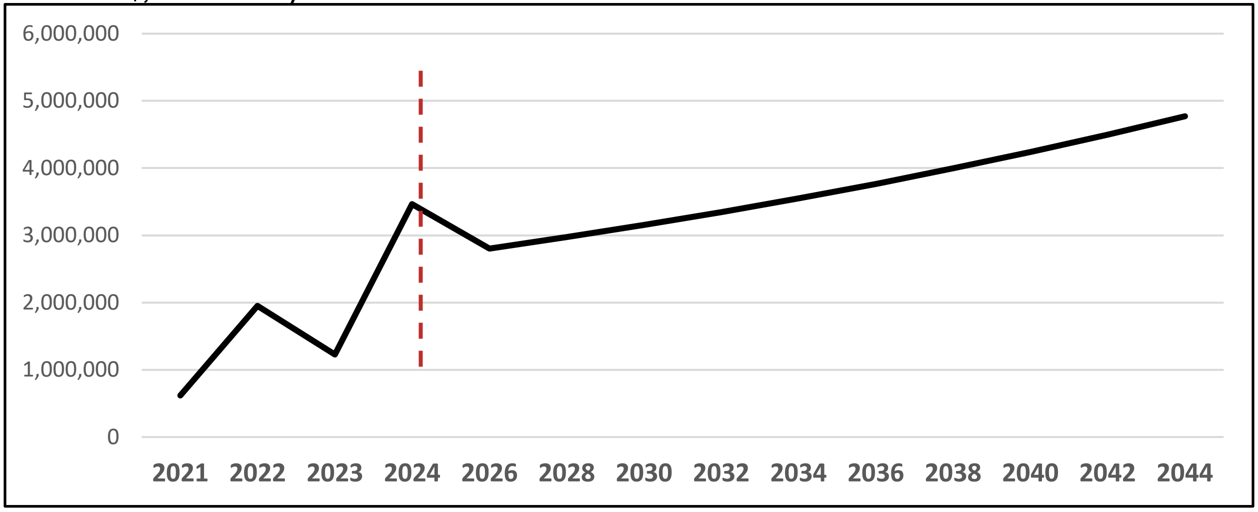
The revenue analysis provides an approximate, and **not exact, forecast of future revenue sources.** The numbers projected in this analysis are for planning purposes and cannot account for sensitivities such as local, state and federal policy, economic trends, and other factors.

Estimated future revenues have been projected for the 2024-2044 planning period in year of expenditures dollars (YOE$). The revenue analysis is grouped according to the following categories:

- **Dedicated Capital Revenues**. Dedicated revenues are required by law to be used for certain types of capital spending. Dedicated capital revenues in Bremerton include grants and General Facility Charges.
- **Potential Policy Options and Other Funding Sources**. There are policy tools and other sources available to fund capital projects.
- **General Capital Revenues**. Those revenues under the category of general capital revenues are required by law to be used for capital projects. The general capital revenues in Bremerton include Real Estate Excise Tax I and II.
- **Transportation Grants**. Grants are an important funding source for transportation capital projects. The city has ability to compete for federal, state and regional transportation grants.

Figure 23 shows the total state and federal historical grant revenues and projected revenues. An average annual dollar amount is assumed in each year for this analysis. However, in reality these dollars will vary greatly from year-to-year and will likely resemble the trend of peaks and valleys shown in historical data. While using an annual average does not fully represent the City's future receipt of grant dollars, it approximates how many total dollars may be received over the planning period.

Figure 23. Annual Bremerton Transportation Grant Revenues Allocated for Capital Projects (2021 - 2044 YOE$, in millions)



Source: City of Bremerton, 2024

Table 15 summarizes projected revenues for the planning period as well as two subtotal time periods.

Table 15. Projected Transportation Grant Revenues for Capital Projects (2025-2044 YOE$)

Transportation Grants	*Subtotal 2025-2031*	*Subtotal 2032-2044*	*Revenue Total 2025-2044*
Estimated Revenues	$24,837,000	$52,264,000	$77,101,000

Source: City of Bremerton, 2024

Approximately $87 million may be available for transportation-related capital projects over the next 20 years, including a 2025 beginning fund balance of $3.6 million.

Table 16. Projected Dedicated Transportation Revenues Allocated for Capital

Transportation Grants	*Subtotal 2025-2031*	*Subtotal 2032-2044*	*Revenue Total 2025-2044*	*Total with 2025 Fund Balances*
Estimated Revenues	$24,837,000	$52,264,000	$77,101,000	$80,701,000

Source: City of Bremerton, 2024

5.2.2 Other Potential Funding Sources

The City of Bremerton currently has limited dedicated funding for transportation projects and programs. In the future, the city will continue to explore other funding sources described in this section to implement projects.

Transportation Impact Fees: Impact fees are one-time charges assessed by a local government on new development projects to help pay for public capital facilities projects that will directly address capacity improvements (e.g., concurrency projects) required, due to increased demand for services created by that development. Impact fees are authorized in RCW 82.02.050-110 and WAC 365-196-850 under GMA and allow fees to be imposed for transportation improvements including roadway and multimodal improvements. These projects must be addressed in the Comprehensive Plan, and jurisdictions typically use the funds for multimodal commuting facilities including sidewalks, bike lanes, multiuse paths, and roadways in public right-of-way. Bremerton is unique in Washington State in that its municipal code currently does not allow for collection of transportation impact fees.

General Obligation Bonds: A general obligation bond is a bond issued by the taxing district that uses a tax levy to pay for the interest and principal on the bonded debt. These are authorized as a type of excess levy included in RCW 84.52.056. General obligation bonds are used to pay for long-term improvements that can include transportation improvements. To issue a general obligation bond and the tax to cover the bonded debt, the taxing district must receive voter approval.

Local Improvement Districts: Local improvement districts are a tool to finance capital improvements which primarily benefit property owners who pay to fund those improvements. Local improvement districts are formed by cities with the approval of both the city and local property owners within the district and are governed by state law in RCW 35.43 and RCW 35.56. The cost of the improvements is paid for over time through special assessments on the properties that would directly benefit from the public improvements. Special assessments are typically based on a mathematical assessment (e.g., linear feet of frontage or property area) or special benefit analysis based on an estimate of property value appreciation as a result of the improvements.

Increased Car Tab Fees: Since 2012, Bremerton has assessed a $20 fee with renewal of vehicle tabs to fund the City's Transportation Benefit District, and this fund source generates approximately $600,000 per year. Transportation Benefit Districts can impose a fee of up to $50 per vehicle without voter approval and up to $100 per vehicle with voter approval; however, there are requirements for incremental increases up to $50. Vehicle fees can be increased to $40 without voter approval if a $20 fee has been in place for at least 24 months. Vehicle fees can be increased to $50 without voter approval if a $40 fee has been in place for at least 24 months. Increases over $40 have additional noticing requirement and may be subject to referendum. Other jurisdictions in Washington such as Bainbridge Island, Des Moines, and Edmonds have fees of $40 per vehicle. It should be noted that since the Transportation Benefit District fee is a flat fee per vehicle, the revenue is generally stagnant and does not increase with inflation.

Sales Tax: Sales tax is another common funding source for Transportation Benefit Districts, with a sales and use tax of up to 0.3% authorized under RCW 82.14.0455 and RCW 36.73.040(3)(a). As of July 2022, a 0.1% sales and use tax can be imposed by a majority vote of the governing board if the Transportation Benefit District includes the entire jurisdiction. Larger sales and use taxes to fund the Transportation Benefit District would require voter approval.

5.3 Future Transportation Investments

5.3.1 Project Prioritization

Conceptual transportation investments developed as part of the city's previous planning efforts and through analysis and public engagement for this Transportation Technical Appendix were consolidated into a single set of projects. Projects and programs include the consolidated set of proposed improvements, as refined by input from the public on the priority networks. Planning-level cost estimates (PLCE) for potential future projects were compiled from previous planning documents where available and escalated to 2024 dollars/costs. The project team developed new planning-level cost estimates for projects without cost information and are based on conceptual design or project descriptions. Transportation projects referenced in multiple plans or that included duplicative elements were consolidated where possible. Detailed project sheets for capital projects selected at random to provide a range of project types, priority, and potential cost are in Attachment A. The city of Bremerton's remaining transportation capital projects will have project summaries and design concepts to be completed at a later date.

161 conceptual projects and programs were evaluated and scored along criteria based on six of the city's transportation priorities that align with the goals and policies in the Transportation Element. Other remaining projects were not flagged for prioritization because they are programmatic (e.g., the sidewalk program). Prioritization criteria and scoring for projects included in the 20-year project list are summarized in Table 17.

Table 17. Prioritization Criteria

Category	*Criterion*	*Score*	*Score Definition*
1. Safety and Security	Is the project located in an area with a history of serious or fatal crashes?	0	Project location has no recent crashes (past 5 years) or identified safety concerns.
		5	Project location has one or more crashes of any type and severity (past 5 years).
		10	Project location has one or more fatal/severe injury collisions and/or any bike/pedestrian -involved collisions (past 5 years).
	Does the project improve safety of the transportation network?	0	Project does not specifically address safety concerns and no citizen comments.
		10	Project addresses and improves known safety issue and addresses citizen comments.
2. System Preservation and Major Maintenance	Does the project upgrade or maintain existing infrastructure?	0	Project includes new infrastructure where none existed, i.e., new roadway.
		10	Project includes reconstruction of a roadway, crossing enhancement, new technology.
		20	Project includes preservation of a roadway, i.e., grind and overlay.
3. Complete Streets and Accessibility	Does the project include a dedicated facility for bicyclists or pedestrians?	0	Project does not include bicycle or pedestrian infrastructure.
		1	Project includes either bicycle or pedestrian infrastructure built to minimum City standards.
		3	Project includes both bicycle and pedestrian infrastructure that meets or exceeds City standards.
	Does the project close an identified network gap for walking and biking networks?	0	Project does not close a gap or extend existing infrastructure.
		3	Project includes facilities that completes an active transportation gap or extends infrastructure for either bicyclists or pedestrians.
	Is the project on the bicycle or pedestrian priority network?	0	Project is not on the priority network.
		1	Project is on the priority network.
		3	Project is on the high priority network.
	Does the project expand multimodal access to key active transportation destinations?	0	Project does not include bicycle or pedestrian facilities within ¼ mile of key active transportation destinations.
		3	Project includes both bicycle and pedestrian facilities within ¼ mile of key active transportation destinations.

Table 17. Prioritization Criteria			
Category	*Criterion*	*Score*	*Score Definition*
	Does the project include transit improvements?	0	Project does not include transit infrastructure improvements or accommodation.
		1	Project does include minor transit infrastructure improvements or accommodation, i.e., coordination with transit for future bus stops and shelters, construction of pads for bus stops.
		3	Project includes construction of improvements for safety at or near bus stops, i.e., curb bump-outs, mid-block pull-out stops, bus island, sidewalks connecting to bus stops, etc…
4. Concurrency	Does the project meet existing or future concurrency needs?	5	The project addresses long-term deficiencies (20 years)
		15	The project addresses existing or short-term deficiencies (6 years)
5. Efficient Mobility	Does the project provide efficiency and/or reliability for transit? (Including ferries)	0	Project does not include transit efficiency or reliability improvements.
		5	Project includes transit efficiency and reliability improvements, i.e., builds a rapid transit lane.
	Does the project address existing congestion?	0	Not considered an area of existing congestion.
		5	The project will reduce general delay/congestion, i.e., adaptive signal project increasing roadway capacity.
	Does the project provide for a cross-jurisdictional and coordination opportunity?	0	The project does not provide an opportunity for coordinating with another jurisdiction/agency.
		5	The project does provide an opportunity for coordinating with another jurisdiction/agency.
6. Equity and the Environment	Would the project improve access for underserved communities?	2	Environmental Effects – Proximity to Hazardous Waste Treatment Storage and Disposal Facilities – 1-5 = 0, 6-10 = 2
		2	Environmental Exposures – Proximity to Heavy Traffic Roadways – 1-5 = 0, 6-10 = 2
		2	Socioeconomic Factors – People of Color (Race/Ethnicity) – 1-5 = 0, 6-10 = 2
		2	Socioeconomic Factors – Population living in Poverty – 1-5 = 0, 6-10 = 2
		2	Socioeconomic Factors – Unaffordable Housing – 1-5 = 0, 6-10 = 2
	Would the project improve stormwater management and water quality?	2	Project includes green stormwater infrastructure and/or new landscaped areas for retention and infiltration.
Maximum Score		**100**	

5.3.2 Pedestrian Priority Network and Bicycle Priority Network

The pedestrian priority network (Figure 24) and bicycle priority network (Figure 25) were developed through evaluation of previous plans and workshops with the project team. The pedestrian priority network and bicycle priority network were available for public comment and were refined using public input collected on the webmap and via email during the comment period from August 19 through September 9, 2024. A summary of this public engagement is included in Section 2 and Attachment E.

The priority networks highlight corridors considered as a priority for implementation of future active transportation projects through and beyond the 2044 planning horizon. Other collaboration opportunities with Kitsap County, Washington State, and local institutions were also identified as priority segments. The pedestrian and bicycle priority networks identify future improvement corridors, not active bike routes or specific improvement projects. These networks highlight routes that will be prioritized for future project development, not necessarily routes that are ideal for use right now. The city of Bremerton will consider BLTS (Bicycle Level of Traffic Stress) and PLTS (Pedestrian Level of Traffic Stress) standards by considering a range of different methodologies as part of a separate planning process

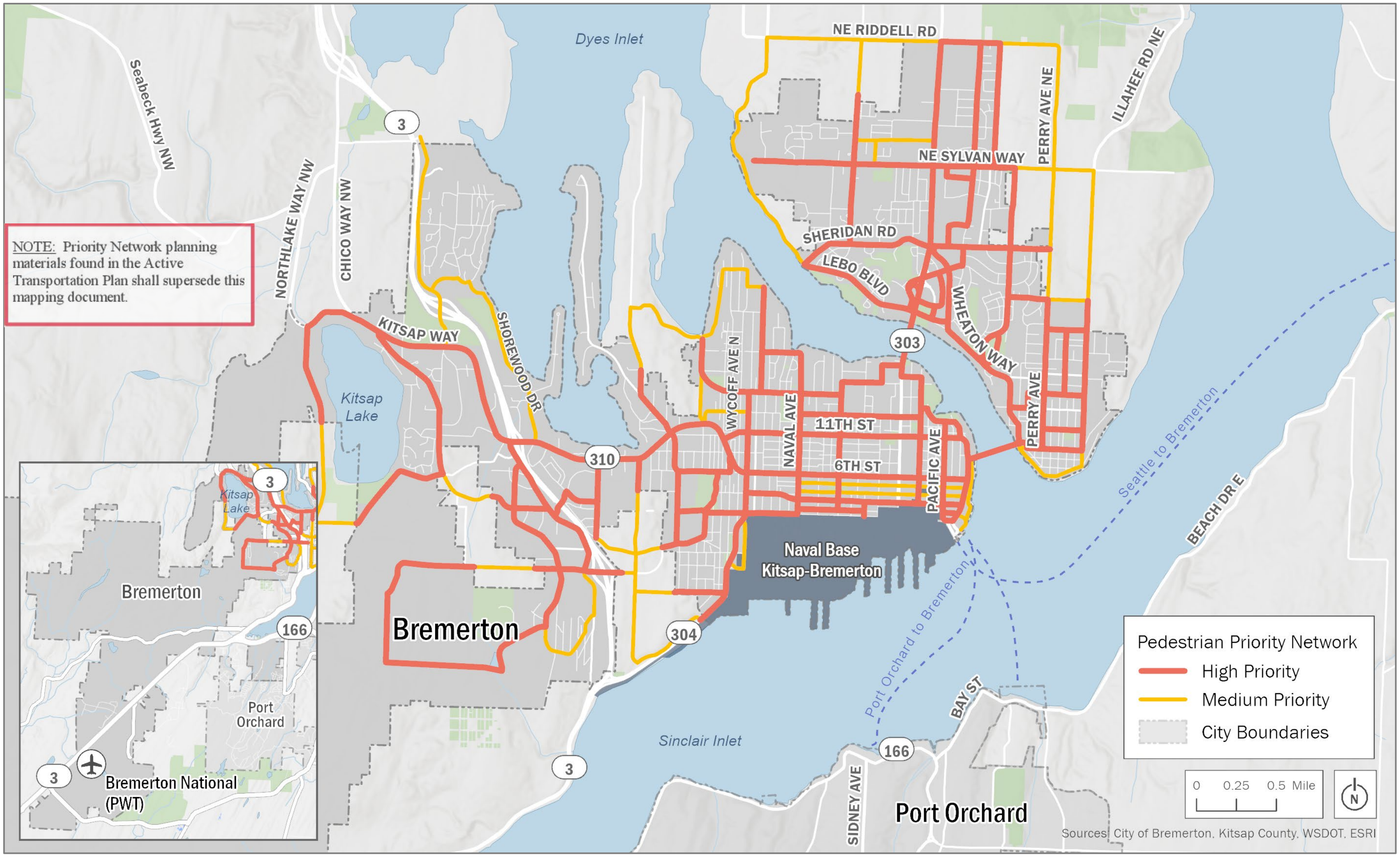


Figure 24. Pedestrian Priority Network

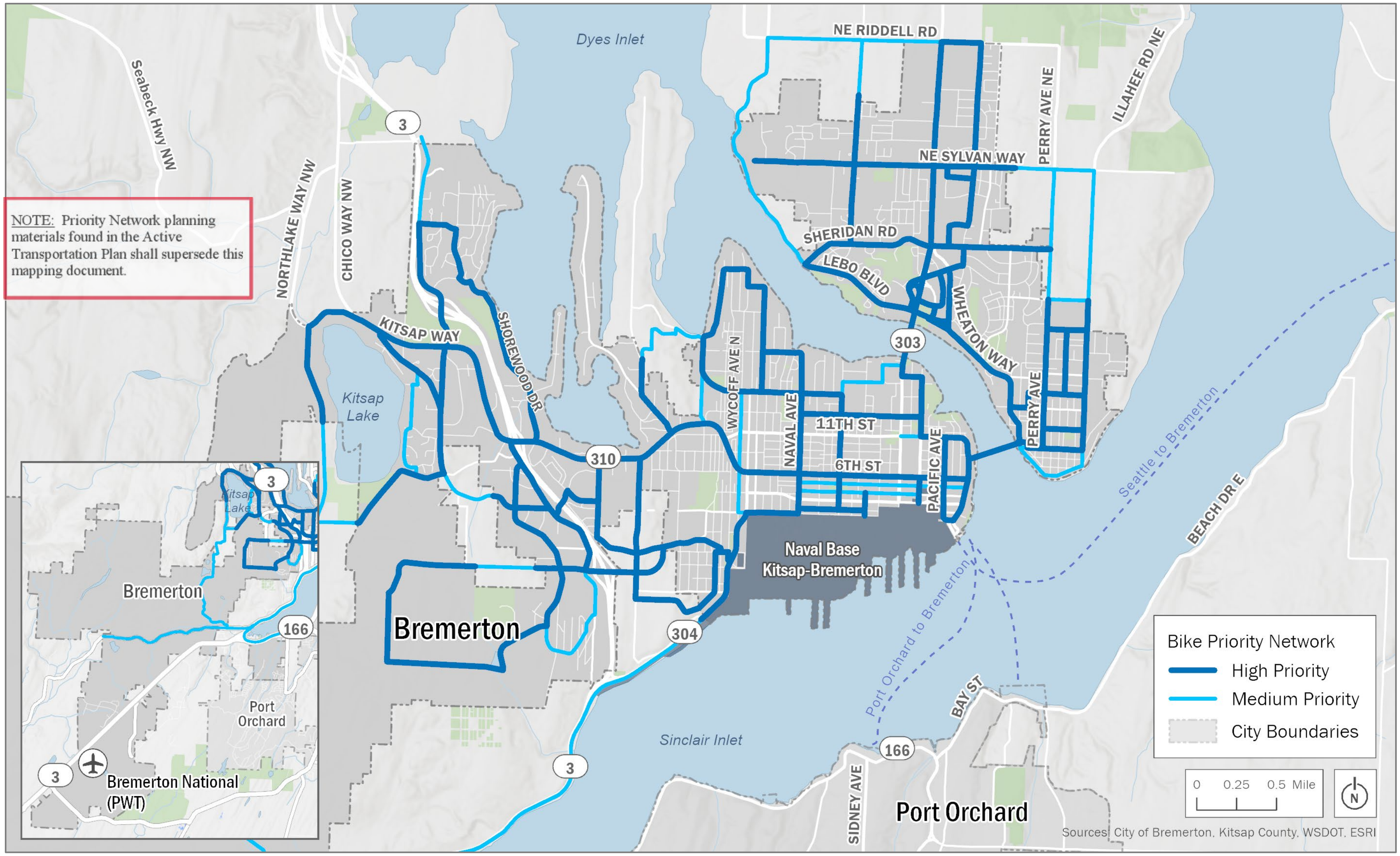


Figure 25. Bike Priority Network

5.3.3 Future Traffic Operations Deficiencies

Measures related to concurrency are useful for the regular prioritization of projects for inclusion in the Capital Improvement Program (CIP) to meet state concurrency requirements in the GMA. Projects identified to address deficiencies based on the city's LOS standards for traffic operation were, included in the list of funded projects since these must be implemented with development over the 20-year horizon of the comprehensive plan to address concurrency.

5.3.3.1 Concurrency System

The Washington State Growth Management Act (GMA) requires cities and counties to provide public infrastructure, including transportation facilities and services, concurrent with new development. Transportation concurrency requires that the impacts of new development do not reduce transportation LOS and MMLOS below the responsible agency's adopted LOS and MMLOS standards. If it is determined during the development review process that the proposed land use action would reduce LOS and MMLOS below the adopted standard, the development must be modified to reduce its transportation impact or provide corrective transportation improvements. Transportation improvements, which may include project funding, must be identified and programmed within a 6-year period from development permitting. Should any of these requirements fail to be met, the development proposal cannot be granted approval.

Washington House Bill (HB) 1181, passed in 2023 and codified as RCW 36.70A.070, added several local agency transportation planning requirements. In addition to an increased emphasis on per-capita vehicle-miles traveled reductions and a requirement to calculate multimodal travel demand forecasts, HB 1181 required agencies to adopt multimodal level of service (MMLOS) standards.

This Transportation Technical Appendix includes a multimodal transportation concurrency management system, including MMLOS standards, which satisfy current statutory requirements. These standards will evaluate new development for impacts related to pedestrian safety, street design, transit, on-site transportation, and intersection capacity. By quantifying development impacts relative to defined MMLOS standards, the transportation concurrency management system will provide a uniform, transparent, and repeatable method of ensuring that transportation infrastructure keeps pace with development citywide. Bremerton will develop PLTS and BLTS standards that consider a range of methodologies as part of a separate planning process. A memorandum summarizing the concurrency system and possible evaluation methods is included in Attachment F.

5.3.3.2 Level of Service Standards

Multimodal LOS standards will evaluate new development projects for impacts related to pedestrian safety, street design, transit, on-site transportation, and intersection capacity. By quantifying development impacts relative to defined MMLOS standards, the transportation concurrency management system needs to ensure that transportation infrastructure keeps pace with development citywide and **minimizes auto-dominance on streets by working towards further developing complete streets with multimodal functions.**

Current LOS standards for traffic operations are established by the city for municipal roads and by WSDOT for designated state routes. In Bremerton, the minimum standard for intersection traffic operations is LOS E for intersections on city roadways. WSDOT LOS standards are LOS D for intersections on Highways of State Significance (HSS) such as SR 304/Burwell Street and SR 310/Kitsap Way and LOS E/Mitigated for intersections on state routes that are not classified as HSS such as SR 303. LOS E/Mitigated identifies locations where congestion must be mitigated when peak hour LOS falls below LOS E.

While WSDOT facilities are not typically subject to concurrency, several principal arterials in Bremerton are under city jurisdiction, but are designated state highways and are subject to WSDOT standards for traffic operation. This includes SR 303 along Warren Avenue and Wheaton Way, SR 304 along Burwell Street and N Callow Avenue, and SR 310 along Kitsap Way. For intersections along these roadways, the city uses the applicable WSDOT standards for traffic operations. LOS standards for traffic operations at intersections are shown in Table 18.

Table 18. Applicable Traffic Operations LOS Standards for Intersections in Bremerton

Roadway Type	*Intersection LOS Standard*
City Streets without State Highway Designation	E
WSDOT HSS (SR 3, SR 304, SR 310)	D
WSDOT non-HSS (SR 303)	E/Mitigated

5.3.4 6-Year and 20-Year Transportation Capital Projects

Near-term transportation improvements have been identified as part of the 6-year capital project list in Table 19. This list incorporates the transportation projects anticipated as part of the 2044 Comprehensive Plan Transportation Element update as well as additional projects to address future deficiencies.

Longer-term projects are included in the 20-year project list shown in Table 20. Programs are anticipated to receive continued funding through 2044.

[illegible]			
Project Name	***Project Description***	***Funding Status***	***Estimated Cost***
City Safety Improvement Program	City Safety Improvement Program	Funded	$160,000
Signal System Upgrade Program	Signal System Upgrade Program	Funded	$100,000
City Street Lighting Program	City Street Lighting Program	Funded	$35,000
Streets Preservation and Maintenance Program	Streets Preservation and Maintenance Program	Funded	$750,000
Signage and Pavement Marking Maintenance Program	Signage and Pavement Marking Maintenance Program	Funded	$300,000
Sidewalk Program	Sidewalk Program	Funded	$775,000
Bridge Inspection and Repair Program	Bridge Inspection and Repair Program	Unfunded	$20,000
Werner Rd Widening and Signal Improvements	Upgrade signals and roadway to help move traffic and improve level of service from SR 3 SB Ramps to Union Ave W	Funded	$7,700,000
SR 303 Adaptive Signals (Sheridan to Riddell)	Upgrade signals to help move traffic and improve level of service on SR 303 from Sheridan to Riddell	Funded	$2,696,799
Kitsap Way/Marine Dr Intersection Improvements	New roundabout at Kitsap Way and Marine Dr	Funded	$5,327,700
6th St Active Transportation Improvements Project	Road diet and Rechannelization of the 6th Street corridor to convert of the roadway from 4-lanes to 3-lanes with continuous on-street bike lanes	Funded	$3,276,000
Naval Ave Pedestrian & Bicycle Enhancements 1st to 15th	Revise lane configuration on Naval Ave to include 2-way center turn lane and bike lanes; pavement resurfacing, bike lanes, wider sidewalks, signal timing and phasing, intersection treatments, pavement markings, and modified storm drainage.	Funded	$10,106,100
View Ridge Safe Routes to Schools Phase 1	View Ridge bicycle and pedestrian improvements with pedestrian, bicycle and shared facilities on Sylvan Way, E 33rd Street, Almira Drive north of Sylvan Way and the alleyway west of Almira south of Sylvan Way.	Funded	$4,285,000
1st St Bicycle Corridor (Bruenn to Auto Center)	Bicycle and shared roadway signage on 1st Street from Bruenn Ave to Auto Center Way	Funded	$1,790,000

[illegible]			
Project Name	***Project Description***	***Funding Status***	***Estimated Cost***
SR 303 Warren Ave Bridge Multimodal Improvements	Roadway and sidewalk improvements, sidewalk and active transportation improvements south and north of the bridge; "Alternative X" proposes asymmetrical widening on both sides of the bridge, with a 12-foot clear-width walkway on the east side and an 8-foot clear-width walkway on the west side with two overlooks if within budget	Funded	$25,000,000
View Ridge Elementary (Almira SRTS) Phase 2	Add bike lanes on Almira Dr from Sylvan Way to Riddell Rd. Includes widening and stormwater improvements	Funded	$6,512,000
Sinclair/Union Intersection Improvements	Pedestrian safety improvements to the Sinclair and Union intersection	Funded	$1,250,000
Belfair Valley Road Subgrade Repair and Overlay	Repair to Belfair Valley Road	Funded	$150,000
Phinney Bay Retaining Wall and Guardrail Project	Retaining walls and guard rails on Phinney Bay Dr	Funded	$2,050,000
Parish Creek Culvert Replacement	Replace the existing fish barrier culvert that crosses W Belfair Highway at Parish Creek with a 2-lane bridge.	Funded	$2,733,000
11th Street Corridor Design Project	Design improvements to 11th Street between Pacific Ave to Kitsap Way in three phases. Kitsap Way to Naval, Naval to Warren, and Warren to Pacific.	Funded	$1,470,000
11th Street Improvements (Kitsap to Naval)	Improvements to 11th Street from Kitsap Way to Naval Avenue, including crossing improvements, and EB left turn lane at Callow.	Funded	$2,035,000
11th Street Community Blvd (Warren to Pacific)	Maintenance and preservation to 11th Street from Naval Ave to Warren Ave including compliant ADA ramps.	Funded	$2,483,000
11th Street Preservation (Naval to Warren)	Maintenance and preservation to 11th Street from Naval Ave to Warren Ave including compliant ADA ramps.	Funded	$2,516,000

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
City Safety Improvement Program	City Safety Improvement Program	$160,000
Signal System Upgrade Program	Signal System Upgrade Program	$100,000
City Street Lighting Program	City Street Lighting Program	$35,000
Streets Preservation and Maintenance Program	Streets Preservation and Maintenance Program	$750,000
Signage and Pavement Marking Maintenance Program	Signage and Pavement Marking Maintenance Program	$300,000
Sidewalk Program	Sidewalk Program	$775,000
Bridge Inspection and Repair Program	Bridge Inspection and Repair Program	$20,000
Park Ave/4th Street Mobility Hub	Construct a mobility hub at the southwest corner of Park Ave and 4th St for first/last mile connections; includes bike parking area	$1,622,400
High Ave/5th, 7th, 8th, 10th, and 12th St ADA Pedestrian Improvements	ADA Pedestrian Improvements	$490,000
Auto Center Blvd/Bruenn Ave Bicycle Lanes	New bicycle lanes	$4,150,650
Sheridan Reconstruction (SR 303 to Pine Road)	New bicycle lanes and roadway reconstruction	$11,700,000
Sylvan Way Sidewalks Bicycle Lanes (SR 303 to Olympus)	New bicycle lanes from Wheaton Way to Olympus Drive and fill sidewalk gaps	$4,801,000
Bicycle corridor signage, pavement markings and intersection treatments for shared roadway applications	Signage, pavement markings, and intersection treatments for roadways in Bremerton. 1st St., Bruenn/ACW; 1st St, Hartford/Naval; Holman, Perry/Trenton; Searle, ACW/SR3; Olding/Shore/Root, Austin/Ostrich Bay Trail; Cherry, Lebo/Sheridan	$600,000
Kitsap Lake Vicinity Area Ped/Bike Improvements	Improve bicycle pedestrian safety and connectivity	$8,539,871
Northlake Way Bicycle Corridor	Shoulder bikeway	$660,000
Shorewood Dr Bike Facilities	Add bike facility on Shorewood Dr to connect Kitsap Way to downtown Bremerton with bicycle signage and pavement markings; Add bike facilities on Shorewood Dr to connect to Kitsap Way	$5,299,840

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
Wheaton Way/Spruce Ave/E 30th St Bike Lanes	Bicycle facilities from Callahan Drive to Cherry Avenue using lower Wheaton Way, Spruce Avenue, and E 30th Street	$3,710,791
SR 303 Off-Corridor Bike Improvements	Add bike lanes on Callahan Dr, Cherry Ave, and Almira Dr (Callahan to Cherry Connection)	$3,710,791
Lake Flora Widening	Widening to southern end of potential southern end of Cross-PSIC Bremerton roads.	$4,556,163
Warren Avenue Left-Turn Lane Extension	Extend northbound left-turn lane on SR 303 from 16th Street to 13th Street	$996,318
Kitsap Way (SR 310)/Corbet Dr Intersection Improvements	New multilane roundabout with two lanes in each direction of Kitsap Way	$5,647,775
Adaptive Signals - Warren Avenue (Burwell to 17th)	Upgrade signals to help move traffic and improve level of service on SR 303 from Burwell to 17th.	$2,696,799
Burwell St/Warren Ave Intersection Improvements	Reconfiguration of Burwell Street and Warren Ave intersection, including closure of south leg.	$836,325
SR 303 - Median Channelization and Signage (Sheridan Rd to Sylvan Way)	Implement median access control with U-turns at intersections	$4,197,453
SR 303 - Median Channelization and Signage (Sylvan Way to Riddell)	Implement median access control with U-turns at intersections	$3,274,702
SR 303 - Median Channelization and Signage (Burwell St to 6th St)	Median, channelization and signing improvements	$1,824,979
Harlow Dr Corridor Project	Sidewalk & Bike Lanes from Kitsap Way to city limits and city limits to Auto Center Way/Bruenn Ave	$8,080,000
Auto Center Way	Sidewalks & bicycle lanes; Loxie Eagans Blvd to Kitsap Way (SR 310)	$4,670,000
Pine Rd Reconstruction	Sidewalks and bicycle lanes	$12,895,925
Sheridan Rd Corridor Project (SR 303 to Perry Avenue)	Sidewalks and bicycle lanes	$10,201,100
Armin Jahr Elementary (SRTS)	Improve bicycle and pedestrian safety near schools - Intersection of Dibb St and Stewart Rd	$939,386
Belfair Valley Road Shoulder Widening for Multimodal	Widen shoulder to accommodate multimodal travel - Division to McKenna Falls	$640,490
Sylvan Way Reconstruction (Sulphur Springs to Pine Rd NE)	Sidewalks and bicycle lanes from Sulphur Springs Ln to Pine Rd NE	$16,633,575

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
Sylvan Way Reconstruction (SR 303/Wheaton Way to Pine Rd NE)	Sidewalks and bicycle lanes from SR 303/Wheaton Way to Pine Rd NE	$13,928,425
Transit Vicinity Ped/Bike Improvements	Pedestrian/Bike improvements within 5 minute walkshed of park and rides	$7,138,560
18th St Active Transportation Facilities	Active transportation facilities on 18th St through Olympic College	$1,011,850
SR 303 Bury Utilities	Underground utilities that would otherwise be obstructions in the sidewalks	$28,899,675
Crownhill Elementary (SRTS) Phase 2	Improve bicycle and pedestrian safety near schools - Rocky Point Road and Marine Dr intersection	$690,306
Naval Ave Elementary (SRTS)	Improve bicycle and pedestrian safety near schools - 10th and Naval Intersection	$939,386
Kitsap Lake Elementary (SRTS)	Improve bicycle and pedestrian safety near schools	$1,878,772
Mountain View Middle School (SRTS)	Add sidewalks and planting strips on the west side of Trenton Avenue and improve crossings at Holman Street and Trenton Avenue.	$2,591,575
SR 303 Active Transportation Improvements (Warren Ave Bridge to Sheridan Rd)	Active transportation improvements. Update striping, provide wayfinding, underground utilities; 10' sidewalks on both sides; Update lane striping along SR 303 to delineate active transportation facilities; provide wayfinding for active transportation users; Underground utilities that would otherwise be obstructions in the sidewalks	$1,034,155
Marion St at Renaissance High School Crossing Improvements	Intersection improvements	$2,539,950
Sheridan Rd at Pine Rd Crossing Improvements	Intersection improvements	$454,300
11th St at Callow Ave Crossing Improvements	Intersection improvements	$1,800,000
Lower Wheaton Way Reconstruction (Lebo Blvd to Sheridan Rd)	Street reconstruction, Lebo to Sheridan	$2,846,624
Strategic Road Safety Plan Improvements	Build projects proposed in Strategic Road Safety Plan. Includes adaptive signal timing along Burwell St and pedestrian crossing treatments at Burwell St/Washington Ave & 6th St/Hewitt Ave; Pedestrian crossing treatments at 6th St/Hewitt Ave and Burwell St/Washington Ave	$3,136,640

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
NBK Vicinity Signal Improvements	Add all walk ped phases at Burwell St/ State Ave, Park Ave/Burwell St. Pacific Ave/Burwell St	$27,040
Roundabout at Callahan and BAT Lane to Sheridan	New roundabout at SR 303 & Callahan Ave, construct NB BAT lane, repurpose tunnel along Callahan Dr to be active transportation undercrossing; Bicycle facilities on Callahan Drive from SR 303 to lower Wheaton Way using existing tunnel under SR 303	$17,276,471
SR 303 Midblock Crossing (Between 6th St & 11th St)	Build a mid-block pedestrian crossing between 6th Street and 11th Street and provide a pedestrian hybrid beacon signal and pedestrian refuge island. Add bus stops near mid-block crossing.	$790,824
SR 303 Midblock Crossing (Between Hollis St & Riddell Rd)	Build a mid-block pedestrian crossing between Hollis Street and NE Riddell Road and provide a pedestrian hybrid beacon and pedestrian refuge island. Relocate bus stops to be near mid-block crossing	$608,326
SR 303 Midblock Crossing (North of Dibb St)	Build a mid-block pedestrian crossing north of Dibb Street and provide a pedestrian hybrid beacon and pedestrian refuge island	$608,326
SR 303 Midblock Crossing (North of Pearl St)	Build a mid-block pedestrian crossing north of Pearl Street and provide a pedestrian hybrid beacon and pedestrian refuge island. Relocate bus stops to be near mid-block crossing	$608,326
SR 303 - Roundabout at Riddell Road	Replace the signal at NE Riddell Road with a roundabout including pedestrian crossings at all four quadrants	$10,402,382
Perry Ave Corridor Project (E 17th Street to City Limits)	Sidewalks and bicycle lanes from E 17th Street to City Limits	$11,000,000
Riddell Rd Corridor Project	Sidewalks and bicycle lanes from Pine Rd NE to Perry Ave NE	$13,000,000
Gorst Sinclair Trail	Shared-use path connecting Kitsap Lake to Jarstad Park	$5,132,134
National Ave Reconstruction (1st Street to Kitsap Way)	Sidewalks and bicycle lanes from 1st Street to Kitsap Way	$2,219,875
West Belfair Valley Rd Guardrails	Evaluation and implementation from Division to McKenna Falls	$113,865
Sheridan Park Connector	Active transportation facility to connect to Lebo Boulevard on the north side of the bridge	$9,276,000

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
Shared-use Path Connection to Almira Dr	Provide 10' wide sidewalks from SR 303 to Almira Drive using NE 32nd Street through Old East Bremerton High School, connecting near Dibb Street	$3,710,791
SR 303 Improvements (13th St to Warren Ave Bridge), Phase 6	Channelization, sidewalk, and transit improvements from 13th St to Warren Ave Bridge; Widen sidewalk to 10’ on west side of SR 303 between 13th Street and Warren Avenue Bridge	$3,284,963
SR 303 - BAT Lane & Sidewalks (Sylvan Way to Hollis Street)	Construct northbound BAT lane and provide 10' wide sidewalks on both sides of SR 303	$43,750
1st St West of Harlow Sidewalks	Auto Center Blvd./Bruenn Ave to Auto Center Way	$1,790,000
16th St Sidewalks	Sidewalks	$700,000
26th St Sidewalks	Sidewalks	$1,200,000
Corbet Dr Sidewalk	Sidewalk	$4,110,000
Hartford St Sidewalk	Sidewalk	$1,690,000
Phinney Bay Dr Sidewalks	Rocky Point Road to Corbet Drive	$3,800,000
Preble St Sidewalks	Sidewalk	$3,190,000
Price Rd Sidewalks	Sidewalks	$3,790,000
Rocky Point Rd Sidewalks	Sidewalks	$3,020,000
Roosevelt Blvd Sidewalks	Sidewalks	$2,790,000
Tracyton Beach Rd Sidewalks	Sidewalks	$1,110,000
Magnusson Way/Stone Way Sidewalks	Sidewalks	$1,620,000
Shorewood Dr Sidewalks	Sidewalks	$5,550,000
NAD Park-Jackson Park Naval Housing Area Shared Use Path	Shared use path	$2,700,000
Snyder Ave Sidewalks	Sidewalks	$5,360,000
Ped Connector Under Warren Ave Bridge South Approach	Improve pedestrian safety and connectivity	$4,075,787
State St Pedestrian Corridor Improvements	Improve pedestrian safety and connectivity - from 1st Street to 4th Street	$7,116,559
Matan & Lillian & James Walker Park Sidewalk Connector	Sidewalk connector; Bloomington & Olympic	$626,257
Anderson Cove Sidewalk Improvements	Construct sidewalks along Naval Ave from 19th St to 15th St	$626,257

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
Shore Dr Shared-use Path Planning Study	Improve bicycle and pedestrian safety and connectivity; Convert upper portion of Shore Dr. to shared use path	$85,399
Marine Dr Nonmotorized Improvements	Improve bicycle and pedestrian safety and connectivity	$1,352,146
Wheaton Way at Callahan Sidewalk Improvement	Improve pedestrian safety and connectivity	$266,877
Petersville Rd Sidewalk	Sidewalks	$5,916,225
West of Charleston Blvd Sidewalk Improvements	Improve sidewalk conditions in the neighborhood west of Charleston Blvd	$8,652,800
NBK Vicinity Active Transportation Improvements	"Within the 10-minute walksheds of base gates, upgrade and/or add sidewalks; upgrade marked and unmarked crossings to be ADA compliant."	$71,601,920
1st St Shared-Use Path	Add a shared-use path along south side of 1st Street between Naval Ave and Callow Ave; Stripe eastbound contraflow bicycle lane; westbound bicycle travel accommodated in shared vehicle/bicycle lane; JCTP: AT 15 add shared-use path on south side of 1st St between Naval Ave and Callow Ave	$324,480
4th St Landscaping Replacement and Sidewalk Repair	Maintenance upgrades to sidewalk to improve pedestrian safety and connectivity	$569,325
SR 303 BAT Lane & Sidewalks (Sheridan Rd to Sylvan Way)	Construct northbound BAT lane and provide 10' wide sidewalks on both sides of SR 303	$33,960,404
SR 303 - Sidewalk Improvements (Burwell St to 13th St)	Sidewalk improvements from Burwell St to 13th St	$3,163,298
13th St Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, traffic calming from Naval Ave to Park Ave	$717,139
15th St Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Lafayette Ave to High Ave	$270,244
Russell Rd Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from SR 310 to National Ave	$136,540

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
High Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from 9th St to 19th St	$187,793
Trenton Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Shore Dr to Stone Way	$182,121
Ironsides Ave/Nipsic Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Shore Dr to Holman St	$72,322
4th and 5th Streets Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming between Olympic Ave and Washington Ave	$729,294
Phinney Bay Dr. Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Rocky Point Rd to Lafayette Ave	$69,080
Arsenal Way/Patten Ave Safety Improvements	Improve bicycle and pedestrian safety and connectivity; bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming	$142,331
Oyster Bay Ave Traffic Calming	Help move traffic and improve roadway safety; Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming.	$996,318
Park Ave Bike Lanes	Construct bike lanes on Park Ave between 4th St and 6th St.	$135,200
Burwell Street (SR 304) Adaptive Signals	Implement adaptive signals along SR 304 within from Burwell St and Washington Ave to SR 304/Charleston Beach Blvd including 12 signalized intersections	$3,500,175
Callow Ave streetscape improvements & festival street	Streetscape improvements between Burwell and 13th Street with a festival street section between 6th to 9th to include street lights, festoon lighting, and urban furniture	$11,630,000
Clare Ave Shared-Use Path	Develop a new multi-use path from Lebo Blvd to SR 303 along Clare Avenue	$910,000
West Kitsap Way Phase 1a - Chico Way/Northlake Way to Harlow Dr	Reconfiguration and construction between Chico Way/Northlake Way to Harlow Dr	$4,668,330
West Kitsap Way Phase 1b - Harlow Dr to Lakehurst Dr	Reconfiguration and construction between Harlow Dr and Lakehurst Dr	$3,998,000

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
West Kitsap Way Phase 2a - Lakehurst Dr to Austin Dr	Reconfiguration and construction between Austin Dr and Lakehurst Dr	$6,590,000
West Kitsap Way Phase 2b - Austin Dr to Burchfield Dr	Reconfiguration and construction between Austin Dr and Burchfield Dr	$5,965,871
West Kitsap Way Phase 3 - Wilmont St to Burchfield Dr	Reconfiguration and construction between Wilmont St and Burchfield Dr	$13,583,000
West Kitsap Way Phase 4 - Wilmont St to SR3/Auto Center Way	Reconfiguration and construction between Wilmont St and SR 3 Interchange	$4,102,000
Catalyst School SRTS	Safe routes to school improvements for access to the Catalyst School; sidewalks & signage	$300,000
RRFB Sheridan Road	RRFB installation for Sheridan at crossing to Spruce Ave	$100,000
12th Street Reconstruction (Warren to Elizabeth)	Reconstruction of 12th Street from Warren to Elizabeth	$640,150
Burwell Street Corridor Study	Study expansion of Burwell Street for vehicle capacity and expanded sidewalks or pedestrian improvements on the south side of Burwell from Park Ave to N Callow Ave.	$630,000
Wycoff Ave Streetscape and ped/bike improvements	Sidewalk replacement and new sidewalk from 6th Street to 15th Street, bike/ped crossing improvements north/south on Kitsap Way, traffic calming at intersections with Burwell St, 13th Street and 15th Street	$6,401,500
Hemlock St Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, traffic calming, and crossing improvements at Callahan Drive.	$610,000
Marine Drive Sidewalks	Construct sidewalks on the west side of Marine Drive from Kitsap Way to Rocky Point Road.	$1,352,146
Adele Avenue Sidewalks	Replace sidewalks on the west side of Adele Avenue and fill sidewalks gaps between 11th Street and 9th Street.	$1,393,875
Improve crossing of Adele Ave and 6th Street	Add pedestrian island between Adele, 6th and Marion in the middle of the intersection, add crossings of Marion Ave N and 6th Street at Adele and install sidewalks through the intersection on the south side of 6th Street.	$320,000
Marion Avenue Sidewalks	Add sidewalks to the west side of Marion Avenue from 6th Street to 1st Street & intersection Improvement at 1st.	$2,539,950
Werner Road Shared Use Path	Shared-use path from Union Ave W/Auto Center Way to Panoramic Loop.	$6,830,000

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
Park Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from 6th Street to 17th Street.	$860,000
1st Street East of Callow Sidewalk Infill and Replacement	Replace sidewalks on the north side between N Wycoff Ave and N Lafayette Ave; add on south side of 1st Street from N Wycoff Ave to Marion Ave.	$1,720,000
S Summit Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Rodgers to City Limits.	$750,000
S Cambrian Ave Bike Corridor	Bicycle and shared roadway signage, pavement markings bike crossing improvements across SR 304 to connect with existing 304 bike facilities.	$500,000
Rodgers St Bike Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, traffic calming from S Summit Street to S Cambrian Ave.	$320,000
13th Street Sidewalks	Sidewalks on 13th Street from N Callow Ave to Kitsap Way.	$3,650,000
E 13th Street Corridor Project	Sidewalks and bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Perry Ave to Trenton Ave.	$1,410,000
Harkins Street and Pitt Ave Bicycle Improvements	Separated bike lanes on Harkins St to Pitt Ave and painted bike lanes on Pitt Avenue to E 11th Street; intersection improvements at Harkins Street and Pitt Avenue.	$550,000
Wayfinding Implementation Phase II	Phase 1 completion this year, Phase 2 will remove and replace approximately 50 existing signs throughout the City with the new City standard wayfinding signs	$175,000
PUGET SOUND INDUSTRIAL CENTER (PSIC) ROADWAY PROJECTS		
Area B Collector Road	New roadway west of SR-3 at Cross SKIA intersection	$73,998,198
Area C Collector Road	New roadway south of Lake Flora Road to the Belfair Bypass	$3,056,409
Area D Collector Road	Portion of new roadway south of Lake Flora Road	$829,207
Area F Collector Road	New roadway north of Lake Flora Road	$5,228,331
Area G Collector Road	New roadway east from Cross SKIA Road	$691,172
Area A Local Access Road	0.43 miles of local access roads	$1,134,082
Area B Local Access Road	1.30 miles of local access roads	$3,428,719

Table 20. 20-Year List of Capital Projects and Continuing Programs		
Project Name	***Project Description***	***Estimated Cost (2031-2044)***
Area C Local Access Road	1.30 miles of local access roads	$3,428,719
Area D Local Access Road	0.35 miles of local access roads	$923,117
Area E Local Access Road	0.47 miles of local access roads	$1,951,799
Area F Local Access Road	1.00 miles of local access roads	$2,637,476
Area G Local Access Road	0.52 miles of local access roads	$1,371,521
Analysis Area C/D and Lake Flora Road	New intersection southeast of existing Lake Flora Road / SR 3 intersection	$1,665,074
Cross-SKIA Connector and Lake Flora Road	New intersection at southern terminus of extension of Cross-SKIA Connector	$1,665,074
Lake Flora Widening	Widening to southern end of potential southern end of Cross-SKIA Road	$5,330,067
Trails	12 miles of trails	$2,164,596
SR 3 / Imperial Way	Signalize intersection, modify approaches	$3,330,147
SR 3 / Sunnyslope Road	Signalize intersection, modify approaches	$3,330,147
SR 3 / SR 16 / Sam Christopherson Ave	Grade separation	$104,899,631
Old Clifton Road / SR 16 Eastbound Ramps	Signalize intersection, add dedicated right turn EB and dedicated left turn WB	$1,665,074
Old Clifton Road / SR 16 Westbound Ramps	Signalize intersection	$832,537
Analysis Area C and SR 3	New intersection southwest of existing Lake Flora Road / SR 3 intersection	$3,330,147
Cross-SKIA Connector / Analysis Area B / SR 3	New intersection at northern terminus of Cross-SKIA Connector	$832,537
SR 3 Widening	Widening from Imperial Way to Gorst	$181,493,012
Belfair Bypass	2-lane divided highway with capability for 4 lanes	$126,545,587

Attachment A. Select Project Summaries and Conceptual Design

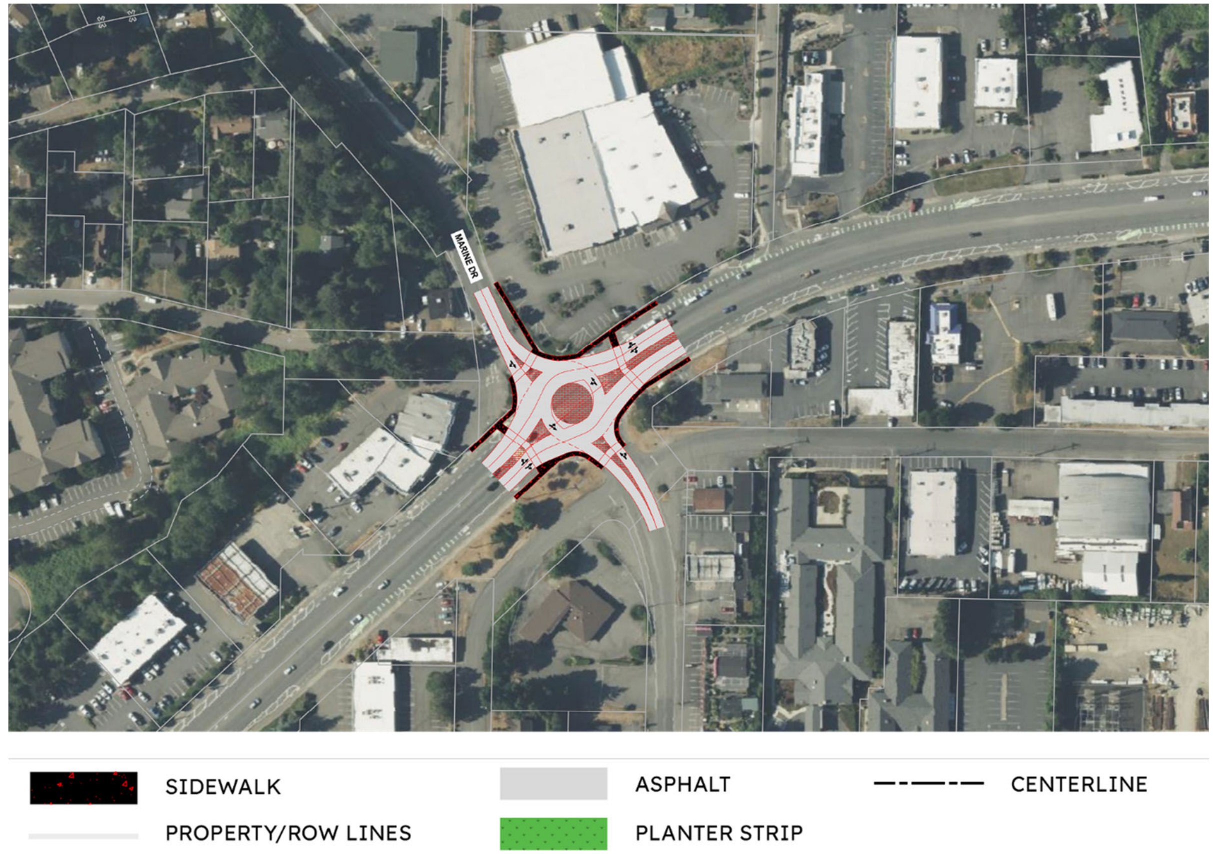
Kitsap Way / Marine Drive Intersection Improvements

Project Description

The project would reconstruct the intersection of Kitsap Way and Marine Drive to convert the existing signalized intersection to a roundabout. This is a conceptual idea, and actual improvements will be determined through additional analysis or study when the project is prioritized.

Project Benefits	Would improve traffic operations at an intersection with existing congestion issues.
Project Issues and Risks	Construction may require closures along Kitsap Way and Marion Dr.
Project Type	Traffic
Partner Agencies	WSDOT
Relationship to Other Projects	Approximately 1,000 feet from Corbet Dr intersection with proposed roundabout by 2044.
Project Length	N/A
Cost Estimate	$5,327,700
Crash History	Minor and serious injury crashes nearby.
Identified in a Planning Study or addresses citizen comments in Cartegraph	Identified as below motor vehicle intersection LOS standards in 2023.
Does the project meet existing concurrency needs?	Short-term 6-year concurrency needs for existing deficiency.

Project Area



Would the project improve stormwater management and water quality?	Project could integrate new stormwater facilities with the reconstruction of this intersection.

Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	5
	1.2	Does the project improve safety of the transportation network?	10
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	0
	3.2	Does the project close an identified network gap for walking and biking networks?	0
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	0
	3.5	Does the project include transit improvements?	2
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	15
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	5
	5.2	Does the project address existing congestion?	4
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	4
Equity and the Environment	6.1	Would the project improve access for underserved communities?	0
	6.2		2
	6.3		2
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**67**

Burwell Street (SR 304) Adaptive Signals

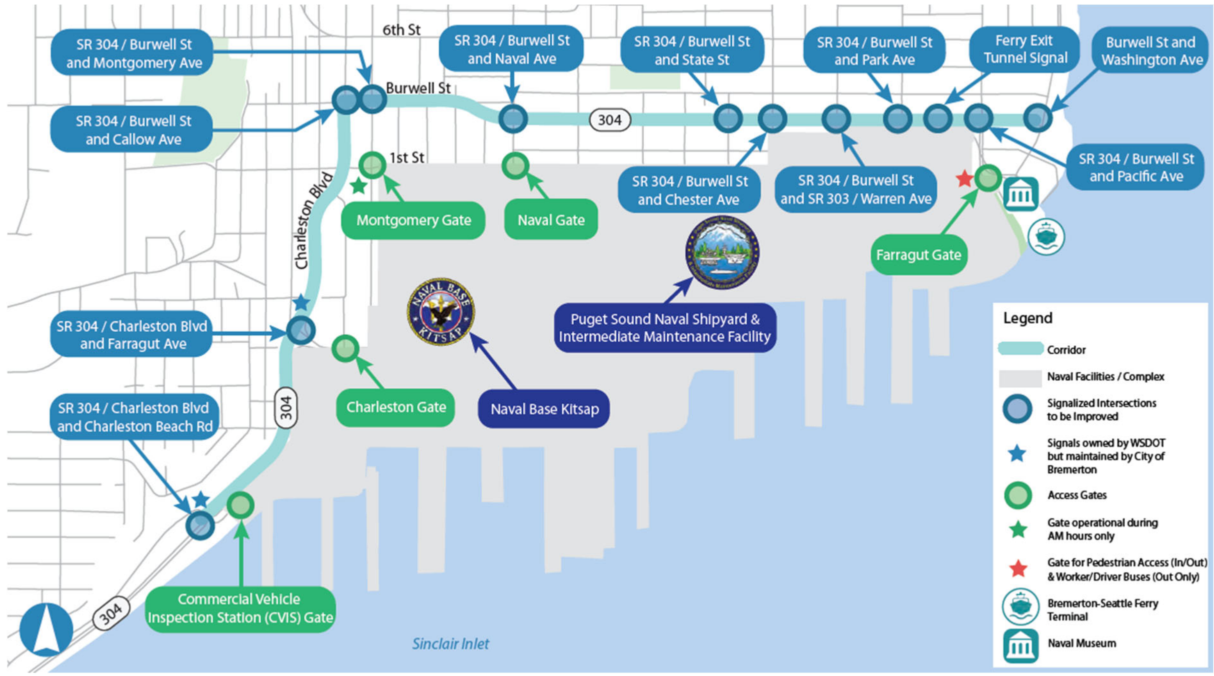
Project Description

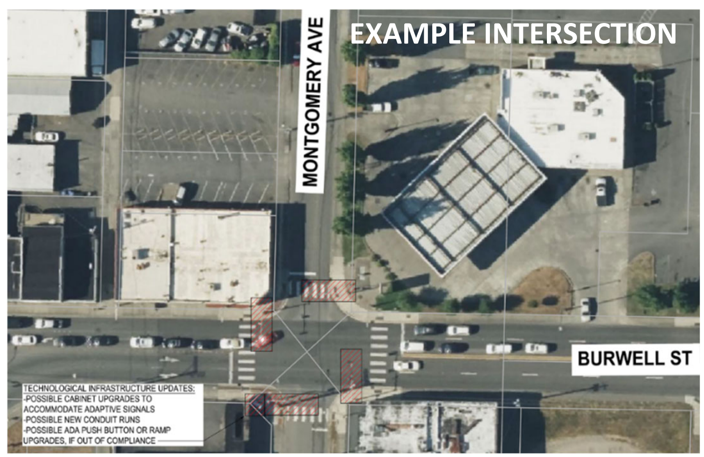
This project would update signal infrastructure along the SR 304 corridor at 12 intersections and implement adaptive signal control along the corridor.

Project Benefits	Would improve traffic flow on SR 304 and replace signal cabinets that are past their service life
Project Issues and Risks	Need an engineering study
Project Type	Traffic
Partner Agencies	WSDOT, NBK-BR
Relationship to Other Projects	Project includes the intersection of Burwell Street and Warren Avenue, also part of the SR 303 adaptive signals project.
Project Length	12 intersections
Cost Estimate	$2,696,799
Crash History	History of serious injury and fatal crashes
Identified in a Planning Study or addresses citizen comments	Identified in the 2040 Regional Transportation Plan as part of the transportation system management and operations program.
Does the project meet existing concurrency needs?	Long-term 20-year concurrency needs only.
Would the project improve stormwater management and water quality?	New stormwater facilities are not anticipated.

Project Area

CORRIDOR MAP





Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	10
	1.2	Does the project improve safety of the transportation network?	10
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	0
	3.2	Does the project close an identified network gap for walking and biking networks?	0
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	0
	3.5	Does the project include transit improvements?	2
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	5
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	5
	5.2	Does the project address existing congestion?	4
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	4
Equity and the Environment	6.1	Would the project improve access for underserved communities?	2
	6.2		2
	6.3		0
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	2
		Total Score	**62**

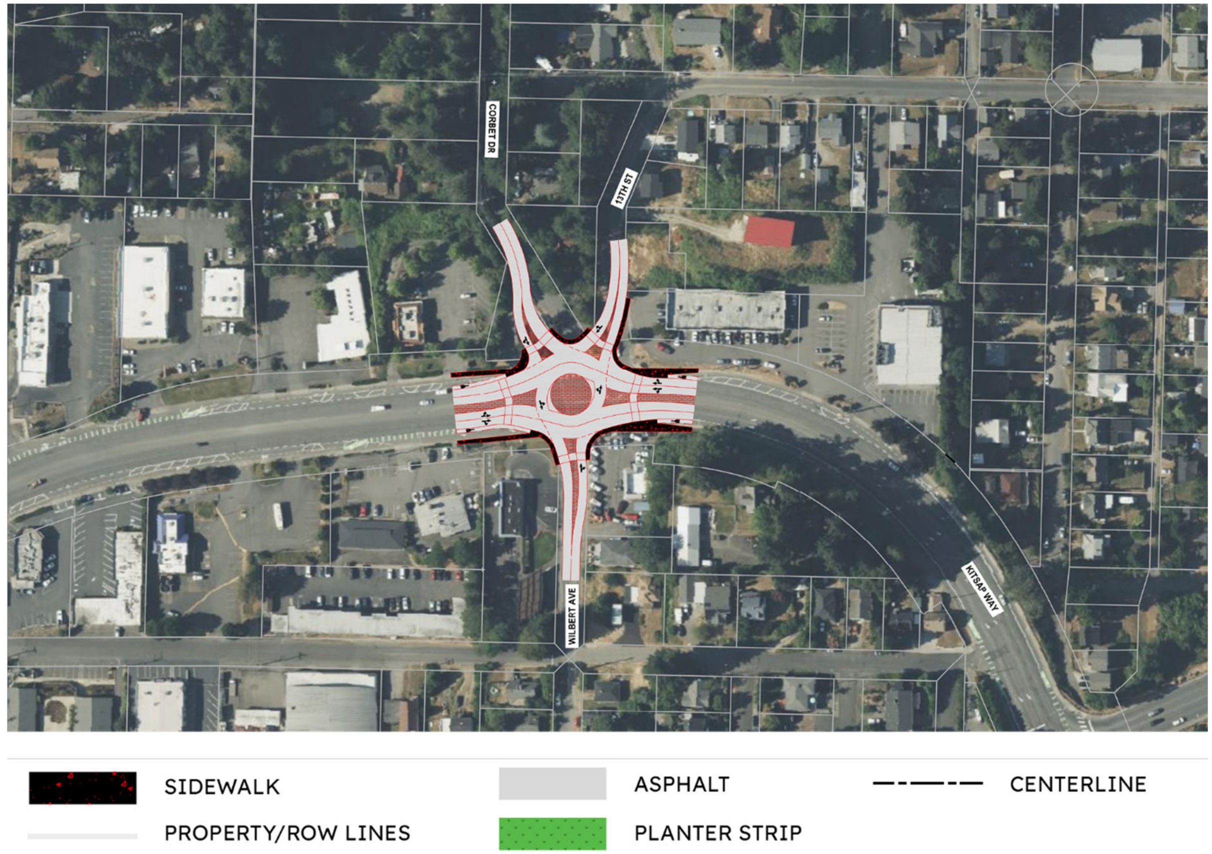
Kitsap Way (SR 310) / Corbet Drive Intersection Improvements

Project Description

This project would reconfigure the intersection of Kitsap Way with Corbet Dr, Wilbert Ave, and 13th St, replacing the existing intersection with a roundabout. This is a conceptual idea, and actual improvements will be determined through additional analysis or study when the project is prioritized.

Project Benefits	Would create a safer connection to local streets at a complicated 5-leg intersection.
Project Issues and Risks	Construction may require closures along Kitsap Way.
Project Type	Traffic
Partner Agencies	WSDOT
Relationship to Other Projects	Approximately 1,000 feet from Marine Dr intersection with proposed roundabout.
Project Length	N/A
Cost Estimate	$5,647,775
Crash History	Serious and minor injury crashes nearby.
Identified in a Planning Study or addresses citizen comments in Cartegraph	Identified as below motor vehicle intersection LOS standards by 2044.
Does the project meet existing concurrency needs?	Long-term 20-year concurrency needs only.

Project Area



Would the project improve stormwater management and water quality?	Project could integrate new stormwater facilities with the reconstruction of this intersection.

Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	5
	1.2	Does the project improve safety of the transportation network?	10
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	0
	3.2	Does the project close an identified network gap for walking and biking networks?	0
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	0
	3.5	Does the project include transit improvements?	2
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	5
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	5
	5.2	Does the project address existing congestion?	0
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	4
Equity and the Environment	6.1	Would the project improve access for underserved communities?	2
	6.2		2
	6.3		2
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**59**

Callow Avenue Streetscape Improvements between Burwell St and 13th St

Project Description

This project would reconstruct Callow Avenue and improve the streetscape based on the Charleston Areawide Planning Study. Reconstruction would also be consistent with roadway engineering standards.

Project Benefits	Community festival street and improved sidewalks and streetscape on Callow Ave.
Project Issues and Risks	Stormwater facilities will need to be carefully designed for festival street section from 6th to 9th.
Project Type	Pedestrian
Partner Agencies	
Relationship to Other Projects	Connects with planned projects on 6th Street.
Project Length	2,650 linear feet
Cost Estimate	$10,572,800
Crash History	Minor injury crashes on this section
Identified in a Planning Study or addresses citizen comments in Cartegraph	Identified in the 2021 Charleston Areawide Planning Study.
Does the project meet existing concurrency needs?	Callow Ave does not have identified deficiencies.
Would the project improve stormwater management and water quality?	New stormwater facilities could be integrated with street reconstruction.

Project Area

Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	5
	1.2	Does the project improve safety of the transportation network?	10
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	4
	3.2	Does the project close an identified network gap for walking and biking networks?	4
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	4
	3.5	Does the project include transit improvements?	0
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	0
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	0
	5.2	Does the project address existing congestion?	0
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	0
Equity and the Environment	6.1	Would the project improve access for underserved communities?	2
	6.2		0
	6.3		2
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**49**

SRTS Improvements at Mountain View Middle School near Trenton Ave and Holman Street

Project Description

This project would add sidewalks and planting strips on the west side of Trenton Avenue and improve crossings at Holman Street and Trenton Avenue.

Project Benefits	Safety benefits for pedestrians.
Project Issues and Risks	The northeast quadrant of the intersection at Trenton Ave / Holman Street is under County jurisdiction.
Project Type	Pedestrian
Partner Agencies	Kitsap County
Relationship to Other Projects	Could be integrated with planned bicycle improvements on Holman St and Trenton Ave
Project Length	750 linear feet
Cost Estimate	$2,591,575
Crash History	No recent bike/ped crashes
Identified in a Planning Study or addresses citizen comments in Cartegraph	Safe Routes to School Improvements were identified in the 2007 Non-Motorized Transportation Plan.
Does the project meet existing concurrency needs?	Trenton Ave does not have identified deficiencies.
Would the project improve stormwater management and water quality?	New stormwater facilities could be incorporated in project design but are not assumed.

Project Area

Project Scoring			
Category	**Criteria**		**Score**
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	0
	1.2	Does the project improve safety of the transportation network?	10
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	4
	3.2	Does the project close an identified network gap for walking and biking networks?	4
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	4
	3.5	Does the project include transit improvements?	2
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs? (short-term)	0
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	0
	5.2	Does the project address existing congestion?	0
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	4
Equity and the Environment	6.1	Would the project improve access for underserved communities?	0
	6.2		0
	6.3		2
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**48**

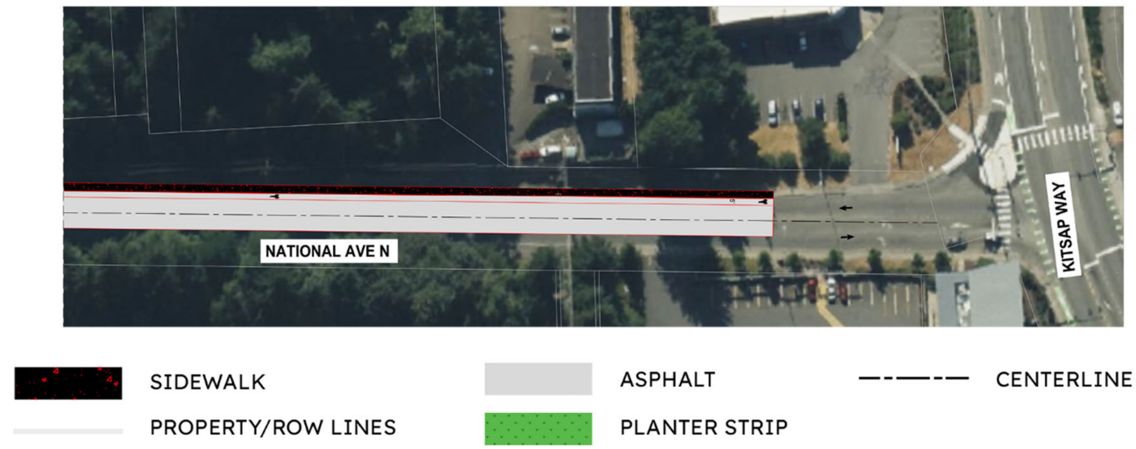
National Avenue Reconstruction from 1st Street to Kitsap Way

Project Description

This project would reconstruct National Avenue from south of Kitsap Way to City limits, adding bicycle and pedestrian facilities on the west side of the street.

Project Benefits	Would add sidewalk and bicycle lanes from 1st Street to just south of Kitsap Way
Project Issues and Risks	Anticipated gap in bicycle and pedestrian facilities in unincorporated Kitsap County.
Project Type	Corridor – bicycle and pedestrian
Partner Agencies	Kitsap County
Relationship to Other Projects	Connects to National Avenue reconstruction by Kitsap County
Project Length	1,500 linear feet
Cost Estimate	$2,219,875
Crash History	Minor injury crashes and one fatal crash reported on this section.
Identified in a Planning Study or addresses citizen comments in Cartegraph	Identified for reconstruction and bicycle and pedestrian improvements by Kitsap County.
Does the project meet existing concurrency needs?	National Ave does not have identified deficiencies.
Would the project improve stormwater management and water quality?	New stormwater facilities could be integrated with street reconstruction.

Project Area



Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	10
	1.2	Does the project improve safety of the transportation network?	0
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	4
	3.2	Does the project close an identified network gap for walking and biking networks?	4
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	4
	3.5	Does the project include transit improvements?	2
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	0
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	0
	5.2	Does the project address existing congestion?	0
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	4
Equity and the Environment	6.1	Would the project improve access for underserved communities?	0
	6.2		2
	6.3		0
	6.4		0
	6.5		0
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**44**

Sylvan Way Reconstruction between SR 303 and Pine Rd

Project Description

Sylvan Way would be reconstructed from SR 303 to Pine Road to add sidewalks and bicycle lanes consistent with the City of Bremerton's standards for arterial streets.

Project Benefits	Improve safety for people walking and biking
Project Issues and Risks	Limited right-of-way for to separate buffering of bike lines from traffic.
Project Type	Corridor – bicycle and pedestrian
Partner Agencies	
Relationship to Other Projects	Connects to SR 303 and planned active transportation improvements.
Project Length	2,600 linear feet
Cost Estimate	$13, 928,425
Crash History	Minor injury crashes in this section.
Identified in a Planning Study or addresses citizen comments in Cartegraph	Identified in the 2007 Non-Motorized Transportation Plan.
Does the project meet concurrency needs?	Sylvan Way does not have identified deficiencies.
Would the project improve stormwater management and water quality?	New stormwater facilities could be integrated with street reconstruction.

Project Area

SIDEWALK
ASPHALT
CENTERLINE
PROPERTY/ROW LINES
PLANTER STRIP

Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	0
	1.2	Does the project improve safety of the transportation network?	10
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	4
	3.2	Does the project close an identified network gap for walking and biking networks?	4
	3.3	Is the project on the bicycle or pedestrian priority network?	4
	3.4	Does the project expand multimodal access to key active transportation destinations?	4
	3.5	Does the project include transit improvements?	0
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	0
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	0
	5.2	Does the project address existing congestion?	0
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	0
Equity and the Environment	6.1	Would the project improve access for underserved communities?	0
	6.2		0
	6.3		2
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**42**

12th Street Reconstruction between Warren Ave and Elizabeth Ave

Project Description

This project would reconstruct 12th Street between Warren Avenue and Elizabeth Avenue with new roadway surface and sidewalks.

Project Benefits	Replace sidewalks and resurface roadway.
Project Issues and Risks	
Project Type	Pedestrian/ New Road Surface
Partner Agencies	
Relationship to Other Projects	Connection to Warren Avenue / SR 303 improvements.
Project Length	280 linear feet
Cost Estimate	$640,150
Crash History	Minor injury crashes on this segment.
Identified in a Planning Study or addresses citizen comments in Cartegraph	N/A
Does the project meet existing concurrency needs?	This section of 12th Street does not have identified deficiencies.
Would the project improve stormwater management and water quality?	New stormwater facilities could be integrated with street reconstruction.

Project Area

SIDEWALK
PROPERTY/ROW LINES
ASPHALT
PLANTER STRIP
CENTERLINE

Project Scoring

Category	Criteria		Score
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	0
	1.2	Does the project improve safety of the transportation network?	0
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	10
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	4
	3.2	Does the project close an identified network gap for walking and biking networks?	0
	3.3	Is the project on the bicycle or pedestrian priority network?	0
	3.4	Does the project expand multimodal access to key active transportation destinations?	4
	3.5	Does the project include transit improvements?	0
	3.6	Does the project include connections to city centers and/or regional centers?	0
Concurrency	4.1	Does the project meet existing or future concurrency needs?	0
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	0
	5.2	Does the project address existing congestion?	0
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	0
Equity and the Environment	6.1	Would the project improve access for underserved communities?	0
	6.2		0
	6.3		2
	6.4		2
	6.5		2
	6.6	Would the project improve stormwater management and water quality?	0
		Total Score	**24**

Category	Criteria		Methodology	Datasets	Score	Score Definitions
Safety and Security	1.1	Is the project located in an area with a history of serious or fatal crashes?	Score for projects in location with a history of crashes or bike/pedestrian-involved crashes and/or adds an FHWA approved Proven Safety Countermeasure	Crashes within City limits in past 5 years (WSDOT).	0	Project location has no recent crashes (past 5 years) or identified safety concerns
					5	Project location has one or more crashes of any type and severity (past 5 years)
					10	Project location has one or more fatal/severe injury collisions and/or any bike/pedestrian involved collisions (past 5 years)
	1.2	Does the project improve safety of the transportation network?	Score for projects that include safety improvements for multiple modes and/or address safety concerns and citizen comments	City Safety Plan, Safe Routes to School, Cartegraph	0	Project does not specifically address any safety concerns and no citizen comments
					10	Project addresses and improves known safety issue and addresses citizen comments
		Maximum score			20	
System Preservation and Major Maintenance	2.1	Does the project upgrade or maintain existing infrastructure?	Score for projects that enhance or maintain condition of facilities through pavement overlays, or facility upgrades	Project information	0	Project includes new infrastructure where none existed, i.e. new roadway
					10	Project includes reconstruction of a roadway, crossing enhancement, new technology
					20	Project includes preservation of a roadway, i.e. grind and overlay
		Maximum score			20	
Complete Streets and Accessibility	3.1	Does the project include a dedicated facility for bicyclists or pedestrians?	Score based on inclusion of active transportation infrastructure. Dedicated facility or dedicated enhanced. 3 point scale. Scale to the roadway.	Project information	0	Project does not include bicycle or pedestrian infrastructure
					1	Project includes either a bicycle or pedestrian infrastructure built to minimum City standards
					3	Project includes both bicycle and pedestrian infrastructure that meets or exceeds City standards
	3.2	Does the project close an identified network gap for walking and biking networks?	Score if improves or maintains a connected network of pedestrian or bicycle facilities by closing designated active transportation gaps identified in the Active Transportation Plan	Active transportation destinations map (ATP)	0	Project does not close a gap or extend existing infrastructure
					3	Project includes facilities that completes an active transportation gap or extends infrastructure for either bicyclists or pedestrians
	3.3	Is the project on the bicycle or pedestrian priority network?	Score if the project is on the priority network for either bicycle or pedestrians	Active transportation destinations map (ATP)	0	Project is not on the priority network
					1	Project is on the priority network
					3	Project is on the high priority network
	3.4	Does the project expand multimodal access to key active transportation destinations?	Score for active transportation or transit improvements within 1/4 mile of designated active transportation facilities in the Active Transportation Plan, this includes transit transfer stations, Ferries, Parks, Naval installations, and schools	Active transportation destinations map (ATP)	0	Project does not include bicycle or pedestrian facilities within 1/4 mile of key active transportation destinations
					3	Project includes both bicycle and pedestrian facilities within 1/4 mile of key active transportation destinations
	3.5	Does the project include transit improvements?	Score based on inclusion or accommodation of infrastructure for transit.	Project information	0	Project does not include any transit infrastructure improvements or accommodation
					1	Project does include minor transit infrastructure improvements or accommodation, i.e. coordination with transit for future bus stops and shelters, construction of pads for bus stops.
					3	Project includes construction of improvements for safety at or near bus stops, i.e. curb bump-outs, mid-block pull-out stops, bus island, sidewalks connecting to bus stops, etc....
	3.6	Does the project include connections to city centers and/or regional centers?	Score based on connecting city and/or regional centers, i.e., downtown Bremerton, PSIC, Silverdale, Charleston business district, Eastside Village, Manette, Wheaton Way/Riddell, and Wheaton Way/Sheridan.	Project information	0	Project does not connect two centers.
					1	Project is on a route between centers.
					3	Project connects two or more centers.
		Maximum score			18	
Concurrency	4.1	Does the project meet existing or future concurrency needs?	Score for projects that correct existing deficiencies required for concurrency for roadway/multimodal within the next 6 years or whether it is for 20 years	Project information	5	The project addresses long-term deficiencies (20 years)
					15	The project addresses existing or short-term deficiencies (6 years)
		Maximum score			15	

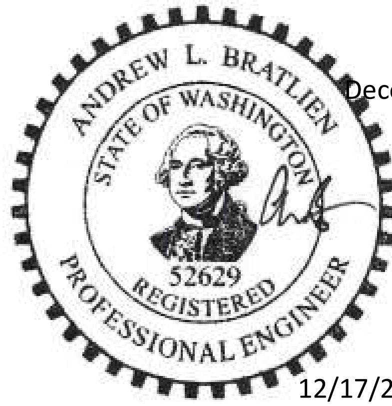
Efficient Mobility	5.1	Does the project provide efficiency and/or reliability for transit? (Including ferries)	Score for projects that include coordination with other agencies or improvements to the roadway system that benefit transit	Project information	0	Project does not include any transit efficiency or reliability improvements
					5	Project includes transit efficiency and reliability improvements, i.e. builds a rapid transit lane
	5.2	Does the project address existing congestion?	Score for potential of project to reduce general purpose traffic delay and congestion	Project information	0	Not considered an area of existing congestion
					5	The project will reduce general delay/congestion, i.e. adaptive signal project increasing roadway capacity
	5.3	Does the project provide for a cross-jurisdictional and coordination opportunity?	Score for whether project involves other jurisdictions/agencies and provides a mutual benefit (i.e., Kitsap County, Port Orchard, Kitsap Transit, U.S. Navy)	Project information	0	The project does not provide an opportunity for coordinating with another jurisdiction/agency.
					5	The project does provide an opportunity for coordinating with another jurisdiction/agency
		Maximum score			15	
Equity and the Environment	6.1	Would the project improve access for underserved communities?	Score for projects that include walking, biking, transit, or motor vehicle access improvements in areas listed in the Washington State Department of Health Tracking Network (WTN) https://fortress.wa.gov/doh/wtn/WTNIBL/	Disadvantaged Communities categories including Socioeconomic Factors	2	Environmental Effects - Proximity to Hazardous Waste Treatment Storage and Disposal Facilities - 1-5=0, 6-10=2
	6.2				2	Environmental Exposures - Proximity to Heavy Traffic Roadways - 1-5=0, 6-10=2
	6.3				2	Socioeconomic Factors - People of Color (Race/Ethnicity) - 1-5=0, 6-10=2
	6.4				2	Socioeconomic Factors - Population living in Poverty - 1-5=0, 6-10=2
	6.5				2	Socioeconomic Factors - Unaffordable Housing - 1-5=0, 6-10=2
	6.6	Would the project improve stormwater management and water quality?	Score for projects that reduce net impervious surface or include green stormwater infrastructure, this includes street trees and expanding the urban canopy	Project information and conceptual design	2	Project includes green stormwater infrastructure and/or new landscaped areas for retention and infiltration
		Maximum score			12	
		Maximum Total Score			**100**	

Attachment B. 2023 Intersection Level of Service Analysis

Transportation Solutions

INNOVATIVE | PRACTICAL | EQUITABLE

Technical Memorandum



December 17, 2024

12/17/2024

TO: Vicki Grover, PE
City of Bremerton Engineering Division

FROM: Andrew L. Bratlien, PE, PTOE
Daniel B. Hodun, EIT

SUBJECT: 2023 Intersection Level of Service Analysis

This memorandum describes the methods, assumptions, and findings of the 2023 intersection Level of Service (LOS) analysis developed in support of the Transportation Element.

LEVEL OF SERVICE BACKGROUND

Level of Service Definition

Level of service (LOS) is a qualitative description of the operating performance of an element of transportation infrastructure such as a roadway or an intersection. LOS is typically expressed as a letter score from LOS A, representing free flow conditions with minimal delays, to LOS F, representing breakdown flow with high delays.

Intersection LOS is defined by the average delay experienced by a vehicle traveling through an intersection. Delay at a signalized intersection can be caused by waiting for the signal or waiting for the queue ahead to clear the signal. Delay at roundabouts and stop-controlled intersections is caused by waiting for a gap in traffic or waiting for a queue to clear the intersection or roundabout.

Level of service for signalized, roundabout, and all-way stop control intersections is based on the average delay for all vehicles entering the intersection during the study period. LOS for minor-approach stop-controlled intersections is based on the control delay on the worst movement.

Intersection LOS thresholds are defined by the Transportation Research Board *Highway Capacity Manual.* Signalized and roundabout intersections utilize different LOS thresholds than stop-controlled intersections. Intersection LOS thresholds for all intersection types are shown in **Table 1**.

Table 1. Level of Service Thresholds

LOS	Signal and Roundabout Delay (sec/veh)	Stop-Controlled Intersection Delay (sec/veh)
A	≤10	≤10
B	>10 – 20	>10 – 15
C	>20 – 35	>15 – 25
D	>35 – 55	>25 – 35
E	>55 – 80	>35 – 50
F	>80	>50

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Level of Service Policy

The Bremerton Comprehensive Plan established a minimum level-of-service (LOS) standard of LOS E for City intersections. Minimum LOS standards for State routes are established by the Washington State Department of Transportation (WSDOT). WSDOT designates SR 3, SR 304 (Burwell St), and SR 310 (Kitsap Way) as Highways of Statewide Significance (HSS), with a minimum LOS D standard. The WSDOT designates SR 303 (Warren Ave) as a non-HSS route with a minimum LOS E/Mitigated standard, meaning that congestion should be mitigated when peak hour LOS falls below LOS E.

FUNCTIONAL CLASSIFICATION

Functional Classification Definition

Functional classification is a method of classifying roadways according to the character of the service they are intended to provide. It provides a conceptual framework for identifying the role of individual streets in serving the two primary goals of a roadway network: access to/from specific locations, and travel mobility.

Functional classification generally indicates a roadway's position on a spectrum between access and mobility, as shown in **Figure 1**. For example, arterials emphasize travel mobility at the expense of land access, while local streets provide land access with less emphasis on mobility.

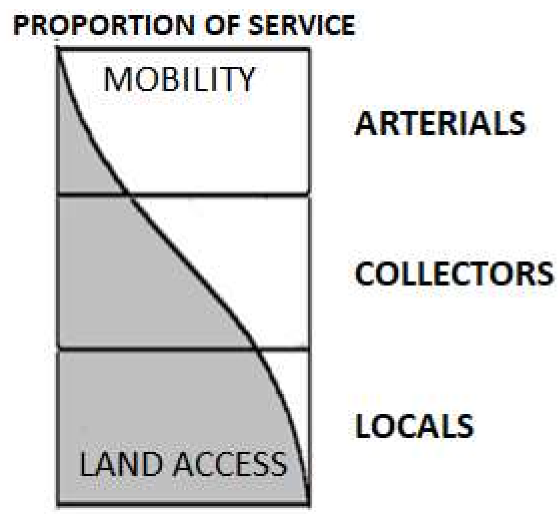

Figure 1. Functional Classification Service
Source: *Functional Classification Comprehensive Guide* (Virginia DOT 2014)

Bremerton Functional Classification System

Washington State cities and counties are required to adopt a street classification system that is consistent with state and federal guidelines. These requirements are codified in RCW 35.78.010 and RCW 47.26.090. Each local jurisdiction is responsible for defining its transportation system into freeway, principal arterial, minor arterial, and collector roadways. All other roadways are assumed to be local access streets. The Bremerton Transportation Element describes the City's functional classification system, including the following:

- **Principal Arterials** serve regional through trips and connect Bremerton with the surrounding region. They prioritize the movement of vehicles and freight, often with limited direct access to abutting land uses. Principal arterials serve high traffic volumes, carrying the greatest portion of through or long-distance traffic within a city. These routes provide key access points to major regional and state highways adjacent to an urban area. Examples include Burwell Street and 11th Street.
- **Minor Arterials** connect centers and facilities within the community and serve some through traffic, while providing a greater level of access to abutting properties. Minor arterials connect with other arterial and collector roads extending into the urban area, and serve less concentrated traffic-generating areas, such as neighborhood shopping centers and schools. These streets also serve as boundaries to neighborhoods and collect traffic from collector

streets. Although the predominant function of minor arterial streets is the movement of through traffic, they also serve significant local traffic with origins or destinations at points along the corridor. Examples include Naval Avenue and 6th Street.

- **Major Collectors** connect two or more neighborhoods or commercial areas while providing a high degree of property access within a localized area. These roadways "collect" traffic from local neighborhoods and carry it to the arterial roadways. Additionally, major collectors provide direct access to services and residential areas, local parks, churches, and areas with similar land uses. Examples include High Avenue and Park Avenue.

ANALYSIS METHODS AND ASSUMPTIONS

Data Collection

Intersection turning movement count data were collected at 60 intersections in and near the City of Bremerton on non-holiday weekdays from 6-8 AM and 3-5 PM during the week of November 6, 2023 and November 13, 2023.

Data collection time periods were identified and validated through review of historical traffic counts and travel speed data. Intersection turning movement counts collected during the most recent citywide data collection effort in 2018 and 2019 indicated weekday morning demand generally peaking before 8:00 AM, with demand tapering between 8:00 and 9:00 AM. Similarly, historical PM peak period intersection turning movement counts indicated weekday afternoon travel demand generally peaking before 5:00 PM.

An analysis of historical travel time data on Naval Avenue and on Burwell Street was also used to confirm intersection turning movement count data collection periods. The travel time analysis utilized data obtained from the TomTom Move "big data" platform for all weekdays in 2023 during the 6:00 – 9:00 AM and 3:00 – 6:00 PM periods. TomTom Move utilizes anonymized real-world location data from smartphones, GPS units, and other location-enabled devices to provide travel analytics such as roadway speeds, travel times, and traffic density.

The analysis considered travel time and Planning Time Index (PTI), a reliability measure defined as the ratio of 95th percentile travel time to free-flow travel time. A PTI of 2.50 would indicate that, for trip that would take 10 minutes in light traffic, 25 minutes should be planned during periods of congestion. Higher PTI values indicate travel time unreliability, which is associated with driver frustration.

The travel time analysis indicated that travel time peaks from 6:00 to 7:00 AM on southbound Naval Avenue and from 3:00 to 4:00 PM on westbound Burwell Street. The 6:00 – 7:00 AM and 3:00 – 4:00 PM hours also indicated a greater variation in travel time, resulting in the highest PTI during the AM and PM analysis periods, respectively. Travel time analysis results are summarized in **Table 2**.

Intersection data collection sites were selected based on roadway functional classification, control type, and location. Sites included all signalized intersections and roundabouts within city limits, all intersections of principal arterial and minor arterial roadways, and other intersections which play a critical role in vehicle mobility and route choice in Bremerton, based on engineering judgment.

Table 2. 2023 Weekday Travel Time Analysis

Period	2023 Weekday Travel Time by Percentile (m:ss)			Planning Time Index (PTI)
	15th	50th	85th	
Southbound Naval Ave from 13th St to 1st St				
6:00 – 7:00 AM	1:39	2:56	7:24	3.15
7:00 – 8:00 AM	1:34	2:31	5:04	1.80
8:00 – 9:00 AM	1:33	2:30	4:43	1.53
Westbound Burwell St from Park Ave to N Callow Ave				
3:00 – 4:00 PM	2:10	2:56	7:00	2.99
4:00 – 5:00 PM	2:07	2:47	6:26	2.89
5:00 – 6:00 PM	2:03	2:36	5:16	2.28

Prior transportation planning efforts in Bremerton relied primarily upon traffic count data collected between 2017 and 2019. Historic traffic count data was determined to be insufficient for this analysis for the following key reasons:

- **COVID-19 Pandemic**: Post-pandemic counts have indicated shifts in travel patterns between 2019 and 2023, due in part to the effect of increased remote work opportunities. These shifts vary by region and are difficult to quantify without updated traffic counts.
- **Naval Base Kitsap**: Some historic traffic counts were collected during the period from 2018 through 2019 when up to two US Navy Nimitz-class supercarriers, the USS Nimitz and the USS Carl Vinson or USS John C. Stennis, were stationed simultaneously at Naval Base Kitsap. Each Nimitz-class supercarrier supports a crew of between 5,000 and 6,500, which can significantly impact travel demand in and around Bremerton. The USS Carl Vinson relocated in 2020, leaving NBK-Bremerton home to one supercarrier at the time of this analysis.
- **New Development**: Bremerton has undergone significant new development since 2019, including major housing and commercial projects. The trip-generating impacts of these new developments were not captured by prior traffic counts.
- **Data Uniformity**: Historic traffic counts were collected during periods of varying pandemic activity, supercarrier status, and development buildout. Travel demand validation and forecasting is based upon the assumption that the forecasting model reflects a “snapshot in time” of travel patterns. The collection of 2023 traffic count data during a two-week period allows greater certainty in the resulting travel demand forecasts.

Roadway alignment, intersection control, and channelization were obtained from the Bremerton 2019 citywide intersection operations model and were verified using aerial photography and field review to reflect 2023 conditions. Traffic signal timing plans were obtained from City and WSDOT staff.

The AM and PM peak hour period for each study intersection is identified in **Table 3**.

Table 3. 2023 Peak Hour Period by Intersection

ID	Name	AM Peak Hour	PM Peak Hour
City of Bremerton Intersections			
13	6th Street & N Montgomery Ave	6:15 – 7:15	3:30 – 4:30
14	6th Street & Naval Ave	6:15 – 7:15	3:30 – 4:30
16	6th Street & Veneta Ave	6:15 – 7:15	3:15 – 4:15
17	6th Street & Warren Ave	7:00 – 8:00	3:30 – 4:30
18	6th Street & Park Ave	6:30 – 7:30	3:15 – 4:15
19	6th Street & Pacific Ave	7:00 – 8:00	3:15 – 4:15
20	6th Street & Washington Ave	6:00 – 7:00	3:15 – 4:15
30	11th Street & N Callow Ave	7:00 – 8:00	4:00 – 5:00
31	11th Street & Naval Ave	7:00 – 8:00	4:00 – 5:00
32	11th Street & High Ave	7:00 – 8:00	3:15 – 4:15
33	11th Street & Park Ave	7:00 – 8:00	3:15 – 4:15
34	Washington Ave & Manette Bridge	7:00 – 8:00	3:30 – 4:30
43	Burwell St & Washington Ave	6:15 – 7:15	3:15 – 4:15
46	Werner Rd & Union Ave/Auto Center Blvd	7:00 – 8:00	3:45 – 4:45
47	Werner/Loxie Eagans & Auto Center Blvd	7:00 – 8:00	3:15 – 4:15
60	Perry Ave & Sheridan Rd	7:00 – 8:00	3:30 – 4:30
67	Perry Ave & 11th Street	7:00 – 8:00	3:15 – 4:15
70	Wheaton Way & Lebo Blvd/ Cherry Ave	7:00 – 8:00	3:30 – 4:30
74	Manette Bridge/ Wheaton Way & Harkins St	7:00 – 8:00	3:30 – 4:30
85	Lebo Blvd & Sheridan Rd	7:00 – 8:00	3:45 – 4:45
88	11th Street & Pacific Ave	7:00 – 8:00	3:30 – 4:30
137	Wheaton Way & Broad St	7:00 – 8:00	4:00 – 5:00
307	Naval Ave & 15th Street	7:00 – 8:00	4:00 – 5:00
WSDOT Intersections in City Limits			
2	Kitsap Way (SR 310) & SR 3 SB Off-Ramp	7:00 – 8:00	3:30 – 4:30
3	Kitsap Way (SR 310) & SR 3 NB Ramp	7:00 – 8:00	3:45 – 4:45
4	Kitsap Way (SR 310) & Shorewood Dr	7:00 – 8:00	3:45 – 4:45
5	Kitsap Way (SR 310) & Ostrich Bay Way	7:00 – 8:00	3:45 – 4:45
6	Kitsap Way (SR 310) & Oyster Bay Ave	7:00 – 8:00	3:45 – 4:45
7	Kitsap Way (SR 310) & National Ave	7:00 – 8:00	4:00 – 5:00
8	Kitsap Way (SR 310) & Marine Dr	7:00 – 8:00	3:45 – 4:45
9	Kitsap Way (SR 310) & Corbett Dr	7:00 – 8:00	3:45 – 4:45
10	Kitsap Way (SR 310) & 11th St	7:00 – 8:00	3:45 – 4:45
11	Kitsap Way (SR 310) & Wycoff Ave	6:15 – 7:15	3:30 – 4:30
12	Kitsap Way (SR 310)/6th St & Callow Ave	6:15 – 7:15	3:30 – 4:30
21	Warren Ave (SR 310) & Burwell St (SR 304)	7:00 – 8:00	3:30 – 4:30

ID	Name	AM Peak Hour	PM Peak Hour
22	Warren Ave (SR 303) & 11th Street	7:00 – 8:00	3:30 – 4:30
23	Warren Ave (SR 303) & 13th Street	7:00 – 8:00	3:45 – 4:45
24	Warren Ave (SR 303) & 16th Street	7:00 – 8:00	3:45 – 4:45
25	Wheaton Way (SR 303) & Sheridan Rd	7:00 – 8:00	3:45 – 4:45
26	Wheaton Way (SR 303) & Sylvan Way	7:00 – 8:00	4:00 – 5:00
27	Wheaton Way (SR 303) & Hollis Street	7:00 – 8:00	4:00 – 5:00
28	Wheaton Way (SR 303) & Riddell Rd	7:00 – 8:00	4:00 – 5:00
35	Burwell St (SR 304) & N Callow Ave	7:00 – 8:00	3:30 – 4:30
36	Burwell St (SR 304) & N Montgomery Ave	7:00 – 8:00	3:30 – 4:30
37	Burwell St (SR 304) & Naval Ave	6:45 – 7:45	3:15 – 4:15
38	Burwell St (SR 304) & State Ave	7:00 – 8:00	3:15 – 4:15
40	Burwell St (SR 304) & Park Ave	6:15 – 7:15	3:30 – 4:30
42	Burwell St (SR 304) & Pacific Ave	6:00 – 7:00	3:15 – 4:15
44	Charleston Blvd (SR 304) & Farragut Ave	6:30 – 7:30	3:15 – 4:15
76	SR 303 SB Ramp & Callahan Dr	7:00 – 8:00	3:45 – 4:45
93	SR 3 NB Ramps & Austin Dr	7:00 – 8:00	3:15 – 4:15
94	SR 3 SB Ramps & Austin Dr	7:00 – 8:00	3:45 – 4:45
104	Loxie Eagans Blvd & SR 3 SB Ramps	7:00 – 8:00	3:00 – 4:00
105	Loxie Eagans Blvd & SR 3 NB ramps	7:00 – 8:00	3:15 – 4:15
216	SR 3 & Imperial Way	7:00 – 8:00	3:00 – 4:00
WSDOT Intersections Outside City Limits			
45	Charleston Blvd (SR 304) & Charleston Beach	6:45 – 7:45	3:00 – 4:00
49	SR 3 SB & Belfair Valley/Sherman Heights	7:00 – 8:00	3:45 – 4:45
202	SR 16 Spur & SR 3	7:00 – 8:00	3:45 – 4:45
328	SR 3 & Airport Rd	7:00 – 8:00	3:15 – 4:15
Kitsap County Intersections			
48	Loxie Eagans Blvd & National Ave	6:45 – 7:45	3:15 – 4:15

Saturation Flow Rate Study

Signalized intersection saturation flow rate, an input in the HCM6 signalized Level of Service (LOS) methodology, is defined as the flow rate which would occur at a signalized intersection approach given saturated conditions and no interruption due to signal phasing. Per the WSDOT "Synchro & SimTraffic Protocol," the preferred method for determining the appropriate value for intersection capacity analysis is to conduct a field study.

Transportation Solutions staff reviewed video footage collected at the westbound approach of Kitsap Way (SR 310) at Marine Drive from 3:00 PM to 5:00 PM on Wednesday, November 8, 2023 and conducted a saturation flow rate study using the Institute of Transportation Engineers (ITE) methodology. The analysis considered 30 signal cycles during the study period and found a saturation flow rate of 1,607 vehicles per hour per lane (vphpl). This saturation flow rate was rounded to 1,610 vphpl for application to the intersection operations analysis described below.

Analysis Methodology

Signalized and stop-controlled intersection operations were analyzed in Synchro 11 software using *Highway Capacity Manual 6th Edition* methodologies. Model inputs were defined according to the Washington State Department of Transportation (WSDOT) Synchro & SimTraffic Protocol. Roundabout intersections were analyzed in Sidra Intersection 9.1 software using the Sidra capacity model and WSDOT Sidra Policy Settings. Peak Hour Factor (PHF) was applied on a per-intersection basis.

Signalized intersection saturation flow rate, an input in the HCM 6 signalized Level of Service (LOS) methodology, is defined as the flow rate which would occur at a signalized intersection approach given saturated conditions and no interruption due to signal phasing. A saturation flow rate of 1,800 vehicles per hour per lane was applied at signalized intersections. This is consistent with WSDOT Olympic Region policy guidance.

NAVAL BASE KITSAP-BREMERTON GATE OPERATIONS

Naval Base Kitsap-Bremerton (NBK-BR) is located on the north side of the Sinclair Inlet within the City of Bremerton. It includes five vehicle/pedestrian gates in the vicinity of the study area intersections.

An analysis of NBK-BR gate operations in the 2023 Joint Compatibility Transportation Plan (JCTP) indicated average peak hour vehicle delay of several minutes per vehicle at the vehicle gates, including an average of 584 seconds (9 minutes and 44 seconds) of delay per vehicle at the Naval Ave gate. Queuing as a result of gate delays spills back onto the City street network, impacting traffic operations and property access during periods of peak congestion.

The queuing resulting with NBK-BR gate operations may impact the study intersections during the AM and PM peak periods. However, because the queuing is not the result of intersection operations but is associated with NBK-BR gate capacity constraints, the gate-related congestion is not reflected in this analysis. Therefore, this analysis acknowledges the ongoing impacts of NBK-BR gate queueing but focuses on traffic operations and capacity constraints at public street intersections, consistent with Washington State Growth Management Act (GMA) requirements for Transportation Element certification.

Some study intersections may appear to operate with higher delay than indicated in the results of this analysis. However, queuing related to NBK-BR gate operations is not reflective of capacity constraints at nearby intersections in Bremerton.

2023 INTERSECTION LOS RESULTS

Intersection LOS results for all study intersections are summarized in **Table 4**. Also identified in Table 4 is the critical lane group volume-to-capacity (v/c) ratio for each intersection, defined as the lane group with the highest (worst) volume-to-capacity ratio. This can indicate locations with capacity constraints, even where overall average delay does not indicate an LOS deficiency. Intersections with existing LOS deficiencies are highlighted in Table 4. Full intersection capacity reports are provided in Attachment 1.

Table 4. 2023 Intersection LOS at Functionally Classified Intersections

ID	Name	Control	LOS Std	2023 AM			2023 PM		
				LOS (Del.)[1]	Crit. Lane[2]	Crit. v/c[3]	LOS (Del.)[1]	Crit. Lane[2]	Crit. v/c[3]
City of Bremerton Intersections									
13	6th Street & N Montgomery Ave	Signal	E	A (2)	EBTR	0.26	A (5)	NB	0.44
14	6th Street & Naval Ave	Signal	E	B (13)	EBR	0.60	B (18)	WBTR	0.68
16	6th Street & Veneta Ave	Signal	E	A (5)	EBR	0.30	A (7)	WBTR	0.48
18	6th Street & Park Ave	Signal	E	A (7)	EBR	0.39	B (14)	NB	0.71
19	6th Street & Pacific Ave	AWSC	E	A (9)	EBTR	0.23	B (12)	EBTR	0.44
20	6th Street & Washington Ave	Signal	E	A (7)	SB	0.69	C (24)	EB	0.93
30	11th Street & N Callow Ave	Signal	E	B (11)	NBL	0.47	B (14)	NBL	0.82
31	11th Street & Naval Ave	Signal	E	B (12)	WBL	0.63	B (13)	NBL	0.81
32	11th Street & High Ave	Signal	E	B (18)	SBL	0.75	A (6)	SBL	0.65
33	11th Street & Park Ave	Signal	E	A (9)	WBTR	0.57	B (18)	WBTR	0.80
34	Washington Ave & Manette Bridge	Signal*	E	B (18)	WBL	0.80	E (62)	WBL	0.97
43	Burwell St & Washington Ave	Signal	E	A (7)	EB	0.51	B (11)	EB	0.72
46	Werner Rd & Union Ave/Auto Center	Signal	E	B (11)	WBTR	0.58	D (36)	WBL	0.93
47	Werner/Loxie Eagans & Auto Center	Signal	E	A (9)	WBL	0.55	B (14)	WBL	0.76
60	Perry Ave & Sheridan Rd	TWSC	E	B (14)	EB	0.29	C (18)	EB	0.45
67	Perry Ave & 11th Street	AWSC	E	A (8)	WB	0.16	A (9)	EB	0.29
70	Wheaton Way & Lebo Blvd/ Cherry Ave	AWSC	E	A (9)	EBTR	0.20	B (11)	NBL	0.43
74	Manette Bridge/ Wheaton Way & Harkins St	RAB	E	A (7)	EB	0.28	A (7)	EB	0.68
85	Lebo Blvd & Sheridan Rd	TWSC	E	B (10)	WB	0.07	B (13)	WB	0.13
88	11th Street & Pacific Ave	AWSC	E	A (10)	WBL	0.32	B (13)	WBL	0.57
307	Naval Ave & 15th Street	Signal	D	A (6)	EB	0.37	A (6)	WB	0.29
WSDOT Intersections in City Limits									
2	Kitsap Way (SR 310) & SR 3 SB Off-Ramp	Signal	D	C (35)	SBLT	0.88	D (44)	SBLT	0.90
3	Kitsap Way (SR 310) & SR 3 NB Ramp	Signal	D	B (17)	WBT	0.81	B (18)	WBT	0.91
4	Kitsap Way (SR 310) & Shorewood Dr	Signal	D	B (17)	EBT	0.92	B (16)	EBT	0.93
5	Kitsap Way (SR 310) & Ostrich Bay Ave	Signal	D	B (16)	WBTR	0.90	C (24)	WBTR	1.01
6	Kitsap Way (SR 310) & Oyster Bay Ave	Signal	D	A (4)	NBL	0.56	A (5)	NBR	0.59
7	Kitsap Way (SR 310) & National Ave	Signal	D	C (21)	EBT	0.92	C (30)	EBT	0.87

ID	Name	Control	LOS Std	2023 AM			2023 PM		
				LOS (Del.)[1]	Crit. Lane[2]	Crit. v/c[3]	LOS (Del.)[1]	Crit. Lane[2]	Crit. v/c[3]
8	Kitsap Way (SR 310) & Marine Dr	Signal	D	D (45)	EBT	0.96	E (69)	WBT	1.15
9	Kitsap Way (SR 310) & Corbett Dr	TWSC	D	D (33)	SB	0.19	D (29)	SB	0.20
10	Kitsap Way (SR 310) & 11th St	Signal	D	B (14)	EBL	0.35	B (19)	EBL	0.61
11	Kitsap Way (SR 310) & Wycoff Ave	Signal	D	A (6)	NB	0.53	A (5)	NB	0.60
12	Kitsap Way (SR 310)/6th St & Callow Ave	Signal	D	B (16)	SBTR	0.82	B (19)	NBTR	0.86
17	Warren Ave (SR 303) & 6th Street	Signal	E	B (18)	EBR	0.70	C (30)	WBTR	0.89
21	Warren Ave (SR 303) & Burwell St (SR 304)	Signal	E*	C (34)	WBT	0.88	D (45)	WBT	0.93
22	Warren Ave (SR 303) & 11th Street	Signal	E*	C (25)	EBL	0.91	E (70)	NBTR	1.04
23	Warren Ave (SR 303) & 13th Street	Signal	E*	B (19)	EB	0.70	A (5)	EB	0.77
24	Warren Ave (SR 303) & 16th Street	Signal	E*	A (8)	NBL	0.84	A (8)	NBL	0.83
25	Wheaton Way (SR 303) & Sheridan Rd	Signal	E*	D (52)	SBTR	0.89	E (58)	NBT	0.98
26	Wheaton Way (SR 303) & Sylvan Way	Signal	E*	C (21)	WBL	0.98	C (29)	WBL	1.07
27	Wheaton Way (SR 303) & Hollis Street	Signal	E*	A (2)	SBTR	0.36	A (7)	NBTR	0.64
28	Wheaton Way (SR 303) & Riddell Rd	Signal	E*	C (27)	WBR	1.00	D (47)	EBR	1.02
35	Burwell St (SR 304) & N Callow Ave	Signal	D	D (44)	WBL	1.07	D (35)	WBL	0.99
36	Burwell St (SR 304) & N Montgomery Ave	Signal	D	A (5)	NB	0.47	A (5)	SB	0.45
37	Burwell St (SR 304) & Naval Ave	Signal	D	B (20)	WBL	0.78	C (29)	NBL	0.82
38	Burwell St (SR 304) & State Ave	Signal	D	A (6)	WB	0.44	A (9)	WB	0.57
40	Burwell St (SR 304) & Park Ave	Signal	D	A (4)	EBT	0.36	A (6)	SB	0.72
42	Burwell St (SR 304) & Pacific Ave	Signal	D	A (8)	EBR	0.56	A (8)	WB	0.52
44	Charleston Blvd (SR 304) & Farragut Ave	Signal	D	B (17)	NBT	0.78	C (25)	WBL	0.91
76	SR 303 SB Ramp & Callahan Dr	TWSC	E	A (9)	WBL	0.07	A (9)	SB	0.08
93	SR 3 NB Ramps & Austin Dr	TWSC	D	B (11)	WBR	0.33	B (12)	WBLT	0.25
94	SR 3 SB Ramps & Austin Dr	TWSC	D	C (17)	EB	0.27	D (26)	EB	0.74
104	Loxie Eagans Blvd & SR 3 SB Ramps	TWSC	D	F (77)	SBLT	0.84	F (>300)	SBLT	1.75
105	Loxie Eagans Blvd & SR 3 NB ramps	Signal	D	A (8)	NBLT	0.68	B (12)	NBLT	0.78

ID	Name	Control	LOS Std	2023 AM			2023 PM		
				LOS (Del.)[1]	Crit. Lane[2]	Crit. v/c[3]	LOS (Del.)[1]	Crit. Lane[2]	Crit. v/c[3]
137	Wheaton Way (SR 303) & Broad St	Signal	E	A (6)	EBTR	0.50	B (10)	NBTR	0.63
216	SR 3 & Imperial Way	Signal	D	B (11)	NBT	0.85	E (74)	SBT	1.15
WSDOT Intersections Outside City Limits									
45	Charleston Blvd (SR 304) & Charleston Beach	Signal	D	A (9)	NBT	0.68	C (22)	EB	0.82
49	SR 3 SB & Belfair Valley/Sherman Heights	AWSC	D	A (8)	NB	0.16	E (38)	SB	0.96
202	SR 16 Spur & SR 3	Signal	D	D (40)	EBT	0.93	E (66)	SBT	1.01
328	SR 3 & Airport Rd	RAB	E	A (9)	NB	0.68	A (9)	SB	0.67
Kitsap County Intersections									
48	Loxie Eagans Blvd & National Ave	Signal	*[4]	C (23)	SBR	0.84	E (77)	SBR	1.32

E*: LOS E/Mitigated standard; LOS-deficient intersections are highlighted
[1]Intersection Level of Service and delay
[2]Critical lane, defined as the lane group with the highest volume-to-capacity ratio
[3]Volume-to-capacity ratio of the critical lane group
[4]Kitsap County has not adopted a minimum intersection LOS standard
*This analysis was developed before construction of new roundabout at Washington Ave & Manette Bridge.

Three intersections within city limits currently operates below its minimum adopted LOS standard. All three LOS-deficient intersections are located on WSDOT-owned routes.

- Kitsap Way (SR 310) & Marine Drive operates at LOS D in the AM peak hour and LOS E in the PM peak hour. In the PM peak hour, the westbound Kitsap Way approach operates overcapacity with v/c ratio of 1.15 and 95th percentile queue of over 1,000 feet. Mitigation may require widening of Kitsap Way on both sides of the intersection. The feasibility of major intersection improvements would need to be evaluated in coordination with WSDOT.
- Loxie Eagans Blvd & SR 3 southbound off-ramp operates at LOS F in both AM and PM peak hours. The stop-controlled SR 3 southbound off-ramp operates with high delay due to high volume on Loxie Eagans Blvd. The intersection is identified for roundabout improvement in the JCTP Preferred Alternative and the SR 16 TNB to SR 3 Congestion Study.
- SR 3 & Imperial Way operates at LOS E in the PM peak hour due to high southbound through demand traveling to Belfair and Mason County. LOS mitigation may include approach widening and rechannelization or installation of a roundabout. The feasibility of major intersection improvements would need to be evaluated in coordination with WSDOT.

Outside Bremerton city limits, two intersections operate below their LOS standard.

- Belfair Valley Rd/Sherman Heights Rd & SR 3 southbound off-ramp intersection operates at LOS E in the PM peak hour due to high southbound vehicle demand on Sherman Heights Rd. Sherman Heights Rd has been observed to operate as an SR 3 bypass route during periods of high congestion, particularly during the PM peak hour. LOS mitigation would encourage greater SR 3 bypass demand by reducing delay.

- SR 16 Spur & SR 3 operates at LOS D in the AM peak hour due to high eastbound through demand traveling into Bremerton and LOS E in the PM peak hour due to high southbound demand. LOS mitigation may include signal timing changes or installation of a roundabout. The feasibility of major intersection improvements would need to be evaluated in coordination with WSDOT.

Seven intersections inside the Bremerton City Limits operate at their minimum adopted LOS standard. These intersections, summarized below, may reach LOS-deficient status with ongoing local and regional growth. Six of the seven intersections identified below are located on WSDOT-owned routes.

- Washington Avenue & Manette Bridge operates at LOS E in the PM peak hour with a v/c ratio of 0.97 on the westbound left-turn movement. This analysis assumed signal control at the intersection. After completion of this analysis, the intersection was reconstructed as a roundabout.
- Kitsap Way (SR 310) & SR 3 southbound off-ramp operates at LOS D in the PM peak hour. The draft West Kitsap Way Planning Study identifies future rechannelization of the SR 3 southbound off-ramp which will provide additional intersection capacity.
- Kitsap Way (SR 310) & Corbett Drive operates at LOS D in the AM and PM peak hours. Minor approach stop-controlled movements operate with high delay during peak periods due to high demand on Kitsap Way.
- Warren Avenue (SR 303) & 11th Street operates at LOS E in the PM peak hour. The eastbound and westbound approaches operate at LOS E, and the northbound approach operates at LOS F.
- Wheaton Way (SR 303) & Sheridan Road operates at LOS E in the PM peak hour. The eastbound and southbound approaches operate at LOS E, and the westbound approach operates at LOS F.
- Burwell Street (SR 304) & N Callow Avenue operates at LOS D in the AM and PM peak hours. The westbound left-turn is the critical movement and operates with v/c of 1.07 in the AM and 0.99 in the PM peak hour.
- Austin Drive & SR 3 southbound off-ramp operates at LOS D in the PM peak hour. The SR 3 southbound off-ramp carries a relatively high right-turn volume, which is likely the result of vehicles bypassing peak hour congestion on southbound SR 3.

Attachment 1. Intersection Capacity Reports

Attachment 1.
Intersection Capacity Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	283	126	208	175	0	24	0	119	504	80	7
Future Volume (veh/h)	0	283	126	208	175	0	24	0	119	504	80	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1547	1547	1522	1522	0	1384	0	1384	1560	1560	1560
Adj Flow Rate, veh/h	0	329	147	242	203	0	28	0	0	652	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	5	5	7	7	0	18	0	18	4	4	4
Cap, veh/h	0	1567	699	295	1953	0	0	0		742	0	
Arrive On Green	0.00	0.53	0.53	0.18	1.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00
Sat Flow, veh/h	0	3017	1311	2812	2968	0		0		2971	0	1322
Grp Volume(v), veh/h	0	329	147	242	203	0		0.0		652	0	0
Grp Sat Flow(s),veh/h/ln	0	1470	1311	1406	1446	0				1485	0	1322
Q Serve(g_s), s	0.0	7.1	7.1	9.9	0.0	0.0				25.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.1	7.1	9.9	0.0	0.0				25.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1567	699	295	1953	0				742	0	
V/C Ratio(X)	0.00	0.21	0.21	0.82	0.10	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	1567	699	434	1953	0				1003	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.99	0.99	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.7	14.7	48.4	0.0	0.0				43.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.7	9.6	0.1	0.0				7.5	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
%ile BackOfQ(95%),veh/ln	0.0	4.3	4.0	6.5	0.1	0.0				15.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.0	15.4	58.0	0.1	0.0				50.8	0.0	0.0
LnGrp LOS	A	B	B	E	A	A				D	A	
Approach Vol, veh/h		476			445						652	
Approach Delay, s/veh		15.2			31.6						50.8	
Approach LOS		B			C						D	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			17.1	68.5		34.5		85.5				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			18.5	31.5		40.5		54.5				
Max Q Clear Time (g_c+I1), s			11.9	9.1		27.3		2.0				
Green Ext Time (p_c), s			0.6	3.1		2.6		1.7				

Intersection Summary		
HCM 6th Ctrl Delay		34.6
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] 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)	60	866	0	0	344	587	50	1	103	0	0	0
Future Volume (veh/h)	60	866	0	0	344	587	50	1	103	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1547	1547	0	0	1572	1572	1510	1510	1510			
Adj Flow Rate, veh/h	70	1007	0	0	400	0	58	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	5	5	0	0	3	3	8	8	8			
Cap, veh/h	1054	2545	0	0	493		72	1				
Arrive On Green	1.00	1.00	0.00	0.00	0.28	0.00	0.05	0.05	0.00			
Sat Flow, veh/h	1474	3017	0	0	3066	1332	1414	24	1279			
Grp Volume(v), veh/h	70	1007	0	0	400	0	59	0	0			
Grp Sat Flow(s),veh/h/ln	1474	1470	0	0	1494	1332	1439	0	1279			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	15.0	0.0	4.9	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	15.0	0.0	4.9	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	1054	2545	0	0	493		73	0				
V/C Ratio(X)	0.07	0.40	0.00	0.00	0.81		0.81	0.00				
Avail Cap(c_a), veh/h	1054	2545	0	0	1693		336	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00			
Upstream Filter(I)	0.76	0.76	0.00	0.00	0.93	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	41.7	0.0	56.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	12.6	0.0	18.4	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			
%ile BackOfQ(95%),veh/ln	0.0	0.2	0.0	0.0	9.5	0.0	3.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	54.3	0.0	74.8	0.0	0.0			
LnGrp LOS	A	A	A	A	D		E	A				
Approach Vol, veh/h		1077			400			59				
Approach Delay, s/veh		0.3			54.3			74.8				
Approach LOS		A			D			E				
Timer - Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				108.9		11.1	84.1	24.8				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				82.0		28.0	9.0	68.0				
Max Q Clear Time (g_c+I1), s				2.0		6.9	2.0	17.0				
Green Ext Time (p_c), s				9.2		0.2	0.1	2.8				
Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR, WBR] 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)	33	878	28	3	764	11	12	2	1	42	0	60
Future Volume (veh/h)	33	878	28	3	764	11	12	2	1	42	0	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		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	1560	1560	1560	1560	1560	1560	1447	1447	1447	1585	1585	1585
Adj Flow Rate, veh/h	38	998	0	3	868	12	14	2	1	48	0	68
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	4	4	4	13	13	13	2	2	2
Cap, veh/h	293	1090		732	2249	1002	99	11	3	168	0	101
Arrive On Green	0.07	0.74	0.00	0.85	1.00	1.00	0.08	0.08	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1485	2964	1322	1485	2964	1320	588	147	46	1418	0	1333
Grp Volume(v), veh/h	38	998	0	3	868	12	17	0	0	48	0	68
Grp Sat Flow(s),veh/h/ln	1485	1482	1322	1485	1482	1320	781	0	0	1418	0	1333
Q Serve(g_s), s	2.0	32.7	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	6.0
Cycle Q Clear(g_c), s	2.0	32.7	0.0	0.0	0.0	0.0	5.0	0.0	0.0	3.9	0.0	6.0
Prop In Lane	1.00		1.00	1.00		1.00	0.82		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	293	1090		732	2249	1002	114	0	0	168	0	101
V/C Ratio(X)	0.13	0.92		0.00	0.39	0.01	0.15	0.00	0.00	0.29	0.00	0.67
Avail Cap(c_a), veh/h	364	1544		732	2249	1002	349	0	0	436	0	355
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.00	0.93	0.93	0.93	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	14.3	0.0	4.0	0.0	0.0	54.1	0.0	0.0	53.0	0.0	54.0
Incr Delay (d2), s/veh	0.2	12.2	0.0	0.0	0.5	0.0	0.6	0.0	0.0	0.9	0.0	7.4
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(95%),veh/ln	1.3	10.1	0.0	0.0	0.3	0.0	0.9	0.0	0.0	2.6	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	26.5	0.0	4.0	0.5	0.0	54.7	0.0	0.0	53.9	0.0	61.4
LnGrp LOS	C	C		A	A	A	D	A	A	D	A	E
Approach Vol, veh/h		1036			883			17			116	
Approach Delay, s/veh		26.5			0.5			54.7			58.3	
Approach LOS		C			A			D			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		14.1	56.2	49.7		14.1	9.3	96.6
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		32.0	10.0	* 63		32.0	10.0	62.5
Max Q Clear Time (g_c+I1), s		7.0	2.0	34.7		8.0	4.0	2.0
Green Ext Time (p_c), s		0.0	0.0	9.5		0.4	0.0	9.2

Intersection Summary	
HCM 6th Ctrl Delay	17.3
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	921	19	16	808	0	64	0	13	0	0	0
Future Volume (veh/h)	0	921	19	16	808	0	64	0	13	0	0	0
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		1.00	0.99		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	1560	1560	1560	1572	1572	1572	1522	1522	1522	1610	1610	1610
Adj Flow Rate, veh/h	0	1047	22	18	918	0	73	0	15	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	0	0	0
Cap, veh/h	780	2309	1008	239	1020	0	153	0	118	0	112	0
Arrive On Green	0.00	1.00	1.00	0.05	0.68	0.00	0.07	0.00	0.07	0.00	0.00	0.00
Sat Flow, veh/h	1485	2964	1294	1497	3066	0	1350	0	1279	0	1610	0
Grp Volume(v), veh/h	0	1047	22	18	918	0	73	0	15	0	0	0
Grp Sat Flow(s),veh/h/ln	1485	1482	1294	1497	1494	0	1350	0	1279	0	1610	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	30.3	0.0	6.4	0.0	1.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.0	30.3	0.0	6.4	0.0	1.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	780	2309	1008	239	1020	0	153	0	118	0	112	0
V/C Ratio(X)	0.00	0.45	0.02	0.08	0.90	0.00	0.48	0.00	0.13	0.00	0.00	0.00
Avail Cap(c_a), veh/h	780	2309	1008	330	1531	0	431	0	381	0	443	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.93	0.93	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	27.7	17.3	0.0	54.9	0.0	50.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.1	11.7	0.0	2.3	0.0	0.5	0.0	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(95%),veh/ln	0.0	0.3	0.0	0.6	11.0	0.0	4.1	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	27.9	29.1	0.0	57.2	0.0	50.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	C	A	E	A	D	A	A	A
Approach Vol, veh/h		1069			936			88			0	
Approach Delay, s/veh		0.6			29.0			56.1			0.0	
Approach LOS		A			C			E				

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		13.3	60.2	46.5		13.3	7.7	99.0
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		33.0	10.0	* 62		33.0	10.0	61.5
Max Q Clear Time (g_c+I1), s		8.4	0.0	32.3		0.0	3.0	2.0
Green Ext Time (p_c), s		0.4	0.0	8.6		0.0	0.0	12.3

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

* 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)	897	23	32	815	49	59
Future Volume (veh/h)	897	23	32	815	49	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1572	1572	1585	1585	1560	1560
Adj Flow Rate, veh/h	1031	26	37	937	56	68
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	2	2	4	4
Cap, veh/h	2307	1007	526	2558	100	136
Arrive On Green	1.00	1.00	0.07	1.00	0.07	0.07
Sat Flow, veh/h	3066	1304	1509	3091	1485	1322
Grp Volume(v), veh/h	1031	26	37	937	56	68
Grp Sat Flow(s),veh/h/ln	1494	1304	1509	1506	1485	1322
Q Serve(g_s), s	0.0	0.0	0.5	0.0	4.4	5.8
Cycle Q Clear(g_c), s	0.0	0.0	0.5	0.0	4.4	5.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2307	1007	526	2558	100	136
V/C Ratio(X)	0.45	0.03	0.07	0.37	0.56	0.50
Avail Cap(c_a), veh/h	2307	1007	611	2558	421	421
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.93	0.93	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	1.8	0.0	54.3	50.9
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.4	4.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.2	0.2	3.2	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.6	0.0	1.9	0.4	59.1	53.8
LnGrp LOS	A	A	A	A	E	D
Approach Vol, veh/h	1057			974	124	
Approach Delay, s/veh	0.5			0.4	56.2	
Approach LOS	A			A	E	

Timer - Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			9.3	97.7		13.1		106.9
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			11.0	60.0		34.0		76.0
Max Q Clear Time (g_c+I1), s			2.5	2.0		7.8		2.0
Green Ext Time (p_c), s			0.0	12.0		0.4		10.3

Intersection Summary	
HCM 6th Ctrl Delay	3.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	833	88	206	810	1	54	0	192	0	1	1
Future Volume (veh/h)	0	833	88	206	810	1	54	0	192	0	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1572	1572	1572	1522	1522	1522	1610	1610	1610
Adj Flow Rate, veh/h	0	915	0	226	890	1	59	0	211	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	0	0	0
Cap, veh/h	1	999		550	2272	3	305	0	235	0	135	135
Arrive On Green	0.00	0.67	0.00	0.73	1.00	1.00	0.18	0.00	0.18	0.00	0.18	0.18
Sat Flow, veh/h	1485	2964	1322	1497	3062	3	1340	0	1284	0	735	735
Grp Volume(v), veh/h	0	915	0	226	434	457	59	0	211	0	0	2
Grp Sat Flow(s),veh/h/ln	1485	1482	1322	1497	1494	1572	1340	0	1284	0	0	1470
Q Serve(g_s), s	0.0	31.6	0.0	6.9	0.0	0.0	4.5	0.0	19.3	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	31.6	0.0	6.9	0.0	0.0	4.6	0.0	19.3	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.50
Lane Grp Cap(c), veh/h	1	999		550	1108	1166	305	0	235	0	0	269
V/C Ratio(X)	0.00	0.92		0.41	0.39	0.39	0.19	0.00	0.90	0.00	0.00	0.01
Avail Cap(c_a), veh/h	130	1445		550	1108	1166	401	0	326	0	0	374
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.89	0.00	0.86	0.86	0.86	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.1	0.0	11.0	0.0	0.0	42.0	0.0	47.9	0.0	0.0	40.1
Incr Delay (d2), s/veh	0.0	13.0	0.0	0.4	0.9	0.9	0.3	0.0	20.7	0.0	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(95%),veh/ln	0.0	11.6	0.0	3.4	0.5	0.5	2.7	0.0	11.9	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.1	0.0	11.4	0.9	0.9	42.3	0.0	68.7	0.0	0.0	40.1
LnGrp LOS	A	C		B	A	A	D	A	E	A	A	D
Approach Vol, veh/h		915			1117			270			2	
Approach Delay, s/veh		31.1			3.0			62.9			40.1	
Approach LOS		C			A			E			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.5	48.6	44.9		26.5	0.0	93.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.5	17.5	58.5		30.5	10.5	65.5				
Max Q Clear Time (g_c+I1), s		21.3	8.9	33.6		2.1	0.0	2.0				
Green Ext Time (p_c), s		0.7	0.4	6.9		0.0	0.0	6.6				
Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									

Notes

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)	57	923	41	29	846	37	47	20	53	89	21	122
Future Volume (veh/h)	57	923	41	29	846	37	47	20	53	89	21	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	0.98		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	1560	1560	1560	1572	1572	1572	1572	1572	1572	1560	1560	1560
Adj Flow Rate, veh/h	62	1003	45	32	920	40	51	22	58	97	23	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	3	3	3	3	3	3	4	4	4
Cap, veh/h	482	1046	452	447	975	425	121	117	98	277	28	162
Arrive On Green	0.65	0.71	0.71	0.30	0.33	0.33	0.04	0.07	0.07	0.11	0.14	0.14
Sat Flow, veh/h	1485	2964	1280	1497	2987	1300	1497	1572	1311	1485	198	1146
Grp Volume(v), veh/h	62	1003	45	32	920	40	51	22	58	97	0	156
Grp Sat Flow(s),veh/h/ln	1485	1482	1280	1497	1494	1300	1497	1572	1311	1485	0	1345
Q Serve(g_s), s	1.9	37.0	1.3	1.8	36.0	2.6	0.0	1.6	5.1	0.0	0.0	13.5
Cycle Q Clear(g_c), s	1.9	37.0	1.3	1.8	36.0	2.6	0.0	1.6	5.1	0.0	0.0	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.85
Lane Grp Cap(c), veh/h	482	1046	452	447	975	425	121	117	98	277	0	190
V/C Ratio(X)	0.13	0.96	0.10	0.07	0.94	0.09	0.42	0.19	0.59	0.35	0.00	0.82
Avail Cap(c_a), veh/h	482	1111	480	447	996	433	160	472	393	277	0	415
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)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	16.9	11.6	30.2	39.3	28.1	55.2	52.1	53.8	46.2	0.0	50.0
Incr Delay (d2), s/veh	0.1	16.3	0.3	0.1	18.0	0.4	4.9	0.8	5.6	0.8	0.0	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	12.0	0.8	1.2	21.7	1.5	3.0	1.2	3.3	4.8	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	33.2	12.0	30.3	57.3	28.5	60.1	52.9	59.4	46.9	0.0	58.5
LnGrp LOS	B	C	B	C	E	C	E	D	E	D	A	E
Approach Vol, veh/h		1110			992			131			253	
Approach Delay, s/veh		31.3			55.3			58.6			54.1	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	13.9	40.8	47.3	9.9	22.0	44.0	44.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	36.0	10.0	45.0	8.0	37.0	15.0	40.0
Max Q Clear Time (g_c+I1), s	2.0	7.1	3.8	39.0	2.0	15.5	3.9	38.0
Green Ext Time (p_c), s	0.1	0.3	0.0	3.3	0.1	0.9	0.1	1.2

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1027	3	15	864	8	1	1	7	6	0	49
Future Vol, veh/h	15	1027	3	15	864	8	1	1	7	6	0	49
Conflicting Peds, #/hr	3	0	2	2	0	3	2	0	2	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	22	22	22	0	0	0
Mvmt Flow	16	1104	3	16	929	9	1	1	8	6	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	941	0	0	1109	0	0	1638	2111	557	1557	2110	475
Stage 1	-	-	-	-	-	-	1138	1138	-	969	969	-
Stage 2	-	-	-	-	-	-	500	973	-	588	1141	-
Critical Hdwy	4.18	-	-	4.16	-	-	7.94	6.94	7.34	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.94	5.94	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.94	5.94	-	6.5	5.5	-
Follow-up Hdwy	2.24	-	-	2.23	-	-	3.72	4.22	3.52	3.5	4	3.3
Pot Cap-1 Maneuver	712	-	-	620	-	-	54	39	426	78	52	541
Stage 1	-	-	-	-	-	-	183	236	-	276	334	-
Stage 2	-	-	-	-	-	-	473	287	-	467	278	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	710	-	-	619	-	-	47	37	424	72	49	539
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	37	-	72	49	-
Stage 1	-	-	-	-	-	-	179	230	-	269	325	-
Stage 2	-	-	-	-	-	-	415	279	-	445	271	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	32.8	19
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	139	710	-	-	619	-	-	316
HCM Lane V/C Ratio	0.07	0.023	-	-	0.026	-	-	0.187
HCM Control Delay (s)	32.8	10.2	-	-	11	-	-	19
HCM Lane LOS	D	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	525	0	204	8	0	579
Future Volume (veh/h)	525	0	204	8	0	579
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	1560	1560	1572	1572	0	1560
Adj Flow Rate, veh/h	583	0	227	9	0	643
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	3	3	0	4
Cap, veh/h	1681	2803	928	37	0	0
Arrive On Green	0.58	0.00	0.63	0.63	0.00	0.00
Sat Flow, veh/h	2882	3042	3008	116	0	
Grp Volume(v), veh/h	583	0	115	121	0.0	
Grp Sat Flow(s),veh/h/ln	1441	1482	1494	1551		
Q Serve(g_s), s	12.7	0.0	4.0	4.1		
Cycle Q Clear(g_c), s	12.7	0.0	4.0	4.1		
Prop In Lane	1.00			0.07		
Lane Grp Cap(c), veh/h	1681	2803	473	491		
V/C Ratio(X)	0.35	0.00	0.24	0.25		
Avail Cap(c_a), veh/h	1681	2803	492	511		
HCM Platoon Ratio	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	13.1	0.0	15.8	15.8		
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	7.2	0.0	2.4	2.5		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.2	0.0	16.1	16.1		
LnGrp LOS	B	A	B	B		
Approach Vol, veh/h		583	236			
Approach Delay, s/veh		13.2	16.1			
Approach LOS		B	B			

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	76.5	43.5				120.0
Change Period (Y+Rc), s	6.5	5.5				6.5
Max Green Setting (Gmax), s	34.5	39.5				83.5
Max Q Clear Time (g_c+I1), s	14.7	6.1				0.0
Green Ext Time (p_c), s	2.7	1.6				0.0

Intersection Summary						
HCM 6th Ctrl Delay			14.0			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	594	6	15	168	8	2	2	45	10	4	1
Future Volume (veh/h)	4	594	6	15	168	8	2	2	45	10	4	1
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		0.99	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	1597	1597	1597	1610	1610	1610	1585	1585	1585	1610	1610	1610
Adj Flow Rate, veh/h	4	639	6	16	181	9	2	2	48	11	4	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	0	0	0
Cap, veh/h	1049	2517	1096	753	2500	124	32	4	62	95	27	5
Arrive On Green	0.01	1.00	1.00	0.01	0.57	0.57	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1521	3035	1322	1533	2963	146	25	79	1245	890	542	95
Grp Volume(v), veh/h	4	639	6	16	93	97	52	0	0	16	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1322	1533	1530	1580	1349	0	0	1527	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.2	3.3	3.3	1.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.2	3.3	3.3	4.6	0.0	0.0	1.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	0.04		0.92	0.69		0.06
Lane Grp Cap(c), veh/h	1049	2517	1096	753	1290	1333	99	0	0	127	0	0
V/C Ratio(X)	0.00	0.25	0.01	0.02	0.07	0.07	0.53	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1167	2517	1096	836	1290	1333	233	0	0	269	0	0
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	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	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.6	0.0	0.0	1.4	4.8	4.8	56.3	0.0	0.0	54.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.1	4.3	0.0	0.0	0.4	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(95%),veh/ln	0.0	0.2	0.0	0.1	1.5	1.6	3.0	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.6	0.2	0.0	1.4	4.9	4.9	60.6	0.0	0.0	55.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		649			206			52			16	
Approach Delay, s/veh		0.2			4.6			60.6			55.1	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		10.0	6.5	103.5		10.0	4.7	105.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		18.0	9.0	81.0		18.0	10.0	80.0
Max Q Clear Time (g_c+I1), s		6.6	2.2	2.0		3.2	2.1	5.3
Green Ext Time (p_c), s		0.1	0.0	5.5		0.0	0.0	1.3

Intersection Summary			
HCM 6th Ctrl Delay			5.6
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	518	121	88	159	8	32	53	39	21	125	5
Future Volume (veh/h)	8	518	121	88	159	8	32	53	39	21	125	5
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1597	1597	1597	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	9	569	133	97	175	9	35	58	43	23	137	5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	885	1650	384	646	2112	108	125	100	74	154	167	6
Arrive On Green	0.03	1.00	1.00	0.02	0.24	0.24	0.03	0.12	0.12	0.02	0.11	0.11
Sat Flow, veh/h	1509	2413	562	1521	2938	150	1509	844	626	1521	1531	56
Grp Volume(v), veh/h	9	354	348	97	90	94	35	0	101	23	0	142
Grp Sat Flow(s),veh/h/ln	1509	1506	1469	1521	1518	1570	1509	0	1470	1521	0	1587
Q Serve(g_s), s	0.2	0.0	0.0	2.0	5.5	5.6	2.5	0.0	7.8	1.6	0.0	10.5
Cycle Q Clear(g_c), s	0.2	0.0	0.0	2.0	5.5	5.6	2.5	0.0	7.8	1.6	0.0	10.5
Prop In Lane	1.00		0.38	1.00		0.10	1.00		0.43	1.00		0.04
Lane Grp Cap(c), veh/h	885	1030	1005	646	1091	1129	125	0	174	154	0	173
V/C Ratio(X)	0.01	0.34	0.35	0.15	0.08	0.08	0.28	0.00	0.58	0.15	0.00	0.82
Avail Cap(c_a), veh/h	992	1030	1005	700	1091	1129	212	0	319	256	0	344
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	0.86	0.00	0.86	0.97	0.00	0.97
Uniform Delay (d), s/veh	5.5	0.0	0.0	4.2	15.0	15.0	46.5	0.0	50.1	46.8	0.0	52.3
Incr Delay (d2), s/veh	0.0	0.9	0.9	0.1	0.1	0.1	0.4	0.0	1.9	0.2	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.5	0.5	1.1	3.6	3.8	1.7	0.0	5.4	1.1	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	0.9	0.9	4.3	15.1	15.1	46.9	0.0	52.0	47.0	0.0	59.1
LnGrp LOS	A	A	A	A	B	B	D	A	D	D	A	E
Approach Vol, veh/h		711			281			136			165	
Approach Delay, s/veh		1.0			11.4			50.7			57.5	
Approach LOS		A			B			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	18.2	9.8	86.1	7.1	17.1	5.6	90.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	26.0	10.0	58.0	10.0	26.0	10.0	58.0
Max Q Clear Time (g_c+I1), s	3.6	9.8	4.0	2.0	4.5	12.5	2.2	7.6
Green Ext Time (p_c), s	0.0	0.4	0.1	4.4	0.0	0.5	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	543	43	34	243	1	11	0	10	0	2	1
Future Volume (veh/h)	3	543	43	34	243	1	11	0	10	0	2	1
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		1.00	0.98		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	1585	1585	1585	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	3	603	48	38	270	1	12	0	11	0	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	0	0	0
Cap, veh/h	980	2327	185	764	2655	10	68	6	26	0	39	20
Arrive On Green	0.01	1.00	1.00	0.04	0.86	0.86	0.04	0.00	0.04	0.00	0.04	0.04
Sat Flow, veh/h	1509	2820	224	1521	3101	11	580	146	665	0	1006	503
Grp Volume(v), veh/h	3	321	330	38	132	139	23	0	0	0	0	3
Grp Sat Flow(s),veh/h/ln	1509	1506	1539	1521	1518	1595	1391	0	0	0	0	1509
Q Serve(g_s), s	0.0	0.0	0.0	0.4	1.6	1.6	1.0	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	1.6	1.6	1.9	0.0	0.0	0.0	0.0	0.2
Prop In Lane	1.00		0.15	1.00		0.01	0.52		0.48	0.00		0.33
Lane Grp Cap(c), veh/h	980	1242	1269	764	1299	1366	100	0	0	0	0	59
V/C Ratio(X)	0.00	0.26	0.26	0.05	0.10	0.10	0.23	0.00	0.00	0.00	0.00	0.05
Avail Cap(c_a), veh/h	1099	1242	1269	836	1299	1366	367	0	0	0	0	352
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)	0.93	0.93	0.93	1.00	1.00	1.00	0.99	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	1.0	1.4	1.4	56.3	0.0	0.0	0.0	0.0	55.5
Incr Delay (d2), s/veh	0.0	0.5	0.5	0.0	0.2	0.1	0.9	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.0	0.3	0.3	0.1	0.7	0.7	1.3	0.0	0.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.5	0.5	1.0	1.5	1.5	57.1	0.0	0.0	0.0	0.0	55.8
LnGrp LOS	A	A	A	A	A	A	E	A	A	A	A	E
Approach Vol, veh/h		654			309			23			3	
Approach Delay, s/veh		0.5			1.4			57.1			55.8	
Approach LOS		A			A			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.7	8.3	103.0		8.7	4.6	106.7				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	10.0	70.0		28.0	10.0	70.0				
Max Q Clear Time (g_c+I1), s		3.9	2.4	2.0		2.2	2.0	3.6				
Green Ext Time (p_c), s		0.1	0.0	3.9		0.0	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			2.3									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	377	153	145	228	9	46	49	46	14	87	7
Future Volume (veh/h)	7	377	153	145	228	9	46	49	46	14	87	7
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		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1597	1597	1597	1572	1572	1572	1610	1610	1610
Adj Flow Rate, veh/h	7	397	161	153	240	9	48	52	48	15	92	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	1	1	1	3	3	3	0	0	0
Cap, veh/h	546	673	269	457	1228	46	344	190	155	320	310	23
Arrive On Green	0.01	0.32	0.32	0.10	0.41	0.41	0.05	0.12	0.12	0.04	0.11	0.11
Sat Flow, veh/h	1509	2090	836	1521	2982	111	1497	1558	1272	1533	2882	217
Grp Volume(v), veh/h	7	284	274	153	122	127	48	50	50	15	48	51
Grp Sat Flow(s),veh/h/ln	1509	1506	1420	1521	1518	1576	1497	1494	1336	1533	1530	1570
Q Serve(g_s), s	0.1	6.8	6.9	2.6	2.2	2.2	0.0	1.3	1.5	0.0	1.2	1.3
Cycle Q Clear(g_c), s	0.1	6.8	6.9	2.6	2.2	2.2	0.0	1.3	1.5	0.0	1.2	1.3
Prop In Lane	1.00		0.59	1.00		0.07	1.00		0.95	1.00		0.14
Lane Grp Cap(c), veh/h	546	485	457	457	625	649	344	182	163	320	165	169
V/C Ratio(X)	0.01	0.59	0.60	0.34	0.19	0.20	0.14	0.27	0.31	0.05	0.29	0.30
Avail Cap(c_a), veh/h	1078	1248	1177	1034	1435	1490	1160	890	796	819	554	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	12.1	12.2	8.1	8.1	8.1	16.9	17.1	17.2	17.2	17.6	17.6
Incr Delay (d2), s/veh	0.0	1.4	1.5	0.5	0.2	0.2	0.2	1.0	1.3	0.1	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	3.7	3.6	1.3	1.1	1.1	0.7	0.8	0.8	0.2	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	13.5	13.7	8.6	8.2	8.2	17.1	18.0	18.4	17.2	18.8	18.8
LnGrp LOS	A	B	B	A	A	A	B	B	B	B	B	B
Approach Vol, veh/h		565			402			148			114	
Approach Delay, s/veh		13.6			8.4			17.9			18.6	
Approach LOS		B			A			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	9.7	8.8	18.3	6.7	9.1	4.9	22.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	25.5	20.5	35.5	25.5	15.5	15.5	40.5
Max Q Clear Time (g_c+I1), s	2.0	3.5	4.6	8.9	2.0	3.3	2.1	4.2
Green Ext Time (p_c), s	0.0	0.6	0.5	4.7	0.1	0.4	0.0	1.9

Intersection Summary			
HCM 6th Ctrl Delay			12.8
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	366	45	11	338	4	11	3	12	2	4	10
Future Volume (veh/h)	6	366	45	11	338	4	11	3	12	2	4	10
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		1.00	0.97		0.98	0.97		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	1585	1585	1585	1585	1585	1585	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	6	389	48	12	360	4	12	3	13	2	4	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	148	1298	157	162	1455	16	261	57	102	170	63	140
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	10	2626	319	28	2943	32	391	362	652	90	400	898
Grp Volume(v), veh/h	236	0	207	197	0	179	28	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	1579	0	1375	1567	0	1436	1405	0	0	1388	0	0
Q Serve(g_s), s	0.0	0.0	2.3	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	2.3	1.9	0.0	1.8	0.4	0.0	0.0	0.3	0.0	0.0
Prop In Lane	0.03		0.23	0.06		0.02	0.43		0.46	0.12		0.65
Lane Grp Cap(c), veh/h	924	0	679	922	0	710	419	0	0	373	0	0
V/C Ratio(X)	0.26	0.00	0.30	0.21	0.00	0.25	0.07	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	3519	0	2962	3452	0	3095	1298	0	0	1254	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	3.9	3.8	0.0	3.8	9.3	0.0	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.9	0.4	0.0	0.7	0.2	0.0	0.0	0.2	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(95%),veh/ln	0.7	0.0	0.7	0.6	0.0	0.6	0.2	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	0.0	4.8	4.2	0.0	4.4	9.6	0.0	0.0	9.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		443			376			28			17	
Approach Delay, s/veh		4.6			4.3			9.6			9.5	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.2		8.5		17.2		8.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		55.5		20.5		55.5		20.5
Max Q Clear Time (g_c+I1), s		4.3		2.3		3.9		2.4
Green Ext Time (p_c), s		8.4		0.1		6.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	212	22	19	114	22	34	462	22	89	450	134
Future Volume (veh/h)	86	212	22	19	114	22	34	462	22	89	450	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1585	1585	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	91	226	23	20	121	23	36	491	23	95	479	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	242	328	33	192	256	47	611	1790	84	611	1418	420
Arrive On Green	0.07	0.12	0.12	0.05	0.10	0.10	0.04	0.61	0.61	0.10	1.00	1.00
Sat Flow, veh/h	1509	2757	278	1509	2529	469	1509	2929	137	1497	2263	671
Grp Volume(v), veh/h	91	122	127	20	71	73	36	252	262	95	315	307
Grp Sat Flow(s),veh/h/ln	1509	1506	1529	1509	1506	1492	1509	1506	1560	1497	1494	1441
Q Serve(g_s), s	5.8	8.6	8.8	1.2	4.9	5.1	0.9	8.6	8.6	2.5	0.0	0.0
Cycle Q Clear(g_c), s	5.8	8.6	8.8	1.2	4.9	5.1	0.9	8.6	8.6	2.5	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.31	1.00		0.09	1.00		0.47
Lane Grp Cap(c), veh/h	242	179	182	192	152	151	611	920	954	611	936	902
V/C Ratio(X)	0.38	0.68	0.70	0.10	0.47	0.49	0.06	0.27	0.27	0.16	0.34	0.34
Avail Cap(c_a), veh/h	345	472	480	227	376	373	700	920	954	663	936	902
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	40.1	46.5	46.5	40.0	46.6	46.7	7.0	10.0	10.0	6.7	0.0	0.0
Incr Delay (d2), s/veh	1.2	5.4	5.6	0.2	2.2	2.4	0.0	0.7	0.7	0.1	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	6.3	6.5	0.9	3.5	3.6	0.5	5.2	5.4	1.3	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	51.9	52.2	40.2	48.8	49.1	7.0	10.7	10.7	6.8	0.8	0.9
LnGrp LOS	D	D	D	D	D	D	A	B	B	A	A	A
Approach Vol, veh/h		340			164			550			717	
Approach Delay, s/veh		49.1			47.9			10.5			1.6	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	71.7	10.5	17.6	8.5	73.4	12.5	15.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	39.5	8.5	34.5	10.5	38.5	15.5	27.5
Max Q Clear Time (g_c+I1), s	4.5	10.6	3.2	10.8	2.9	2.0	7.8	7.1
Green Ext Time (p_c), s	0.1	4.0	0.0	1.8	0.0	5.4	0.1	0.7

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	154	167	3	124	2	9	11	3	9	83	24
Future Volume (veh/h)	14	154	167	3	124	2	9	11	3	9	83	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.98		1.00	0.97		0.94	0.95		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	1585	1585	1585	1585	1585	1585	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	16	173	188	3	139	2	10	12	3	10	93	27
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	1	1	1
Cap, veh/h	161	580	479	137	588	8	294	263	51	155	336	92
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	48	1523	1258	9	1545	22	379	906	175	47	1156	315
Grp Volume(v), veh/h	189	0	188	144	0	0	25	0	0	130	0	0
Grp Sat Flow(s),veh/h/ln	1572	0	1258	1576	0	0	1460	0	0	1518	0	0
Q Serve(g_s), s	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	3.0	1.7	0.0	0.0	0.3	0.0	0.0	1.8	0.0	0.0
Prop In Lane	0.08		1.00	0.02		0.01	0.40		0.12	0.08		0.21
Lane Grp Cap(c), veh/h	741	0	479	734	0	0	608	0	0	583	0	0
V/C Ratio(X)	0.26	0.00	0.39	0.20	0.00	0.00	0.04	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	1876	0	1401	1878	0	0	1769	0	0	1821	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.0	0.0	6.2	5.8	0.0	0.0	7.0	0.0	0.0	7.5	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.1	0.3	0.0	0.0	0.1	0.0	0.0	0.4	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(95%),veh/ln	0.9	0.0	1.1	0.7	0.0	0.0	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	7.3	6.1	0.0	0.0	7.1	0.0	0.0	7.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		377			144			25			130	
Approach Delay, s/veh		6.8			6.1			7.1			7.9	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.5		14.9		12.5		14.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		30.5		30.5		30.5		30.5				
Max Q Clear Time (g_c+I1), s		2.3		5.0		3.8		3.7				
Green Ext Time (p_c), s		0.2		3.9		1.4		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			6.9									
HCM 6th LOS			A									

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	94	51	23	101	8	18	10	9	12	32	14
Future Vol, veh/h	25	94	51	23	101	8	18	10	9	12	32	14
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	3	3	3
Mvmt Flow	30	113	61	28	122	10	22	12	11	14	39	17
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	8.9	8.7	8.7	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	64%	0%	100%	0%	100%	0%	21%
Vol Thru, %	36%	0%	0%	65%	0%	93%	55%
Vol Right, %	0%	100%	0%	35%	0%	7%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	9	25	145	23	109	58
LT Vol	18	0	25	0	23	0	12
Through Vol	10	0	0	94	0	101	32
RT Vol	0	9	0	51	0	8	14
Lane Flow Rate	34	11	30	175	28	131	70
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.055	0.015	0.046	0.232	0.043	0.182	0.105
Departure Headway (Hd)	5.872	4.844	5.531	4.782	5.533	4.979	5.387
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	610	738	648	751	648	721	665
Service Time	3.609	2.581	3.258	2.508	3.26	2.706	3.422
HCM Lane V/C Ratio	0.056	0.015	0.046	0.233	0.043	0.182	0.105
HCM Control Delay	9	7.7	8.5	9	8.5	8.8	9.1
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0.1	0.9	0.1	0.7	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	10	22	154	243	109
Future Volume (veh/h)	36	10	22	154	243	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.96
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	1560	1560	1409	1409	1560	1560
Adj Flow Rate, veh/h	41	11	25	175	276	124
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	16	16	4	4
Cap, veh/h	98	26	452	835	397	179
Arrive On Green	0.09	0.09	0.04	0.59	0.39	0.39
Sat Flow, veh/h	1118	300	1342	1409	1007	452
Grp Volume(v), veh/h	53	0	25	175	0	400
Grp Sat Flow(s),veh/h/ln	1445	0	1342	1409	0	1459
Q Serve(g_s), s	1.0	0.0	0.3	1.6	0.0	6.4
Cycle Q Clear(g_c), s	1.0	0.0	0.3	1.6	0.0	6.4
Prop In Lane	0.77	0.21	1.00			0.31
Lane Grp Cap(c), veh/h	126	0	452	835	0	576
V/C Ratio(X)	0.42	0.00	0.06	0.21	0.00	0.69
Avail Cap(c_a), veh/h	1310	0	1141	2780	0	1841
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	12.2	0.0	4.8	2.7	0.0	7.1
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	0.1	0.2	0.0	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.8	0.0	4.9	2.8	0.0	8.2
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	53			200	400	
Approach Delay, s/veh	13.8			3.0	8.2	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.2		7.0	5.6	15.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		55.5		25.5	15.5	35.5
Max Q Clear Time (g_c+I1), s		3.6		3.0	2.3	8.4
Green Ext Time (p_c), s		1.0		0.1	0.0	2.4
Intersection Summary						
HCM 6th Ctrl Delay			7.1			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	537	270	0	0	174	24	0	1	1	82	4	363
Future Volume (veh/h)	537	270	0	0	174	24	0	1	1	82	4	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	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	1585	1585	1585	0	1522	1522	1610	1610	1610	1547	1547	1547
Adj Flow Rate, veh/h	559	281	0	0	181	25	0	1	1	85	4	378
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	7	7	0	0	0	5	5	5
Cap, veh/h	760	758	0	0	205	170	0	13	13	288	14	927
Arrive On Green	0.50	0.50	0.00	0.00	0.13	0.13	0.00	0.02	0.02	0.20	0.20	0.20
Sat Flow, veh/h	1509	1585	0	0	1522	1261	0	732	732	1410	66	1308
Grp Volume(v), veh/h	559	281	0	0	181	25	0	0	2	89	0	378
Grp Sat Flow(s),veh/h/ln	1509	1506	0	0	1522	1261	0	0	1463	1477	0	1308
Q Serve(g_s), s	41.5	16.2	0.0	0.0	16.6	2.5	0.0	0.0	0.2	7.2	0.0	16.9
Cycle Q Clear(g_c), s	41.5	16.2	0.0	0.0	16.6	2.5	0.0	0.0	0.2	7.2	0.0	16.9
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.50	0.96		1.00
Lane Grp Cap(c), veh/h	760	758	0	0	205	170	0	0	25	302	0	927
V/C Ratio(X)	0.74	0.37	0.00	0.00	0.88	0.15	0.00	0.00	0.08	0.30	0.00	0.41
Avail Cap(c_a), veh/h	760	758	0	0	225	187	0	0	330	302	0	927
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.95	0.00	0.95
Uniform Delay (d), s/veh	27.8	21.5	0.0	0.0	60.4	54.3	0.0	0.0	68.7	47.8	0.0	8.5
Incr Delay (d2), s/veh	4.6	0.6	0.0	0.0	38.5	1.8	0.0	0.0	1.9	1.4	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.5	10.0	0.0	0.0	13.5	1.6	0.0	0.0	0.2	5.1	0.0	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	22.2	0.0	0.0	98.9	56.1	0.0	0.0	70.6	49.3	0.0	9.3
LnGrp LOS	C	C	A	A	F	E	A	A	E	D	A	A
Approach Vol, veh/h		840			206			2			467	
Approach Delay, s/veh		29.0			93.7			70.6			16.9	
Approach LOS		C			F			E			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	7.4	76.5	34.0	24.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	32.0	40.0	29.0	21.0
Max Q Clear Time (g_c+I1), s	2.2	43.5	18.9	18.6
Green Ext Time (p_c), s	0.0	0.0	3.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	391	187	23	0	203	42	11	548	10	84	673	414
Future Volume (veh/h)	391	187	23	0	203	42	11	548	10	84	673	414
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	0	1560	1560	1572	1572	1572	1572	1572	1572
Adj Flow Rate, veh/h	439	210	26	0	228	47	12	616	11	94	756	465
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	0	4	4	3	3	3	3	3	3
Cap, veh/h	482	480	59	0	320	65	283	1286	23	332	1383	836
Arrive On Green	0.29	0.60	0.60	0.00	0.13	0.13	0.01	0.14	0.14	0.10	0.93	0.93
Sat Flow, veh/h	2812	1328	164	0	2529	496	1497	3003	54	1497	2987	1313
Grp Volume(v), veh/h	439	0	236	0	136	139	12	306	321	94	756	465
Grp Sat Flow(s),veh/h/ln	1406	0	1492	0	1482	1465	1497	1494	1563	1497	1494	1313
Q Serve(g_s), s	16.6	0.0	9.4	0.0	9.7	10.0	0.5	20.8	20.8	3.9	4.2	6.7
Cycle Q Clear(g_c), s	16.6	0.0	9.4	0.0	9.7	10.0	0.5	20.8	20.8	3.9	4.2	6.7
Prop In Lane	1.00		0.11	0.00		0.34	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	482	0	539	0	194	192	283	640	669	332	1383	836
V/C Ratio(X)	0.91	0.00	0.44	0.00	0.70	0.73	0.04	0.48	0.48	0.28	0.55	0.56
Avail Cap(c_a), veh/h	499	0	739	0	397	393	360	640	669	371	1383	836
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.99	0.99	0.96	0.96	0.96	0.66	0.66	0.66
Uniform Delay (d), s/veh	38.4	0.0	15.8	0.0	45.8	45.9	17.3	35.9	35.9	17.0	2.3	1.2
Incr Delay (d2), s/veh	21.2	0.0	0.6	0.0	4.5	5.1	0.1	2.5	2.4	0.4	1.0	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.6	0.0	5.0	0.0	6.8	7.0	0.3	13.5	14.0	2.3	1.7	20.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	0.0	16.4	0.0	50.3	51.0	17.3	38.4	38.3	17.4	3.4	2.9
LnGrp LOS	E	A	B	A	D	D	B	D	D	B	A	A
Approach Vol, veh/h		675			275			639			1315	
Approach Delay, s/veh		44.5			50.7			37.9			4.2	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	52.6		46.2	7.3	56.4	25.4	20.9
Change Period (Y+Rc), s	5.5	5.5		6.5	5.5	5.5	6.5	* 6.5
Max Green Setting (Gmax), s	8.5	29.5		54.5	7.5	30.5	19.5	* 30
Max Q Clear Time (g_c+I1), s	5.9	22.8		11.4	2.5	8.7	18.6	12.0
Green Ext Time (p_c), s	0.1	2.4		1.5	0.0	9.0	0.3	1.4

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)	170	14	19	2	7	1	0	985	1	0	1118	150
Future Volume (veh/h)	170	14	19	2	7	1	0	985	1	0	1118	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	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	1535	1535	1535	1610	1610	1610	0	1547	1547	0	1572	1572
Adj Flow Rate, veh/h	179	15	20	2	7	1	0	1037	1	0	1177	158
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, %	6	6	6	0	0	0	0	5	5	0	3	3
Cap, veh/h	266	17	23	76	220	29	0	2215	2	0	1946	260
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.00	1.00	1.00	0.00	0.24	0.24
Sat Flow, veh/h	1126	94	126	200	1203	156	0	3091	3	0	2726	354
Grp Volume(v), veh/h	214	0	0	10	0	0	0	506	532	0	663	672
Grp Sat Flow(s),veh/h/ln	1346	0	0	1558	0	0	0	1470	1547	0	1494	1507
Q Serve(g_s), s	16.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.3	43.6
Cycle Q Clear(g_c), s	17.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	43.3	43.6
Prop In Lane	0.84		0.09	0.20		0.10	0.00		0.00	0.00		0.23
Lane Grp Cap(c), veh/h	307	0	0	325	0	0	0	1080	1137	0	1098	1108
V/C Ratio(X)	0.70	0.00	0.00	0.03	0.00	0.00	0.00	0.47	0.47	0.00	0.60	0.61
Avail Cap(c_a), veh/h	458	0	0	497	0	0	0	1080	1137	0	1098	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.67	0.67	0.00	0.65	0.65
Uniform Delay (d), s/veh	43.6	0.0	0.0	36.9	0.0	0.0	0.0	0.0	0.0	0.0	27.4	27.5
Incr Delay (d2), s/veh	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.9	0.0	1.6	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(95%),veh/ln	10.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5	0.5	0.0	23.3	23.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	0.0	0.0	37.0	0.0	0.0	0.0	1.0	0.9	0.0	29.0	29.2
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	C	C
Approach Vol, veh/h		214			10			1038			1335	
Approach Delay, s/veh		47.1			37.0			1.0			29.1	
Approach LOS		D			D			A			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	85.4	24.6	85.4	24.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	68.5	32.5	68.5	32.5
Max Q Clear Time (g_c+I1), s	2.0	19.0	45.6	2.6
Green Ext Time (p_c), s	14.1	1.2	18.5	0.0

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	11	104	1064	1264	170
Future Volume (veh/h)	15	11	104	1064	1264	170
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	1422	1422	1547	1547	1572	1572
Adj Flow Rate, veh/h	14	15	118	1209	1436	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	15	15	5	5	3	3
Cap, veh/h	43	39	140	2605	2241	
Arrive On Green	0.03	0.03	0.13	1.00	0.75	0.00
Sat Flow, veh/h	1354	1205	1474	3017	3066	1332
Grp Volume(v), veh/h	14	15	118	1209	1436	0
Grp Sat Flow(s),veh/h/ln	1354	1205	1474	1470	1494	1332
Q Serve(g_s), s	1.1	1.3	8.6	0.0	25.4	0.0
Cycle Q Clear(g_c), s	1.1	1.3	8.6	0.0	25.4	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	43	39	140	2605	2241	
V/C Ratio(X)	0.32	0.39	0.84	0.46	0.64	
Avail Cap(c_a), veh/h	326	290	208	2605	2241	
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.83	0.83	1.00	0.00
Uniform Delay (d), s/veh	52.1	52.2	47.2	0.0	6.6	0.0
Incr Delay (d2), s/veh	5.1	7.5	16.7	0.5	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.9	6.6	0.3	11.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.1	59.7	63.9	0.5	8.0	0.0
LnGrp LOS	E	E	E	A	A	
Approach Vol, veh/h	29			1327	1436	
Approach Delay, s/veh	58.5			6.1	8.0	
Approach LOS	E			A	A	

Timer - Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		8.0	15.0	87.0				102.0
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		26.5	15.5	54.5				74.5
Max Q Clear Time (g_c+I1), s		3.3	10.6	27.4				2.0
Green Ext Time (p_c), s		0.1	0.1	17.1				20.4

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] 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)	22	31	137	134	24	79	71	768	100	81	979	19
Future Volume (veh/h)	22	31	137	134	24	79	71	768	100	81	979	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.99	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	1585	1585	1585	1585	1585	1585	1535	1535	1535	1572	1572	1572
Adj Flow Rate, veh/h	24	34	6	146	26	13	77	835	45	88	1064	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	3	3	3
Cap, veh/h	187	85	71	253	182	152	489	961	424	554	1201	23
Arrive On Green	0.04	0.05	0.05	0.10	0.11	0.11	0.30	0.33	0.33	0.37	0.40	0.40
Sat Flow, veh/h	1509	1585	1336	1509	1585	1326	1462	2916	1287	1497	2999	56
Grp Volume(v), veh/h	24	34	6	146	26	13	77	835	45	88	530	554
Grp Sat Flow(s),veh/h/ln	1509	1585	1336	1509	1585	1326	1462	1458	1287	1497	1494	1562
Q Serve(g_s), s	2.0	2.9	0.4	12.4	2.1	0.6	0.3	37.7	2.5	5.5	46.1	46.1
Cycle Q Clear(g_c), s	2.0	2.9	0.4	12.4	2.1	0.6	0.3	37.7	2.5	5.5	46.1	46.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	187	85	71	253	182	152	489	961	424	554	598	626
V/C Ratio(X)	0.13	0.40	0.08	0.58	0.14	0.09	0.16	0.87	0.11	0.16	0.89	0.89
Avail Cap(c_a), veh/h	306	249	210	301	272	227	489	1312	579	554	768	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	58.1	64.1	23.3	53.3	55.8	13.9	34.4	44.1	17.8	29.5	39.0	39.0
Incr Delay (d2), s/veh	0.3	3.1	0.5	2.1	0.4	0.2	0.1	10.5	0.5	0.1	14.7	14.2
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(95%),veh/ln	1.5	2.3	0.4	8.6	1.5	0.8	3.4	21.3	2.0	3.7	25.7	26.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	67.2	23.8	55.3	56.2	14.2	34.5	54.6	18.3	29.6	53.7	53.2
LnGrp LOS	E	E	C	E	E	B	C	D	B	C	D	D
Approach Vol, veh/h		64			185			957			1172	
Approach Delay, s/veh		59.8			52.6			51.3			51.6	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	56.8	51.1	19.6	12.5	46.9	61.1	11.0	21.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	16.0	63.0	19.0	22.0	7.0	72.0	17.0	24.0				
Max Q Clear Time (g_c+I1), s	7.5	39.7	14.4	4.9	2.3	48.1	4.0	4.1				
Green Ext Time (p_c), s	0.1	6.5	0.1	0.1	0.1	7.9	0.0	0.1				

Intersection Summary		
HCM 6th Ctrl Delay		51.8
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	53	118	86	49	85	42	782	68	55	870	21
Future Volume (veh/h)	71	53	118	86	49	85	42	782	68	55	870	21
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		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	1547	1547	1547	1585	1585	1585	1560	1560	1560	1572	1572	1572
Adj Flow Rate, veh/h	78	58	130	95	54	93	46	859	75	60	956	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	2	2	2	4	4	4	3	3	3
Cap, veh/h	93	185	155	97	191	160	417	1880	837	487	1900	46
Arrive On Green	0.06	0.12	0.12	0.06	0.12	0.12	0.07	1.00	1.00	0.05	0.85	0.85
Sat Flow, veh/h	1474	1547	1298	1509	1585	1330	1485	2964	1320	1497	2981	72
Grp Volume(v), veh/h	78	58	130	95	54	93	46	859	75	60	479	500
Grp Sat Flow(s),veh/h/ln	1474	1547	1298	1509	1585	1330	1485	1482	1320	1497	1494	1559
Q Serve(g_s), s	7.3	4.8	13.7	8.8	4.3	9.3	1.5	0.0	0.0	1.9	11.9	11.9
Cycle Q Clear(g_c), s	7.3	4.8	13.7	8.8	4.3	9.3	1.5	0.0	0.0	1.9	11.9	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	93	185	155	97	191	160	417	1880	837	487	952	994
V/C Ratio(X)	0.83	0.31	0.84	0.98	0.28	0.58	0.11	0.46	0.09	0.12	0.50	0.50
Avail Cap(c_a), veh/h	95	365	306	97	374	313	459	1880	837	525	952	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	0.89	0.89	0.89
Uniform Delay (d), s/veh	64.8	56.4	60.3	65.4	56.0	58.2	8.1	0.0	0.0	7.7	4.8	4.8
Incr Delay (d2), s/veh	44.1	1.0	11.1	84.3	0.8	3.3	0.1	0.7	0.2	0.1	1.7	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(95%),veh/ln	7.1	3.5	8.7	9.6	3.3	5.9	0.8	0.3	0.1	1.1	5.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.0	57.3	71.4	149.7	56.8	61.5	8.2	0.7	0.2	7.8	6.5	6.4
LnGrp LOS	F	E	E	F	E	E	A	A	A	A	A	A
Approach Vol, veh/h		266			242			980			1039	
Approach Delay, s/veh		79.3			95.1			1.0			6.5	
Approach LOS		E			F			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	93.8	14.0	21.8	10.0	94.2	13.9	21.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	69.0	9.0	33.0	9.0	69.0	9.0	33.0
Max Q Clear Time (g_c+I1), s	3.9	2.0	10.8	15.7	3.5	13.9	9.3	11.3
Green Ext Time (p_c), s	0.0	8.1	0.0	0.7	0.0	8.1	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	12	0	864	20	11	946	0
Future Volume (veh/h)	0	0	0	11	0	12	0	864	20	11	946	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.97		0.99	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	1610	1610	1610	1572	1572	1572	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	0	0	0	11	0	12	0	891	21	11	975	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	3	3	1	1	1	1	1	1
Cap, veh/h	0	52	0	99	0	43	544	2563	60	596	2720	0
Arrive On Green	0.00	0.00	0.00	0.03	0.00	0.03	0.00	1.00	1.00	0.01	0.90	0.00
Sat Flow, veh/h	0	1610	0	1456	0	1314	1521	3031	71	1521	3115	0
Grp Volume(v), veh/h	0	0	0	11	0	12	0	446	466	11	975	0
Grp Sat Flow(s),veh/h/ln	0	1610	0	1456	0	1314	1521	1518	1585	1521	1518	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	1.2	0.0	0.0	0.0	0.1	6.9	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.0	0.0	1.2	0.0	0.0	0.0	0.1	6.9	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	0	52	0	99	0	43	544	1283	1340	596	2720	0
V/C Ratio(X)	0.00	0.00	0.00	0.11	0.00	0.28	0.00	0.35	0.35	0.02	0.36	0.00
Avail Cap(c_a), veh/h	0	288	0	311	0	235	641	1283	1340	671	2720	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.91	0.91	0.86	0.86	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	66.0	0.0	66.1	0.0	0.0	0.0	1.1	1.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.0	5.0	0.0	0.7	0.7	0.0	0.3	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(95%),veh/ln	0.0	0.0	0.0	0.7	0.0	0.9	0.0	0.4	0.4	0.0	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	66.7	0.0	71.2	0.0	0.7	0.7	1.1	1.4	0.0
LnGrp LOS	A	A	A	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		0			23			912			986	
Approach Delay, s/veh		0.0			69.1			0.7			1.4	
Approach LOS					E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	123.4		9.5	0.0	130.5		9.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	91.0		25.0	9.0	91.0		25.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		0.0	0.0	8.9		3.2				
Green Ext Time (p_c), s	0.0	11.5		0.0	0.0	14.2		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		1.9
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	39	128	33	53	159	66	691	58	76	766	54
Future Volume (veh/h)	90	39	128	33	53	159	66	691	58	76	766	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1585	1585	1560	1560	1560	1560	1560	1560
Adj Flow Rate, veh/h	97	42	138	35	57	171	71	735	62	82	824	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	4	4	4
Cap, veh/h	182	234	198	150	202	171	544	1494	126	184	901	400
Arrive On Green	0.06	0.15	0.15	0.04	0.13	0.13	0.30	0.54	0.54	0.13	0.61	0.61
Sat Flow, veh/h	1509	1585	1340	1509	1585	1343	1485	2766	233	1485	2964	1317
Grp Volume(v), veh/h	97	42	138	35	57	171	71	394	403	82	824	58
Grp Sat Flow(s),veh/h/ln	1509	1585	1340	1509	1585	1343	1485	1482	1518	1485	1482	1317
Q Serve(g_s), s	0.0	2.2	4.9	2.0	3.1	9.7	0.0	15.8	15.8	4.0	23.3	1.8
Cycle Q Clear(g_c), s	0.0	2.2	4.9	2.0	3.1	9.7	0.0	15.8	15.8	4.0	23.3	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	182	234	198	150	202	171	544	800	819	184	901	400
V/C Ratio(X)	0.53	0.18	0.70	0.23	0.28	1.00	0.13	0.49	0.49	0.44	0.91	0.14
Avail Cap(c_a), veh/h	237	334	282	204	300	254	544	800	819	262	1092	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	0.94	0.94	0.94	0.66	0.66	0.66
Uniform Delay (d), s/veh	42.0	35.4	10.6	39.8	37.5	26.9	22.7	13.7	13.7	26.5	17.5	13.3
Incr Delay (d2), s/veh	1.5	0.2	2.7	0.6	0.6	45.3	0.1	2.0	2.0	0.8	11.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	1.6	5.4	1.4	2.2	9.0	2.0	9.1	9.3	2.4	8.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	35.7	13.3	40.4	38.1	72.3	22.8	15.7	15.7	27.4	28.5	13.8
LnGrp LOS	D	D	B	D	D	E	C	B	B	C	C	B
Approach Vol, veh/h		277			263			868			964	
Approach Delay, s/veh		27.3			60.6			16.3			27.5	
Approach LOS		C			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.5	33.9	10.5	17.1	11.0	56.3	8.6	19.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	33.0	35.0	9.0	18.0	11.0	37.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	25.3	2.0	11.7	6.0	17.8	4.0	6.9
Green Ext Time (p_c), s	0.1	3.5	0.1	0.4	0.0	4.1	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		27.1
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	510	18	85	538	22	12	31	73	34	45	15
Future Volume (veh/h)	8	510	18	85	538	22	12	31	73	34	45	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	0.96		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	8	531	19	89	560	23	12	32	76	35	47	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	44	1911	68	641	2212	91	25	267	217	201	122	42
Arrive On Green	0.66	0.66	0.66	0.10	1.00	1.00	0.02	0.17	0.17	0.11	0.11	0.11
Sat Flow, veh/h	16	2899	103	1509	2944	121	1521	1597	1300	1240	1117	380
Grp Volume(v), veh/h	293	0	265	89	286	297	12	32	76	35	0	63
Grp Sat Flow(s),veh/h/ln	1583	0	1435	1509	1506	1559	1521	1597	1300	1240	0	1497
Q Serve(g_s), s	0.0	0.0	8.5	1.9	0.0	0.0	0.9	1.9	5.7	2.8	0.0	4.3
Cycle Q Clear(g_c), s	8.4	0.0	8.5	1.9	0.0	0.0	0.9	1.9	5.7	2.8	0.0	4.3
Prop In Lane	0.03		0.07	1.00		0.08	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	1077	0	946	641	1131	1171	25	267	217	201	0	164
V/C Ratio(X)	0.27	0.00	0.28	0.14	0.25	0.25	0.47	0.12	0.35	0.17	0.00	0.39
Avail Cap(c_a), veh/h	1077	0	946	695	1131	1171	118	574	467	364	0	361
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	0.97	0.97	0.97	0.91	0.91	0.91	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.8	0.0	7.8	4.6	0.0	0.0	53.6	39.0	40.5	44.9	0.0	45.6
Incr Delay (d2), s/veh	0.6	0.0	0.7	0.1	0.5	0.5	11.8	0.2	0.9	0.4	0.0	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(95%),veh/ln	5.2	0.0	4.8	0.9	0.3	0.3	0.7	1.4	3.4	1.6	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.4	0.0	8.6	4.7	0.5	0.5	65.4	39.1	41.4	45.3	0.0	47.0
LnGrp LOS	A	A	A	A	A	A	E	D	D	D	A	D
Approach Vol, veh/h		558			672			120			98	
Approach Delay, s/veh		8.5			1.1			43.2			46.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6	7	8
Phs Duration (G+Y+Rc), s		22.9		87.1	6.3	16.5	10.1	77.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		39.5		61.5	8.5	26.5	9.5	47.5
Max Q Clear Time (g_c+I1), s		7.7		2.0	2.9	6.3	3.9	10.5
Green Ext Time (p_c), s		0.4		4.0	0.0	0.4	0.1	3.8

Intersection Summary			
HCM 6th Ctrl Delay			10.5
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	590	10	30	625	9	11	21	33	15	30	16
Future Volume (veh/h)	5	590	10	30	625	9	11	21	33	15	30	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1547	1547	1547	1560	1560	1560	1572	1572	1572	1547	1547	1547
Adj Flow Rate, veh/h	5	621	11	32	658	9	12	22	35	16	32	17
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, %	5	5	5	4	4	4	3	3	3	5	5	5
Cap, veh/h	11	2117	37	51	2222	30	25	200	169	57	57	26
Arrive On Green	0.01	0.48	0.48	0.07	1.00	1.00	0.02	0.13	0.13	0.07	0.07	0.07
Sat Flow, veh/h	1474	2955	52	1485	2992	41	1497	1572	1329	238	820	375
Grp Volume(v), veh/h	5	309	323	32	326	341	12	22	35	65	0	0
Grp Sat Flow(s),veh/h/ln	1474	1470	1538	1485	1482	1551	1497	1572	1329	1433	0	0
Q Serve(g_s), s	0.4	14.0	14.0	2.3	0.0	0.0	0.9	1.4	2.6	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.4	14.0	14.0	2.3	0.0	0.0	0.9	1.4	2.6	4.8	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.03	1.00		1.00	0.25		0.26
Lane Grp Cap(c), veh/h	11	1053	1101	51	1100	1152	25	200	169	140	0	0
V/C Ratio(X)	0.44	0.29	0.29	0.63	0.30	0.30	0.48	0.11	0.21	0.46	0.00	0.00
Avail Cap(c_a), veh/h	141	1053	1101	115	1100	1152	116	593	502	408	0	0
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.92	0.92	0.92	0.99	0.99	0.99	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.5	11.8	11.8	50.6	0.0	0.0	53.6	42.5	43.1	49.9	0.0	0.0
Incr Delay (d2), s/veh	23.7	0.7	0.7	11.4	0.6	0.6	13.3	0.2	0.6	2.4	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(95%),veh/ln	0.4	8.9	9.2	1.8	0.3	0.3	0.8	1.0	1.6	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	12.4	12.4	62.0	0.6	0.6	66.9	42.8	43.7	52.2	0.0	0.0
LnGrp LOS	E	B	B	E	A	A	E	D	D	D	A	A
Approach Vol, veh/h		637			699			69			65	
Approach Delay, s/veh		12.9			3.4			47.4			52.2	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	83.3	6.3	12.1	5.4	86.2		18.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	8.5	46.5	8.5	28.5	10.5	44.5		41.5
Max Q Clear Time (g_c+I1), s	4.3	16.0	2.9	6.8	2.4	2.0		4.6
Green Ext Time (p_c), s	0.0	4.2	0.0	0.3	0.0	4.7		0.2

Intersection Summary			
HCM 6th Ctrl Delay			11.8
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	594	1	6	613	8	6	12	10	39	10	54
Future Volume (veh/h)	82	594	1	6	613	8	6	12	10	39	10	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	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	1522	1522	1522	1560	1560	1560	1610	1610	1610	1572	1572	1572
Adj Flow Rate, veh/h	98	707	1	7	730	10	7	14	12	46	12	64
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	7	7	7	4	4	4	0	0	0	3	3	3
Cap, veh/h	425	1968	3	535	1864	26	16	66	57	62	24	131
Arrive On Green	0.10	1.00	1.00	0.00	0.21	0.21	0.01	0.08	0.08	0.04	0.11	0.11
Sat Flow, veh/h	1450	2963	4	1485	2993	41	1533	786	674	1497	213	1137
Grp Volume(v), veh/h	98	345	363	7	361	379	7	0	26	46	0	76
Grp Sat Flow(s),veh/h/ln	1450	1446	1521	1485	1482	1552	1533	0	1459	1497	0	1350
Q Serve(g_s), s	2.6	0.0	0.0	0.2	23.2	23.2	0.5	0.0	1.8	3.3	0.0	5.8
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.2	23.2	23.2	0.5	0.0	1.8	3.3	0.0	5.8
Prop In Lane	1.00		0.00	1.00		0.03	1.00		0.46	1.00		0.84
Lane Grp Cap(c), veh/h	425	960	1010	535	923	967	16	0	123	62	0	155
V/C Ratio(X)	0.23	0.36	0.36	0.01	0.39	0.39	0.43	0.00	0.21	0.75	0.00	0.49
Avail Cap(c_a), veh/h	462	960	1010	620	923	967	105	0	352	102	0	325
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	0.0	0.0	7.5	25.7	25.7	54.1	0.0	47.0	52.2	0.0	45.7
Incr Delay (d2), s/veh	0.3	1.0	1.0	0.0	1.2	1.2	17.4	0.0	0.8	16.2	0.0	2.4
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(95%),veh/ln	1.3	0.5	0.5	0.1	14.5	15.1	0.5	0.0	1.3	2.8	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	1.0	1.0	7.5	26.9	26.9	71.5	0.0	47.8	68.4	0.0	48.0
LnGrp LOS	A	A	A	A	C	C	E	A	D	E	A	D
Approach Vol, veh/h		806			747			33			122	
Approach Delay, s/veh		1.9			26.7			52.8			55.7	
Approach LOS		A			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	14.8	6.7	78.5	6.7	18.1	11.2	74.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	7.5	26.5	7.5	46.5	7.5	26.5	8.5	45.5
Max Q Clear Time (g_c+I1), s	5.3	3.8	2.2	2.0	2.5	7.8	4.6	25.2
Green Ext Time (p_c), s	0.0	0.1	0.0	5.1	0.0	0.3	0.1	4.6

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	194	62	12	205	8	18	18	7	8	27	12
Future Volume (veh/h)	23	194	62	12	205	8	18	18	7	8	27	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.98	0.97		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	1560	1560	1560	1547	1547	1547	1547	1547	1547	1585	1585	1585
Adj Flow Rate, veh/h	27	226	72	14	238	9	21	21	8	9	31	14
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	4	5	5	5	5	5	5	2	2	2
Cap, veh/h	61	470	398	33	418	16	281	168	216	199	228	223
Arrive On Green	0.04	0.30	0.30	0.02	0.28	0.28	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1485	1560	1320	1474	1481	56	464	998	1282	194	1356	1325
Grp Volume(v), veh/h	27	226	72	14	0	247	42	0	8	40	0	14
Grp Sat Flow(s),veh/h/ln	1485	1560	1320	1474	0	1537	1462	0	1282	1550	0	1325
Q Serve(g_s), s	0.5	3.1	1.1	0.2	0.0	3.6	0.0	0.0	0.1	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.5	3.1	1.1	0.2	0.0	3.6	0.6	0.0	0.1	0.6	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.04	0.50		1.00	0.22		1.00
Lane Grp Cap(c), veh/h	61	470	398	33	0	434	449	0	216	427	0	223
V/C Ratio(X)	0.45	0.48	0.18	0.43	0.00	0.57	0.09	0.00	0.04	0.09	0.00	0.06
Avail Cap(c_a), veh/h	1147	2085	1764	1138	0	2054	1305	0	990	1347	0	1023
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	7.6	6.9	12.8	0.0	8.1	9.4	0.0	9.2	9.4	0.0	9.3
Incr Delay (d2), s/veh	5.1	0.8	0.2	8.6	0.0	1.2	0.1	0.0	0.1	0.1	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(95%),veh/ln	0.4	1.3	0.4	0.3	0.0	1.5	0.3	0.0	0.1	0.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	8.3	7.1	21.5	0.0	9.3	9.5	0.0	9.3	9.5	0.0	9.4
LnGrp LOS	B	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		325			261			50			54	
Approach Delay, s/veh		8.8			10.0			9.5			9.5	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.0	5.1	12.5		9.0	5.6	12.0
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		20.5	20.5	35.5		20.5	20.5	35.5
Max Q Clear Time (g_c+I1), s		2.6	2.2	5.1		2.6	2.5	5.6
Green Ext Time (p_c), s		0.2	0.0	1.6		0.2	0.0	1.5

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	239	150	46	166	130	22
Future Volume (veh/h)	239	150	46	166	130	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	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	1572	1572	1497	1497	1547	1547
Adj Flow Rate, veh/h	295	0	57	205	160	27
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	9	9	5	5
Cap, veh/h	370		82	295	205	833
Arrive On Green	0.25	0.00	0.29	0.29	0.14	0.54
Sat Flow, veh/h	1497	1332	280	1008	1474	1547
Grp Volume(v), veh/h	295	0	0	262	160	27
Grp Sat Flow(s),veh/h/ln	1497	1332	0	1288	1474	1547
Q Serve(g_s), s	7.7	0.0	0.0	7.6	4.4	0.3
Cycle Q Clear(g_c), s	7.7	0.0	0.0	7.6	4.4	0.3
Prop In Lane	1.00	1.00		0.78	1.00	
Lane Grp Cap(c), veh/h	370		0	376	205	833
V/C Ratio(X)	0.80		0.00	0.70	0.78	0.03
Avail Cap(c_a), veh/h	2339		0	2319	1950	2785
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	14.8	0.0	0.0	13.2	17.4	4.5
Incr Delay (d2), s/veh	4.0	0.0	0.0	2.3	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	0.0	0.0	3.7	3.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.8	0.0	0.0	15.5	23.8	4.6
LnGrp LOS	B		A	B	C	A
Approach Vol, veh/h	295		262			187
Approach Delay, s/veh	18.8		15.5			21.1
Approach LOS	B		B			C

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	10.3	16.8	27.1	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	55.5	75.5	75.5	65.5
Max Q Clear Time (g_c+I1), s	6.4	9.6	2.3	9.7
Green Ext Time (p_c), s	0.5	2.1	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR] 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)	3	28	4	618	0	16	1	119	864	16	238	1
Future Volume (veh/h)	3	28	4	618	0	16	1	119	864	16	238	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1572	1572	1572	1560	1560	1560	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	3	30	4	688	0	0	1	129	939	17	259	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	4	4	4	2	2	2	2	2	2
Cap, veh/h	37	373	50	641	337	0	39	542	1320	74	937	4
Arrive On Green	0.30	0.30	0.30	0.22	0.00	0.00	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	125	1245	166	2971	1560	0	2	1583	2364	93	2735	11
Grp Volume(v), veh/h	37	0	0	688	0	0	130	0	939	141	0	136
Grp Sat Flow(s),veh/h/ln	1536	0	0	1485	1560	0	1584	0	1182	1398	0	1440
Q Serve(g_s), s	1.6	0.0	0.0	20.5	0.0	0.0	0.0	0.0	27.6	0.0	0.0	6.5
Cycle Q Clear(g_c), s	1.6	0.0	0.0	20.5	0.0	0.0	5.6	0.0	27.6	6.1	0.0	6.5
Prop In Lane	0.08		0.11	1.00		0.00	0.01		1.00	0.12		0.01
Lane Grp Cap(c), veh/h	460	0	0	641	337	0	581	0	1320	521	0	493
V/C Ratio(X)	0.08	0.00	0.00	1.07	0.00	0.00	0.22	0.00	0.71	0.27	0.00	0.28
Avail Cap(c_a), veh/h	460	0	0	641	337	0	613	0	1369	548	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.98	0.00	0.00	1.00	0.00	1.00	0.85	0.00	0.85
Uniform Delay (d), s/veh	23.9	0.0	0.0	37.2	0.0	0.0	22.4	0.0	15.4	22.5	0.0	22.7
Incr Delay (d2), s/veh	0.1	0.0	0.0	56.5	0.0	0.0	0.3	0.0	1.9	0.3	0.0	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(95%),veh/ln	1.1	0.0	0.0	18.8	0.0	0.0	3.8	0.0	16.9	4.2	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	0.0	93.7	0.0	0.0	22.6	0.0	17.2	22.9	0.0	23.0
LnGrp LOS	C	A	A	F	A	A	C	A	B	C	A	C
Approach Vol, veh/h		37			688			1069			277	
Approach Delay, s/veh		24.0			93.7			17.9			22.9	
Approach LOS		C			F			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.0		33.0		37.0		25.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		34.5		26.5		34.5		20.5				
Max Q Clear Time (g_c+I1), s		29.6		3.6		8.5		22.5				
Green Ext Time (p_c), s		2.9		0.1		2.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			43.9									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	886	2	0	570	7	7	4	5	13	4	50
Future Volume (veh/h)	26	886	2	0	570	7	7	4	5	13	4	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		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	1585	1585	1585	1560	1560	1560	1447	1447	1447	1535	1535	1535
Adj Flow Rate, veh/h	28	943	2	0	606	7	7	4	5	14	4	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	4	4	4	13	13	13	6	6	6
Cap, veh/h	83	2401	5	0	2466	28	89	41	33	61	13	77
Arrive On Green	0.82	0.82	0.82	0.00	0.82	0.82	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	50	2922	6	0	3079	35	401	526	421	166	169	986
Grp Volume(v), veh/h	503	0	470	0	299	314	16	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1537	0	1441	0	1482	1554	1348	0	0	1321	0	0
Q Serve(g_s), s	0.0	0.0	7.8	0.0	4.1	4.1	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	7.8	0.0	4.1	4.1	1.0	0.0	0.0	4.7	0.0	0.0
Prop In Lane	0.06		0.00	0.00		0.02	0.44		0.31	0.20		0.75
Lane Grp Cap(c), veh/h	1305	0	1184	0	1218	1277	163	0	0	151	0	0
V/C Ratio(X)	0.39	0.00	0.40	0.00	0.25	0.25	0.10	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	1305	0	1184	0	1218	1277	423	0	0	420	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)	0.89	0.00	0.89	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.1	0.0	2.1	0.0	1.8	1.8	38.7	0.0	0.0	40.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.9	0.0	0.5	0.5	0.3	0.0	0.0	2.7	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(95%),veh/ln	2.9	0.0	2.8	0.0	1.5	1.6	0.6	0.0	0.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.9	0.0	3.0	0.0	2.3	2.3	39.0	0.0	0.0	43.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		973			613			16			71	
Approach Delay, s/veh		2.9			2.3			39.0			43.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	11.5	78.5	11.5	78.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	55.5	25.5	55.5
Max Q Clear Time (g_c+I1), s	3.0	9.8	6.7	6.1
Green Ext Time (p_c), s	0.0	17.5	0.4	9.3

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	759	67	104	453	19	12	29	9	28	202	94
Future Volume (veh/h)	85	759	67	104	453	19	12	29	9	28	202	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1572	1572	1572	1572	1572	1572	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	88	782	69	107	467	20	12	30	9	29	208	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	1	1	1
Cap, veh/h	114	1136	100	137	1240	53	27	385	109	58	381	170
Arrive On Green	0.08	0.41	0.41	0.09	0.42	0.42	0.02	0.17	0.17	0.04	0.19	0.19
Sat Flow, veh/h	1497	2776	245	1497	2919	125	1509	2297	652	1521	2027	907
Grp Volume(v), veh/h	88	421	430	107	239	248	12	19	20	29	154	151
Grp Sat Flow(s),veh/h/ln	1497	1494	1527	1497	1494	1550	1509	1506	1443	1521	1518	1416
Q Serve(g_s), s	3.5	14.2	14.2	4.3	6.7	6.7	0.5	0.7	0.7	1.1	5.6	6.0
Cycle Q Clear(g_c), s	3.5	14.2	14.2	4.3	6.7	6.7	0.5	0.7	0.7	1.1	5.6	6.0
Prop In Lane	1.00		0.16	1.00		0.08	1.00		0.45	1.00		0.64
Lane Grp Cap(c), veh/h	114	611	625	137	634	658	27	253	242	58	285	266
V/C Ratio(X)	0.77	0.69	0.69	0.78	0.38	0.38	0.44	0.08	0.08	0.50	0.54	0.57
Avail Cap(c_a), veh/h	867	1838	1879	1111	1838	1907	1119	1117	1070	632	1126	1050
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	14.9	14.9	27.3	12.1	12.1	29.8	21.5	21.5	28.9	22.5	22.7
Incr Delay (d2), s/veh	12.5	1.7	1.6	11.0	0.4	0.4	12.8	0.2	0.2	7.8	1.9	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(95%),veh/ln	2.9	8.1	8.3	3.4	3.8	3.9	0.5	0.4	0.4	1.0	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	16.6	16.6	38.3	12.5	12.5	42.6	21.7	21.7	36.7	24.4	25.0
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		939			594			51			334	
Approach Delay, s/veh		18.8			17.2			26.6			25.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	14.8	10.1	29.6	5.6	16.0	9.2	30.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	45.5	45.5	75.5	45.5	45.5	35.5	75.5
Max Q Clear Time (g_c+I1), s	3.1	2.7	6.3	16.2	2.5	8.0	5.5	8.7
Green Ext Time (p_c), s	0.1	0.2	0.4	8.9	0.0	2.5	0.3	4.3

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	766	21	7	499	0	18	2	8	6	13	3
Future Volume (veh/h)	7	766	21	7	499	0	18	2	8	6	13	3
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		1.00	0.86		0.91	0.92		0.83
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	1560	1560	1560	1535	1535	1535	1560	1560	1560	1610	1610	1610
Adj Flow Rate, veh/h	7	815	22	7	531	0	19	2	9	6	14	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	0	0	0
Cap, veh/h	36	2268	61	35	1200	0	146	20	50	73	139	26
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	7	2873	77	6	1520	0	713	146	368	257	1021	192
Grp Volume(v), veh/h	444	0	400	538	0	0	30	0	0	23	0	0
Grp Sat Flow(s),veh/h/ln	1554	0	1403	1526	0	0	1227	0	0	1470	0	0
Q Serve(g_s), s	0.0	0.0	10.1	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.0	0.0	10.1	13.6	0.0	0.0	2.4	0.0	0.0	1.6	0.0	0.0
Prop In Lane	0.02		0.05	0.01		0.00	0.63		0.30	0.26		0.13
Lane Grp Cap(c), veh/h	1257	0	1108	1235	0	0	215	0	0	237	0	0
V/C Ratio(X)	0.35	0.00	0.36	0.44	0.00	0.00	0.14	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1257	0	1108	1235	0	0	308	0	0	348	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)	0.70	0.00	0.70	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.7	0.0	3.7	4.1	0.0	0.0	45.8	0.0	0.0	45.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.6	1.1	0.0	0.0	0.1	0.0	0.0	0.1	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(95%),veh/ln	5.2	0.0	4.7	7.2	0.0	0.0	1.5	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	0.0	4.4	5.2	0.0	0.0	45.9	0.0	0.0	45.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		844			538			30			23	
Approach Delay, s/veh		4.3			5.2			45.9			45.6	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.2		20.8		99.2		20.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		85.5		25.5		85.5		25.5				
Max Q Clear Time (g_c+I1), s		12.1		3.6		15.6		4.4				
Green Ext Time (p_c), s		10.9		0.0		6.7		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			6.2									
HCM 6th LOS			A									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	351	156	6	13	16
Future Volume (veh/h)	60	351	156	6	13	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1497	1497	1572	1572	1522	1522
Adj Flow Rate, veh/h	61	358	159	6	13	16
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	9	9	3	3	7	7
Cap, veh/h	357	986	1155	43	40	49
Arrive On Green	0.39	0.39	0.39	0.39	0.07	0.07
Sat Flow, veh/h	218	2573	3013	110	588	724
Grp Volume(v), veh/h	234	185	81	84	30	0
Grp Sat Flow(s),veh/h/ln	1429	1294	1494	1551	1357	0
Q Serve(g_s), s	0.0	1.7	0.6	0.6	0.4	0.0
Cycle Q Clear(g_c), s	1.9	1.7	0.6	0.6	0.4	0.0
Prop In Lane	0.26			0.07	0.43	0.53
Lane Grp Cap(c), veh/h	834	509	588	611	93	0
V/C Ratio(X)	0.28	0.36	0.14	0.14	0.32	0.00
Avail Cap(c_a), veh/h	4056	3520	4063	4219	2068	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.6	3.6	3.2	3.3	7.4	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.1	0.1	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.1	0.0	0.0	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.8	3.9	3.3	3.3	8.9	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		419	165		30	
Approach Delay, s/veh		3.8	3.3		8.9	
Approach LOS		A	A		A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	11.1	5.6	11.1
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	45.5	25.5	45.5
Max Q Clear Time (g_c+I1), s	3.9	2.4	2.6
Green Ext Time (p_c), s	2.4	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	3.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	124	236	62	147	8	0	0	0	14	105	7
Future Volume (veh/h)	15	124	236	62	147	8	0	0	0	14	105	7
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.89	0.95		0.99				1.00		0.75
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	1472	1472	1472	1497	1497	1497				1547	1547	1547
Adj Flow Rate, veh/h	17	141	268	70	167	9				16	119	8
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	11	11	11	9	9	9				5	5	5
Cap, veh/h	140	611	483	241	446	21				55	410	28
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44				0.33	0.33	0.33
Sat Flow, veh/h	56	1398	1104	244	1022	48				167	1240	83
Grp Volume(v), veh/h	158	0	268	246	0	0				143	0	0
Grp Sat Flow(s),veh/h/ln	1454	0	1104	1313	0	0				1491	0	0
Q Serve(g_s), s	0.0	0.0	6.2	0.0	0.0	0.0				2.4	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	6.2	3.8	0.0	0.0				2.4	0.0	0.0
Prop In Lane	0.11		1.00	0.28		0.04				0.11		0.06
Lane Grp Cap(c), veh/h	751	0	483	708	0	0				493	0	0
V/C Ratio(X)	0.21	0.00	0.56	0.35	0.00	0.00				0.29	0.00	0.00
Avail Cap(c_a), veh/h	2029	0	1474	1818	0	0				1341	0	0
HCM Platoon Ratio	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	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	7.2	6.5	0.0	0.0				8.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.3	0.0	0.0				0.3	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
%ile BackOfQ(95%),veh/ln	0.9	0.0	2.0	1.6	0.0	0.0				1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	8.2	6.8	0.0	0.0				8.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		426			246						143	
Approach Delay, s/veh		7.5			6.8						8.9	
Approach LOS		A			A						A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		19.1		15.4		19.1
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		46.0		31.0		46.0
Max Q Clear Time (g_c+I1), s		8.2		4.4		5.8
Green Ext Time (p_c), s		2.3		0.8		1.9

Intersection Summary			
HCM 6th Ctrl Delay			7.5
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1	0	0	3	1	79	112	0	0	0	164
Future Volume (veh/h)	60	1	0	0	3	1	79	112	0	0	0	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.96		1.00	1.00		0.94
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	1585	1585	0	0	1610	1610	1434	1434	1434	1459	1459	1459
Adj Flow Rate, veh/h	66	1	0	0	3	1	87	123	0	0	0	180
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	0	0	0	0	14	14	14	12	12	12
Cap, veh/h	130	2	0	0	8	3	486	638	0	0	0	483
Arrive On Green	0.09	0.09	0.00	0.00	0.01	0.01	0.41	0.41	0.00	0.00	0.00	0.41
Sat Flow, veh/h	1488	23	0	0	1155	385	621	1606	0	0	0	1166
Grp Volume(v), veh/h	67	0	0	0	0	4	117	93	0	0	0	180
Grp Sat Flow(s),veh/h/ln	1510	0	0	0	0	1539	922	1240	0	0	0	1166
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.0	0.1	1.2	1.3	0.0	0.0	0.0	2.9
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.0	0.0	0.1	4.2	1.3	0.0	0.0	0.0	2.9
Prop In Lane	0.99		0.00	0.00		0.25	0.74		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	132	0	0	0	0	10	610	513	0	0	0	483
V/C Ratio(X)	0.51	0.00	0.00	0.00	0.00	0.40	0.19	0.18	0.00	0.00	0.00	0.37
Avail Cap(c_a), veh/h	1404	0	0	0	0	870	2421	2508	0	0	0	2359
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	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	0.0	0.0	0.0	13.6	6.0	5.1	0.0	0.0	0.0	5.6
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.0	0.0	9.0	0.2	0.2	0.0	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	0.0	0.0	0.0	0.1	0.5	0.4	0.0	0.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	0.0	0.0	0.0	0.0	22.6	6.2	5.3	0.0	0.0	0.0	6.1
LnGrp LOS	B	A	A	A	A	C	A	A	A	A	A	A
Approach Vol, veh/h		67			4			210			180	
Approach Delay, s/veh		14.2			22.6			5.8			6.1	
Approach LOS		B			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.9		6.9		15.9		4.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		25.5		55.5		15.5				
Max Q Clear Time (g_c+I1), s		6.2		3.2		4.9		2.1				
Green Ext Time (p_c), s		1.8		0.2		1.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	170	18	82	13	29	3	896	0	85	637	1
Future Volume (veh/h)	39	170	18	82	13	29	3	896	0	85	637	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1522	1522	1522	1585	1585	0	1585	1585	1585
Adj Flow Rate, veh/h	41	177	19	85	14	0	3	933	0	89	664	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	4	7	7	7	2	2	0	2	2	2
Cap, veh/h	73	273	228	209	305		7	1229	0	115	1478	2
Arrive On Green	0.05	0.17	0.17	0.07	0.20	0.00	0.00	0.41	0.00	0.08	0.48	0.48
Sat Flow, veh/h	1485	1560	1303	2812	1522	1290	1509	3091	0	1509	3085	5
Grp Volume(v), veh/h	41	177	19	85	14	0	3	933	0	89	324	341
Grp Sat Flow(s),veh/h/ln	1485	1560	1303	1406	1522	1290	1509	1506	0	1509	1506	1584
Q Serve(g_s), s	1.7	6.5	0.8	1.8	0.5	0.0	0.1	16.4	0.0	3.6	8.8	8.8
Cycle Q Clear(g_c), s	1.7	6.5	0.8	1.8	0.5	0.0	0.1	16.4	0.0	3.6	8.8	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	73	273	228	209	305		7	1229	0	115	722	759
V/C Ratio(X)	0.56	0.65	0.08	0.41	0.05		0.41	0.76	0.00	0.78	0.45	0.45
Avail Cap(c_a), veh/h	1344	706	589	727	394		390	4161	0	390	2081	2189
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	23.8	21.4	27.3	20.0	0.0	30.7	15.7	0.0	28.1	10.7	10.7
Incr Delay (d2), s/veh	6.6	2.6	0.2	1.3	0.1	0.0	12.9	0.7	0.0	4.2	0.3	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(95%),veh/ln	1.3	4.5	0.4	1.1	0.3	0.0	0.1	8.8	0.0	2.5	4.6	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	26.4	21.5	28.6	20.0	0.0	43.6	16.4	0.0	32.3	11.0	11.0
LnGrp LOS	D	C	C	C	C		D	B	A	C	B	B
Approach Vol, veh/h		237			99			936			754	
Approach Delay, s/veh		27.5			27.4			16.5			13.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	34.2	8.6	14.8	8.7	29.8	7.0	16.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	85.5	16.0	28.0	16.0	85.5	56.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	10.8	3.8	8.5	5.6	18.4	3.7	2.5
Green Ext Time (p_c), s	0.0	3.7	0.2	1.0	0.1	6.8	0.1	0.0

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

Notes

Unsignalized Delay for [WBR] 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)	23	22	14	8	1	7	12	1152	67	18	765	17
Future Volume (veh/h)	23	22	14	8	1	7	12	1152	67	18	765	17
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		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	1572	1572	1572	1447	1447	1447	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	24	23	15	8	1	7	13	1213	71	19	805	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, %	3	3	3	13	13	13	2	2	2	2	2	2
Cap, veh/h	36	34	22	42	5	33	29	1793	800	41	2421	54
Arrive On Green	0.06	0.06	0.06	0.03	0.03	0.03	0.02	0.60	0.60	0.03	0.60	0.60
Sat Flow, veh/h	572	548	357	1378	155	1087	1509	3011	1343	1509	4015	90
Grp Volume(v), veh/h	62	0	0	8	0	8	13	1213	71	19	508	315
Grp Sat Flow(s),veh/h/ln	1477	0	0	1378	0	1243	1509	1506	1343	1509	1268	1569
Q Serve(g_s), s	2.6	0.0	0.0	0.4	0.0	0.4	0.5	17.3	1.4	0.8	6.3	6.3
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.4	0.0	0.4	0.5	17.3	1.4	0.8	6.3	6.3
Prop In Lane	0.39		0.24	1.00		0.88	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	93	0	0	42	0	37	29	1793	800	41	1529	946
V/C Ratio(X)	0.67	0.00	0.00	0.19	0.00	0.21	0.44	0.68	0.09	0.47	0.33	0.33
Avail Cap(c_a), veh/h	373	0	0	1426	0	1286	370	4045	1804	370	3406	2107
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	0.0	29.9	0.0	30.0	30.7	8.7	5.5	30.3	6.2	6.2
Incr Delay (d2), s/veh	8.0	0.0	0.0	1.7	0.0	2.1	3.9	0.6	0.1	3.1	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.0	0.0	0.2	0.0	0.2	0.4	6.8	0.5	0.6	2.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	0.0	0.0	31.6	0.0	32.0	34.6	9.3	5.5	33.4	6.4	6.5
LnGrp LOS	D	A	A	C	A	C	C	A	A	C	A	A
Approach Vol, veh/h		62			16			1297			842	
Approach Delay, s/veh		37.0			31.8			9.4			7.1	
Approach LOS		D			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	43.2		6.4	6.2	42.7		8.0
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.0
Max Green Setting (Gmax), s	15.5	85.0		65.5	15.5	85.0		16.0
Max Q Clear Time (g_c+I1), s	2.5	8.3		2.4	2.8	19.3		4.6
Green Ext Time (p_c), s	0.0	10.0		0.0	0.0	18.4		0.2

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

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	152	3	66	107	104	8	41	118	35	20	4
Future Volume (veh/h)	4	152	3	66	107	104	8	41	118	35	20	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1409	1409	1409	1510	1510	1510	1560	1560	1560	1497	1497	1497
Adj Flow Rate, veh/h	5	177	3	77	124	121	9	48	0	41	23	5
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	16	16	16	8	8	8	4	4	4	9	9	9
Cap, veh/h	11	373	6	140	213	208	426	211		404	161	35
Arrive On Green	0.01	0.27	0.27	0.10	0.30	0.30	0.14	0.14	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1342	1381	23	1438	702	685	1360	1560	1322	1282	1191	259
Grp Volume(v), veh/h	5	0	180	77	0	245	9	48	0	41	0	28
Grp Sat Flow(s),veh/h/ln	1342	0	1405	1438	0	1386	1360	1560	1322	1282	0	1450
Q Serve(g_s), s	0.1	0.0	2.9	1.4	0.0	4.1	0.2	0.7	0.0	0.8	0.0	0.5
Cycle Q Clear(g_c), s	0.1	0.0	2.9	1.4	0.0	4.1	0.6	0.7	0.0	1.5	0.0	0.5
Prop In Lane	1.00		0.02	1.00		0.49	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	11	0	379	140	0	421	426	211		404	0	197
V/C Ratio(X)	0.46	0.00	0.47	0.55	0.00	0.58	0.02	0.23		0.10	0.00	0.14
Avail Cap(c_a), veh/h	1211	0	2302	1641	0	1838	1544	1494		1694	0	1656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	8.3	11.7	0.0	8.0	10.6	10.5	0.0	11.2	0.0	10.3
Incr Delay (d2), s/veh	36.7	0.0	1.3	4.7	0.0	1.8	0.0	0.8	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	1.1	0.9	0.0	1.5	0.1	0.4	0.0	0.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	0.0	9.6	16.4	0.0	9.8	10.6	11.2	0.0	11.3	0.0	10.9
LnGrp LOS	D	A	A	B	A	A	B	B		B	A	B
Approach Vol, veh/h		185			322			57			69	
Approach Delay, s/veh		10.7			11.4			11.1			11.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	13.8		7.7	6.6	12.8		7.7				
Change Period (Y+Rc), s	5.5	* 5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	24.5	* 36		26.0	31.0	44.5		31.0				
Max Q Clear Time (g_c+I1), s	2.1	6.1		2.7	3.4	4.9		3.5				
Green Ext Time (p_c), s	0.0	2.2		0.3	0.3	1.5		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	305	11	69	388	140	10	6	113	64	8	30
Future Volume (veh/h)	7	305	11	69	388	140	10	6	113	64	8	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	1510	1510	1510	1522	1522	1522	1346	1346	1346
Adj Flow Rate, veh/h	8	332	12	75	422	0	11	7	0	70	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	7	8	8	8	7	7	7	21	21	21
Cap, veh/h	19	809	29	137	1052		421	183		405	162	
Arrive On Green	0.01	0.28	0.28	0.10	0.37	0.00	0.12	0.12	0.00	0.12	0.12	0.00
Sat Flow, veh/h	1450	2847	103	1438	2868	1279	1347	1522	0	1194	1346	0
Grp Volume(v), veh/h	8	168	176	75	422	0	11	7	0	70	9	0
Grp Sat Flow(s),veh/h/ln	1450	1446	1503	1438	1434	1279	1347	1522	0	1194	1346	0
Q Serve(g_s), s	0.1	2.5	2.6	1.3	2.9	0.0	0.2	0.1	0.0	1.5	0.2	0.0
Cycle Q Clear(g_c), s	0.1	2.5	2.6	1.3	2.9	0.0	0.4	0.1	0.0	1.6	0.2	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	19	411	427	137	1052		421	183		405	162	
V/C Ratio(X)	0.43	0.41	0.41	0.55	0.40		0.03	0.04		0.17	0.06	
Avail Cap(c_a), veh/h	564	2169	2255	1624	6426		1780	1719		1610	1521	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	7.8	7.8	11.7	6.3	0.0	10.7	10.5	0.0	11.2	10.5	0.0
Incr Delay (d2), s/veh	20.4	0.9	0.9	4.7	0.3	0.0	0.1	0.2	0.0	0.4	0.3	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(95%),veh/ln	0.3	1.0	1.0	0.9	0.8	0.0	0.1	0.1	0.0	0.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	8.8	8.7	16.4	6.6	0.0	10.7	10.7	0.0	11.6	10.8	0.0
LnGrp LOS	C	A	A	B	A		B	B		B	B	
Approach Vol, veh/h		352			497			18			79	
Approach Delay, s/veh		9.3			8.1			10.7			11.5	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.8	14.4		7.7	7.1	12.2		7.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.5	60.5		30.5	30.5	40.5		30.5
Max Q Clear Time (g_c+I1), s	2.1	4.9		2.4	3.3	4.6		3.6
Green Ext Time (p_c), s	0.0	3.7		0.1	0.3	3.0		0.5

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, WBR, SBR] 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)	247	223	81	6	92	2	101	51	9	10	29	183
Future Volume (veh/h)	247	223	81	6	92	2	101	51	9	10	29	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1535	1535	1535	1560	1560	1560	1547	1547	1547
Adj Flow Rate, veh/h	247	225	82	6	93	2	102	52	9	10	29	185
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	5	5	5
Cap, veh/h	293	665	235	14	363	8	136	69	179	70	203	234
Arrive On Green	0.20	0.31	0.31	0.01	0.12	0.12	0.14	0.14	0.14	0.18	0.18	0.18
Sat Flow, veh/h	1485	2132	752	1462	2919	63	1000	510	1319	392	1136	1309
Grp Volume(v), veh/h	247	154	153	6	46	49	154	0	9	39	0	185
Grp Sat Flow(s),veh/h/ln	1485	1482	1402	1462	1458	1523	1510	0	1319	1528	0	1309
Q Serve(g_s), s	7.9	3.9	4.2	0.2	1.4	1.4	4.9	0.0	0.3	1.1	0.0	6.7
Cycle Q Clear(g_c), s	7.9	3.9	4.2	0.2	1.4	1.4	4.9	0.0	0.3	1.1	0.0	6.7
Prop In Lane	1.00		0.54	1.00		0.04	0.66		1.00	0.26		1.00
Lane Grp Cap(c), veh/h	293	462	438	14	181	189	205	0	179	273	0	234
V/C Ratio(X)	0.84	0.33	0.35	0.43	0.26	0.26	0.75	0.00	0.05	0.14	0.00	0.79
Avail Cap(c_a), veh/h	376	1260	1192	177	1047	1094	519	0	454	526	0	450
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	19.1	13.0	13.1	24.3	19.6	19.6	20.6	0.0	18.6	17.1	0.0	19.4
Incr Delay (d2), s/veh	12.8	0.4	0.5	19.3	0.7	0.7	5.5	0.0	0.1	0.2	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.1	2.1	2.1	0.2	0.8	0.9	3.4	0.0	0.2	0.7	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	13.5	13.6	43.6	20.3	20.3	26.1	0.0	18.7	17.3	0.0	25.4
LnGrp LOS	C	B	B	D	C	C	C	A	B	B	A	C
Approach Vol, veh/h		554			101			163			224	
Approach Delay, s/veh		21.7			21.7			25.7			24.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	19.9		13.3	14.3	10.6		11.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	6.0	42.0		17.0	12.5	35.5		17.0
Max Q Clear Time (g_c+I1), s	2.2	6.2		8.7	9.9	3.4		6.9
Green Ext Time (p_c), s	0.0	1.9		0.5	0.2	0.5		0.6

Intersection Summary		
HCM 6th Ctrl Delay		22.8
HCM 6th LOS		C

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	5	98	0	0	50
Future Vol, veh/h	67	5	98	0	0	50
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	10	10	24	24
Mvmt Flow	88	7	129	0	0	66
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.2	8.2	8.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	93%	0%
Vol Thru, %	100%	0%	100%
Vol Right, %	0%	7%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	98	72	50
LT Vol	0	67	0
Through Vol	98	0	50
RT Vol	0	5	0
Lane Flow Rate	129	95	66
Geometry Grp	1	1	1
Degree of Util (X)	0.154	0.12	0.085
Departure Headway (Hd)	4.286	4.552	4.676
Convergence, Y/N	Yes	Yes	Yes
Cap	824	792	770
Service Time	2.382	2.554	2.682
HCM Lane V/C Ratio	0.157	0.12	0.086
HCM Control Delay	8.2	8.2	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.4	0.3

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	73	58	129	142	96
Future Vol, veh/h	37	73	58	129	142	96
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	7	7	5	5	4	4
Mvmt Flow	55	109	87	193	212	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	655	288	357	0	-	0
Stage 1	286	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.15	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.245	-	-	-
Pot Cap-1 Maneuver	423	739	1185	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	387	737	1183	-	-	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	14		2.6		0
HCM LOS	B				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1183	-	565	-	-
HCM Lane V/C Ratio	0.073	-	0.291	-	-
HCM Control Delay (s)	8.3	0	14	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	14	64	1	0	91	10	0	4	1	0	2	24
Future Vol, veh/h	14	64	1	0	91	10	0	4	1	0	2	24
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	8	8	8
Mvmt Flow	19	88	1	0	125	14	0	5	1	0	3	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.8	7.4	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	18%	0%	0%
Vol Thru, %	80%	81%	90%	8%
Vol Right, %	20%	1%	10%	92%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	79	101	26
LT Vol	0	14	0	0
Through Vol	4	64	91	2
RT Vol	1	1	10	24
Lane Flow Rate	7	108	138	36
Geometry Grp	1	1	1	1
Degree of Util (X)	0.008	0.125	0.154	0.04
Departure Headway (Hd)	4.351	4.158	4.013	4.021
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	827	858	890	896
Service Time	2.352	2.204	2.058	2.021
HCM Lane V/C Ratio	0.008	0.126	0.155	0.04
HCM Control Delay	7.4	7.8	7.8	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.4	0.5	0.1

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	21	98	8	11	0	75	44	8	4	21	7
Future Vol, veh/h	5	21	98	8	11	0	75	44	8	4	21	7
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	5	5	5	5	5	5	2	2	2	19	19	19
Mvmt Flow	7	28	129	11	14	0	99	58	11	5	28	9
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	8.4	8.6	8.8	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	42%	100%	0%
Vol Thru, %	0%	85%	0%	18%	58%	0%	75%
Vol Right, %	0%	15%	0%	82%	0%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	52	5	119	19	4	28
LT Vol	75	0	5	0	8	4	0
Through Vol	0	44	0	21	11	0	21
RT Vol	0	8	0	98	0	0	7
Lane Flow Rate	99	68	7	157	25	5	37
Geometry Grp	5	5	5	5	4b	5	5
Degree of Util (X)	0.152	0.094	0.01	0.199	0.038	0.009	0.054
Departure Headway (Hd)	5.533	4.923	5.662	4.582	5.404	5.954	5.275
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	649	729	634	784	663	602	679
Service Time	3.257	2.647	3.381	2.301	3.431	3.682	3.003
HCM Lane V/C Ratio	0.153	0.093	0.011	0.2	0.038	0.008	0.054
HCM Control Delay	9.3	8.2	8.4	8.4	8.6	8.7	8.3
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0	0.7	0.1	0	0.2

MOVEMENT SUMMARY

Site: 74 [Wheaton Way & Manette Bridge (Site Folder: 2023 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total	HV]	Arrival Flows [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
East: Harkins St (WB)															
6	T1	All MCs	193	1.7	193	1.7	0.189	5.9	LOS A	0.9	22.9	0.38	0.52	0.38	34.7
16	R2	All MCs	20	1.7	20	1.7	0.189	5.6	LOS A	0.9	22.9	0.38	0.52	0.38	34.4
Approach			212	1.7	212	1.7	0.189	5.8	LOS A	0.9	22.9	0.38	0.52	0.38	34.7
North: Wheaton Way (SB)															
7u	U	All MCs	1	3.1	1	3.1	0.278	12.0	LOS B	1.5	39.4	0.40	0.56	0.40	34.2
7	L2	All MCs	16	3.1	16	3.1	0.278	10.0	LOS B	1.5	39.4	0.40	0.56	0.40	34.2
14	R2	All MCs	299	3.1	299	3.1	0.278	5.5	LOS A	1.5	39.4	0.40	0.56	0.40	34.5
Approach			316	3.1	316	3.1	0.278	5.8	LOS A	1.5	39.4	0.40	0.56	0.40	34.5
West: Manette Bridge (EB)															
5	L2	All MCs	231	6.2	231	6.2	0.283	9.1	LOS A	1.6	42.8	0.11	0.58	0.11	33.4
2	T1	All MCs	130	6.2	130	6.2	0.283	4.9	LOS A	1.6	42.8	0.11	0.58	0.11	34.0
Approach			360	6.2	360	6.2	0.283	7.6	LOS A	1.6	42.8	0.11	0.58	0.11	33.6
All Vehicles			889	4.0	889	4.0	0.283	6.5	LOS A	1.6	42.8	0.28	0.56	0.28	34.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	104	3	0	0	0	0	0	0	43
Future Vol, veh/h	0	0	0	104	3	0	0	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	4	0	0	0	0	0	0	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	9	9	9
Mvmt Flow	0	0	0	117	3	0	0	0	0	0	0	48

Major/Minor				Major2						Minor2		
Conflicting Flow All				4	0	0				-	-	8
Stage 1				-	-	-				-	-	-
Stage 2				-	-	-				-	-	-
Critical Hdwy				4.13	-	-				-	-	6.29
Critical Hdwy Stg 1				-	-	-				-	-	-
Critical Hdwy Stg 2				-	-	-				-	-	-
Follow-up Hdwy				2.227	-	-				-	-	3.381
Pot Cap-1 Maneuver				1611	-	0				0	0	1054
Stage 1				-	-	0				0	0	-
Stage 2				-	-	0				0	0	-
Platoon blocked, %					-							
Mov Cap-1 Maneuver				1611	-	-				-	0	1054
Mov Cap-2 Maneuver				-	-	-				-	0	-
Stage 1				-	-	-				-	0	-
Stage 2				-	-	-				-	0	-

Approach	WB	SB
HCM Control Delay, s	7.2	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBL	WBT	SBLn1
Capacity (veh/h)	1611	-	1054
HCM Lane V/C Ratio	0.073	-	0.046
HCM Control Delay (s)	7.4	0	8.6
HCM Lane LOS	A	A	A
HCM 95th %tile Q(veh)	0.2	-	0.1

Intersection						
Int Delay, s/veh	1.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	22	79	13	9	163
Future Vol, veh/h	20	22	79	13	9	163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	5	3	3	1	1
Mvmt Flow	25	27	98	16	11	201

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	329	106	0	0	114	0
Stage 1	106	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.11	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.209	-
Pot Cap-1 Maneuver	659	940	-	-	1481	-
Stage 1	911	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	654	940	-	-	1481	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	801	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1481	-
HCM Lane V/C Ratio	-	-	0.067	0.008	-
HCM Control Delay (s)	-	-	10	7.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	151	46	17	196	4	10	3	7	5	11	10
Future Vol, veh/h	3	151	46	17	196	4	10	3	7	5	11	10
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	4	4	4	6	6	6	10	10	10	0	0	0
Mvmt Flow	4	180	55	20	233	5	12	4	8	6	13	12
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.6	9.9	8.4	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	50%	100%	0%	100%	0%	19%
Vol Thru, %	15%	0%	77%	0%	98%	42%
Vol Right, %	35%	0%	23%	0%	2%	38%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	3	197	17	200	26
LT Vol	10	3	0	17	0	5
Through Vol	3	0	151	0	196	11
RT Vol	7	0	46	0	4	10
Lane Flow Rate	24	4	235	20	238	31
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.034	0.005	0.309	0.03	0.324	0.042
Departure Headway (Hd)	5.176	5.416	4.75	5.422	4.906	4.913
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	692	663	760	662	736	730
Service Time	3.202	3.131	2.465	3.137	2.621	2.937
HCM Lane V/C Ratio	0.035	0.006	0.309	0.03	0.323	0.042
HCM Control Delay	8.4	8.2	9.6	8.3	10	8.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0	1.3	0.1	1.4	0.1

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	61	1	283	26	102	0	0	107	208
Future Vol, veh/h	0	0	0	61	1	283	26	102	0	0	107	208
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	3	3	3	5	5	5	4	4	4
Mvmt Flow	0	0	0	67	1	311	29	112	0	0	118	229

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	288	288	112	118	0	-	-	-	0
Stage 1	170	170	-	-	-	-	-	-	-
Stage 2	118	118	-	-	-	-	-	-	-
Critical Hdwy	6.43	6.53	6.23	4.15	-	-	-	-	-
Critical Hdwy Stg 1	5.43	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	2.245	-	-	-	-	-
Pot Cap-1 Maneuver	700	620	938	1452	-	0	0	-	-
Stage 1	857	756	-	-	-	0	0	-	-
Stage 2	905	796	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	685	0	938	1452	-	-	-	-	-
Mov Cap-2 Maneuver	685	0	-	-	-	-	-	-	-
Stage 1	839	0	-	-	-	-	-	-	-
Stage 2	905	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1452	-	685	938	-	-
HCM Lane V/C Ratio	0.02	-	0.099	0.332	-	-
HCM Control Delay (s)	7.5	0	10.8	10.7	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	1.5	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	1	6	0	0	0	0	67	72	158	89	0
Future Vol, veh/h	93	1	6	0	0	0	0	67	72	158	89	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	0	0	0	3	3	3	4	4	4
Mvmt Flow	107	1	7	0	0	0	0	77	83	182	102	0

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	585	626	102				-	0	0	160	0	0
Stage 1	466	466	-				-	-	-	-	-	-
Stage 2	119	160	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.236	-	-
Pot Cap-1 Maneuver	473	401	953				0	-	-	1407	-	0
Stage 1	632	562	-				0	-	-	-	-	0
Stage 2	906	766	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	408	0	953				-	-	-	1407	-	-
Mov Cap-2 Maneuver	408	0	-				-	-	-	-	-	-
Stage 1	632	0	-				-	-	-	-	-	-
Stage 2	782	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0	5.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	1407	-
HCM Lane V/C Ratio	-	-	0.272	0.129	-
HCM Control Delay (s)	-	-	16.7	7.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.4	-

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	381	114	135	450	0	0	0	0	154	0	133
Future Vol, veh/h	0	381	114	135	450	0	0	0	0	154	0	133
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	175	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	414	124	147	489	0	0	0	0	167	0	145

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	-	414	0	0				990	1197	245
Stage 1	-	-	-	-	-	-				783	783	-
Stage 2	-	-	-	-	-	-				207	414	-
Critical Hdwy	-	-	-	4.14	-	-				6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-				5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.84	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-				3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	0	1141	-	0				243	185	755
Stage 1	0	-	0	-	-	0				411	403	-
Stage 2	0	-	0	-	-	0				807	591	-
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	1141	-	-				200	0	755
Mov Cap-2 Maneuver	-	-	-	-	-	-				200	0	-
Stage 1	-	-	-	-	-	-				411	0	-
Stage 2	-	-	-	-	-	-				664	0	-

Approach	EB			WB						SB		
HCM Control Delay, s	0			2.4						46.1		
HCM LOS										E		

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	1141	-	200	755
HCM Lane V/C Ratio	-	0.129	-	0.837	0.191
HCM Control Delay (s)	-	8.6	0.5	76.5	10.9
HCM Lane LOS	-	A	A	F	B
HCM 95th %tile Q(veh)	-	0.4	-	6.1	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	338	0	0	282	109	351	1	194	0	0	0
Future Volume (veh/h)	164	338	0	0	282	109	351	1	194	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1535	1535	0	0	1547	1547	1522	1522	1522			
Adj Flow Rate, veh/h	169	348	0	0	291	0	362	1	200			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	6	6	0	0	5	5	7	7	7			
Cap, veh/h	0	958	0	0	966		534	1	476			
Arrive On Green	0.00	0.33	0.00	0.00	0.33	0.00	0.37	0.37	0.37			
Sat Flow, veh/h	0	2993	0	0	3094	0	1446	4	1290			
Grp Volume(v), veh/h	0	348	0	0	291	0	363	0	200			
Grp Sat Flow(s),veh/h/ln	0	1458	0	0	1470	0	1450	0	1290			
Q Serve(g_s), s	0.0	2.8	0.0	0.0	2.2	0.0	6.4	0.0	3.5			
Cycle Q Clear(g_c), s	0.0	2.8	0.0	0.0	2.2	0.0	6.4	0.0	3.5			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	958	0	0	966		535	0	476			
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.30		0.68	0.00	0.42			
Avail Cap(c_a), veh/h	0	6169	0	0	3844		1438	0	1280			
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	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.8	0.0	0.0	7.6	0.0	8.1	0.0	7.2			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	1.5	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	1.0	0.0	0.0	0.8	0.0	2.3	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	0.0	0.0	7.8	0.0	9.6	0.0	7.8			
LnGrp LOS	A	A	A	A	A		A	A	A			
Approach Vol, veh/h		348			291			563				
Approach Delay, s/veh		8.0			7.8			8.9				
Approach LOS		A			A			A				

Timer - Assigned Phs	1	2		4		6			
Phs Duration (G+Y+Rc), s	0.0	14.6		15.8		14.6			
Change Period (Y+Rc), s	4.6	4.6		4.6		4.6			
Max Green Setting (Gmax), s	20.0	39.8		30.2		64.4			
Max Q Clear Time (g_c+I1), s	0.0	4.2		8.4		4.8			
Green Ext Time (p_c), s	0.0	1.9		2.9		2.5			

Intersection Summary			
HCM 6th Ctrl Delay			8.4
HCM 6th LOS			A

Notes

Unsignalized Delay for [WBR] 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)	33	0	31	6	0	0	24	885	13	5	931	19
Future Volume (veh/h)	33	0	31	6	0	0	24	885	13	5	931	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		1.00	1.00		0.98	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	1447	1447	1447	1610	1610	1610	1560	1560	1560	1560	1560	1560
Adj Flow Rate, veh/h	38	0	36	7	0	0	28	1017	15	6	1070	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	13	13	13	0	0	0	4	4	4	4	4	4
Cap, veh/h	128	0	73	95	97	0	460	2529	37	475	2465	51
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.00	0.02	0.85	0.85	0.01	0.83	0.83
Sat Flow, veh/h	1268	0	1202	1374	1610	0	1485	2988	44	1485	2969	61
Grp Volume(v), veh/h	38	0	36	7	0	0	28	504	528	6	534	558
Grp Sat Flow(s),veh/h/ln	1268	0	1202	1374	1610	0	1485	1482	1551	1485	1482	1549
Q Serve(g_s), s	4.1	0.0	4.1	0.7	0.0	0.0	0.4	11.1	11.1	0.1	13.4	13.4
Cycle Q Clear(g_c), s	4.1	0.0	4.1	4.8	0.0	0.0	0.4	11.1	11.1	0.1	13.4	13.4
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	128	0	73	95	97	0	460	1254	1313	475	1230	1286
V/C Ratio(X)	0.30	0.00	0.50	0.07	0.00	0.00	0.06	0.40	0.40	0.01	0.43	0.43
Avail Cap(c_a), veh/h	323	0	258	306	345	0	531	1254	1313	570	1230	1286
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	0.00	0.87	0.87	0.87	0.94	0.94	0.94
Uniform Delay (d), s/veh	63.7	0.0	63.7	66.0	0.0	0.0	2.2	2.5	2.5	2.1	3.2	3.2
Incr Delay (d2), s/veh	1.3	0.0	5.2	0.3	0.0	0.0	0.0	0.8	0.8	0.0	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.0	2.4	0.5	0.0	0.0	0.1	4.8	5.0	0.0	6.2	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	0.0	68.9	66.3	0.0	0.0	2.2	3.3	3.3	2.1	4.2	4.2
LnGrp LOS	E	A	E	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		74			7			1060			1098	
Approach Delay, s/veh		66.9			66.3			3.3			4.2	
Approach LOS		E			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	122.5		12.5	7.3	120.2		12.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	88.0		30.0	10.0	88.0		30.0				
Max Q Clear Time (g_c+I1), s	2.1	13.1		6.1	2.4	15.4		6.8				
Green Ext Time (p_c), s	0.0	8.9		0.3	0.0	9.7		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	613	273	5	343	8	230	68	67	117	112	26
Future Volume (veh/h)	2	613	273	5	343	8	230	68	67	117	112	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1510	1510	1510	1497	1497	1497	1484	1484	1484	1535	1535	1535
Adj Flow Rate, veh/h	2	689	0	6	385	9	258	76	75	131	126	29
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	10	10	10	6	6	6
Cap, veh/h	3	744		9	724	17	290	137	136	156	161	136
Arrive On Green	0.00	0.49	0.00	0.01	0.50	0.50	0.20	0.20	0.20	0.11	0.10	0.10
Sat Flow, veh/h	1438	1510	1279	1426	1457	34	1414	686	677	1462	1535	1301
Grp Volume(v), veh/h	2	689	0	6	0	394	258	0	151	131	126	29
Grp Sat Flow(s),veh/h/ln	1438	1510	1279	1426	0	1491	1414	0	1363	1462	1535	1301
Q Serve(g_s), s	0.1	45.0	0.0	0.4	0.0	19.1	18.8	0.0	10.5	9.3	8.5	2.2
Cycle Q Clear(g_c), s	0.1	45.0	0.0	0.4	0.0	19.1	18.8	0.0	10.5	9.3	8.5	2.2
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	3	744		9	0	741	290	0	273	156	161	136
V/C Ratio(X)	0.64	0.93		0.69	0.00	0.53	0.89	0.00	0.55	0.84	0.78	0.21
Avail Cap(c_a), veh/h	218	929		135	0	790	455	0	438	318	537	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	25.0	0.0	52.4	0.0	18.2	40.9	0.0	38.0	46.3	46.1	43.3
Incr Delay (d2), s/veh	102.7	13.3	0.0	53.1	0.0	1.2	14.9	0.0	1.3	10.4	6.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	24.2	0.0	0.5	0.0	10.5	12.0	0.0	6.3	6.9	6.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.4	38.3	0.0	105.5	0.0	19.3	55.8	0.0	39.3	56.8	52.2	43.9
LnGrp LOS	F	D		F	A	B	E	A	D	E	D	D
Approach Vol, veh/h		691			400			409			286	
Approach Delay, s/veh		38.6			20.6			49.7			53.5	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	57.5	26.8	16.2	4.8	57.9	16.7	26.3
Change Period (Y+Rc), s	4.6	5.4	5.1	5.1	4.6	* 5.4	5.4	* 5.1
Max Green Setting (Gmax), s	10.0	65.0	34.0	37.0	16.0	* 56	23.0	* 34
Max Q Clear Time (g_c+I1), s	2.4	47.0	20.8	10.5	2.1	21.1	11.3	12.5
Green Ext Time (p_c), s	0.0	5.1	0.9	0.6	0.0	4.7	0.2	0.6

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

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)	46	1	11	1	2	4	38	712	6	18	368	8
Future Volume (veh/h)	46	1	11	1	2	4	38	712	6	18	368	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1020	1020	1020	1610	1610	1610	1547	1547	1547	1510	1510	1510
Adj Flow Rate, veh/h	48	1	12	1	2	4	40	749	6	19	387	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, %	47	47	47	0	0	0	5	5	5	8	8	8
Cap, veh/h	229	1	66	97	29	46	64	879	745	34	827	701
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.04	0.57	0.57	0.02	0.55	0.55
Sat Flow, veh/h	930	19	864	73	375	598	1474	1547	1311	1438	1510	1279
Grp Volume(v), veh/h	49	0	12	7	0	0	40	749	6	19	387	8
Grp Sat Flow(s),veh/h/ln	950	0	864	1046	0	0	1474	1547	1311	1438	1510	1279
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.0	1.2	18.3	0.1	0.6	7.0	0.1
Cycle Q Clear(g_c), s	2.2	0.0	0.6	2.2	0.0	0.0	1.2	18.3	0.1	0.6	7.0	0.1
Prop In Lane	0.98		1.00	0.14		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	0	66	171	0	0	64	879	745	34	827	701
V/C Ratio(X)	0.21	0.00	0.18	0.04	0.00	0.00	0.62	0.85	0.01	0.56	0.47	0.01
Avail Cap(c_a), veh/h	705	0	517	920	0	0	261	1371	1162	255	1338	1134
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	19.5	19.4	0.0	0.0	21.2	8.2	4.2	21.8	6.2	4.6
Incr Delay (d2), s/veh	0.5	0.0	1.3	0.1	0.0	0.0	9.4	3.1	0.0	13.9	0.4	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(95%),veh/ln	0.9	0.0	0.2	0.1	0.0	0.0	1.0	8.3	0.0	0.6	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	0.0	20.8	19.5	0.0	0.0	30.6	11.2	4.2	35.7	6.6	4.7
LnGrp LOS	C	A	C	B	A	A	C	B	A	D	A	A
Approach Vol, veh/h		61			7			795			414	
Approach Delay, s/veh		20.8			19.5			12.1			7.9	
Approach LOS		C			B			B			A	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	5.6	31.6	7.9	6.5	30.7	7.9
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	6.0	4.5
Max Green Setting (Gmax), s	8.0	40.0	27.0	8.0	40.0	27.0
Max Q Clear Time (g_c+I1), s	2.6	20.3	4.2	3.2	9.0	4.2
Green Ext Time (p_c), s	0.0	5.3	0.2	0.0	2.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Volume (veh/h)	2	135	26	6	57	8	24	6	7	14	20	9
Future Volume (veh/h)	2	135	26	6	57	8	24	6	7	14	20	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	1484	1484	1484	1472	1472	1472	1547	1547	1547
Adj Flow Rate, veh/h	3	178	34	8	75	11	32	8	9	18	26	12
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	7	7	7	10	10	10	11	11	11	5	5	5
Cap, veh/h	193	322	61	220	314	44	537	119	77	325	291	100
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	10	1234	234	61	1203	168	704	369	241	239	905	312
Grp Volume(v), veh/h	215	0	0	94	0	0	49	0	0	56	0	0
Grp Sat Flow(s),veh/h/ln	1477	0	0	1432	0	0	1315	0	0	1457	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	1.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
Prop In Lane	0.01		0.16	0.09		0.12	0.65		0.18	0.32		0.21
Lane Grp Cap(c), veh/h	576	0	0	578	0	0	733	0	0	716	0	0
V/C Ratio(X)	0.37	0.00	0.00	0.16	0.00	0.00	0.07	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	2581	0	0	2496	0	0	2413	0	0	2571	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	5.6	0.0	0.0	4.6	0.0	0.0	4.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.7	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	5.7	0.0	0.0	4.6	0.0	0.0	4.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		215			94			49			56	
Approach Delay, s/veh		6.5			5.7			4.6			4.6	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	10.1	9.0	10.1	9.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	31.0	31.0	31.0	31.0
Max Q Clear Time (g_c+I1), s	2.5	4.4	2.5	3.0
Green Ext Time (p_c), s	0.2	1.3	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

MOVEMENT SUMMARY

Site: 328 [SR 3 & Ariport Rd (Site Folder: 2023 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SR 3															
8	T1	All MCs	805	8.0	805	8.0	0.632	5.4	LOS A	4.5	119.4	0.23	0.43	0.23	37.5
18	R2	All MCs	24	8.0	24	8.0	0.632	5.1	LOS A	4.5	119.4	0.23	0.43	0.23	29.7
Approach			830	8.0	830	8.0	0.632	5.4	LOS A	4.5	119.4	0.23	0.43	0.23	37.2
East: Ariport Rd															
1	L2	All MCs	18	7.0	18	7.0	0.082	11.7	LOS B	0.5	12.4	0.76	0.69	0.76	26.5
16	R2	All MCs	33	7.0	33	7.0	0.082	7.7	LOS A	0.5	12.4	0.76	0.69	0.76	26.8
Approach			51	7.0	51	7.0	0.082	9.1	LOS A	0.5	12.4	0.76	0.69	0.76	26.7
North: SR 3															
7	L2	All MCs	43	8.0	43	8.0	0.427	10.9	LOS B	2.8	73.2	0.13	0.44	0.13	29.7
4	T1	All MCs	525	8.0	525	8.0	0.427	5.0	LOS A	2.8	73.2	0.13	0.44	0.13	37.8
Approach			568	8.0	568	8.0	0.427	5.4	LOS A	2.8	73.2	0.13	0.44	0.13	37.0
All Vehicles			1448	8.0	1448	8.0	0.632	5.5	LOS A	4.5	119.4	0.21	0.44	0.21	36.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	493	425	392	385	0	70	0	290	448	290	8
Future Volume (veh/h)	0	493	425	392	385	0	70	0	290	448	290	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1560	1560	1560	1560	0	1535	0	1535	1560	1560	1560
Adj Flow Rate, veh/h	0	503	434	400	393	0	71	0	0	376	409	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	4	4	4	4	0	6	0	6	4	4	4
Cap, veh/h	0	1360	603	456	1918	0	0	0		435	457	
Arrive On Green	0.00	0.46	0.46	0.21	0.86	0.00	0.00	0.00	0.00	0.29	0.29	0.00
Sat Flow, veh/h	0	3042	1315	2882	3042	0		0		1485	1560	1322
Grp Volume(v), veh/h	0	503	434	400	393	0		0.0		376	409	0
Grp Sat Flow(s),veh/h/ln	0	1482	1315	1441	1482	0				1485	1560	1322
Q Serve(g_s), s	0.0	16.6	40.0	20.2	3.4	0.0				36.0	37.7	0.0
Cycle Q Clear(g_c), s	0.0	16.6	40.0	20.2	3.4	0.0				36.0	37.7	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1360	603	456	1918	0				435	457	
V/C Ratio(X)	0.00	0.37	0.72	0.88	0.20	0.00				0.86	0.90	
Avail Cap(c_a), veh/h	0	1360	603	624	1918	0				560	588	
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.4	32.8	57.8	3.9	0.0				50.2	50.9	0.0
Incr Delay (d2), s/veh	0.0	0.8	7.2	11.0	0.2	0.0				11.5	14.3	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
%ile BackOfQ(95%),veh/ln	0.0	10.1	19.9	12.2	1.8	0.0				20.9	23.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.2	40.0	68.8	4.1	0.0				61.7	65.2	0.0
LnGrp LOS	A	C	D	E	A	A				E	E	
Approach Vol, veh/h		937			793						785	
Approach Delay, s/veh		33.1			36.8						63.5	
Approach LOS		C			D						E	

Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			28.3	73.3		48.4		101.6				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			32.5	29.5		56.5		64.5				
Max Q Clear Time (g_c+I1), s			22.2	42.0		39.7		5.4				
Green Ext Time (p_c), s			1.6	0.0		4.2		3.4				

Intersection Summary		
HCM 6th Ctrl Delay		43.8
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] 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)	84	1101	0	0	792	773	63	1	147	0	0	0
Future Volume (veh/h)	84	1101	0	0	792	773	63	1	147	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1585	1585	0	0	1572	1572	1597	1597	1597			
Adj Flow Rate, veh/h	88	1147	0	0	825	0	66	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	3	3	1	1	1			
Cap, veh/h	898	2646	0	0	904		82	1				
Arrive On Green	1.00	1.00	0.00	0.00	0.61	0.00	0.05	0.05	0.00			
Sat Flow, veh/h	1509	3091	0	0	3066	1332	1500	23	1354			
Grp Volume(v), veh/h	88	1147	0	0	825	0	67	0	0			
Grp Sat Flow(s),veh/h/ln	1509	1506	0	0	1494	1332	1522	0	1354			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	36.5	0.0	6.5	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	36.5	0.0	6.5	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	898	2646	0	0	904		83	0				
V/C Ratio(X)	0.10	0.43	0.00	0.00	0.91		0.81	0.00				
Avail Cap(c_a), veh/h	898	2646	0	0	2012		213	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.61	0.61	0.00	0.00	0.66	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	27.9	0.0	70.1	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	10.8	0.0	16.5	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			
%ile BackOfQ(95%),veh/ln	0.0	0.2	0.0	0.0	15.2	0.0	5.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	38.6	0.0	86.7	0.0	0.0			
LnGrp LOS	A	A	A	A	D		F	A				
Approach Vol, veh/h		1235			825			67				
Approach Delay, s/veh		0.3			38.6			86.7				
Approach LOS		A			D			F				
Timer - Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				136.8		13.2	86.4	50.4				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				119.0		21.0	13.0	101.0				
Max Q Clear Time (g_c+I1), s				2.0		8.5	2.0	38.5				
Green Ext Time (p_c), s				11.4		0.2	0.1	6.9				
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR, WBR] 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)	63	1043	143	5	1475	50	61	4	23	42	3	35
Future Volume (veh/h)	63	1043	143	5	1475	50	61	4	23	42	3	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.98		0.98	0.99		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	1585	1585	1585	1585	1585	1585	1547	1547	1547	1560	1560	1560
Adj Flow Rate, veh/h	66	1086	0	5	1536	52	64	4	24	44	3	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	4	4	4
Cap, veh/h	209	1166		678	2228	969	112	11	29	170	10	151
Arrive On Green	0.08	0.77	0.00	0.78	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1509	3011	1343	1509	3011	1310	610	92	248	1056	84	1295
Grp Volume(v), veh/h	66	1086	0	5	1536	52	92	0	0	47	0	36
Grp Sat Flow(s),veh/h/ln	1509	1506	1343	1509	1506	1310	950	0	0	1140	0	1295
Q Serve(g_s), s	4.4	43.8	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0	0.0	3.8
Cycle Q Clear(g_c), s	4.4	43.8	0.0	0.0	0.0	0.0	15.2	0.0	0.0	5.8	0.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	0.70		0.26	0.94		1.00
Lane Grp Cap(c), veh/h	209	1166		678	2228	969	152	0	0	180	0	151
V/C Ratio(X)	0.32	0.93		0.01	0.69	0.05	0.61	0.00	0.00	0.26	0.00	0.24
Avail Cap(c_a), veh/h	249	1857		678	2228	969	279	0	0	311	0	276
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.00	0.71	0.71	0.71	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	15.3	0.0	7.6	0.0	0.0	67.1	0.0	0.0	61.0	0.0	60.2
Incr Delay (d2), s/veh	0.7	12.9	0.0	0.0	1.3	0.1	3.9	0.0	0.0	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	12.7	0.0	0.1	0.7	0.0	6.6	0.0	0.0	3.1	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	28.2	0.0	7.6	1.3	0.1	71.0	0.0	0.0	61.8	0.0	61.0
LnGrp LOS	C	C		A	A	A	E	A	A	E	A	E
Approach Vol, veh/h		1152			1593			92			83	
Approach Delay, s/veh		28.3			1.2			71.0			61.4	
Approach LOS		C			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.5	63.9	63.6		22.5	11.0	116.5
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		32.0	10.0	* 93		32.0	10.0	92.5
Max Q Clear Time (g_c+I1), s		17.2	2.0	45.8		7.8	6.4	2.0
Green Ext Time (p_c), s		0.4	0.0	12.3		0.3	0.0	26.5

Intersection Summary		
HCM 6th Ctrl Delay		15.8
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)	1	1009	63	108	1420	4	113	0	90	2	0	0
Future Volume (veh/h)	1	1009	63	108	1420	4	113	0	90	2	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		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	1585	1585	1585	1585	1585	1585	1572	1572	1572	1610	1610	1610
Adj Flow Rate, veh/h	1	1040	65	111	1464	4	116	0	93	2	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	0	0	0
Cap, veh/h	561	2216	967	319	1456	4	193	0	213	78	0	0
Arrive On Green	0.64	1.00	1.00	0.12	0.95	0.95	0.10	0.00	0.10	0.10	0.00	0.00
Sat Flow, veh/h	1509	3011	1315	1509	3080	8	1467	0	1316	299	0	0
Grp Volume(v), veh/h	1	1040	65	111	715	753	116	0	93	2	0	0
Grp Sat Flow(s),veh/h/ln	1509	1506	1315	1509	1506	1583	1467	0	1316	299	0	0
Q Serve(g_s), s	0.0	0.0	0.0	6.6	70.9	70.9	0.0	0.0	9.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	6.6	70.9	70.9	11.4	0.0	9.6	11.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	561	2216	967	319	712	748	193	0	213	78	0	0
V/C Ratio(X)	0.00	0.47	0.07	0.35	1.01	1.01	0.60	0.00	0.44	0.03	0.00	0.00
Avail Cap(c_a), veh/h	561	2216	967	346	1009	1061	316	0	329	193	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	22.8	4.1	4.1	66.1	0.0	56.8	71.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.1	0.5	31.4	30.7	3.0	0.0	1.4	0.1	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(95%),veh/ln	0.0	0.3	0.1	4.0	11.7	12.1	8.0	0.0	5.9	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.6	0.1	23.3	35.5	34.8	69.1	0.0	58.2	71.9	0.0	0.0
LnGrp LOS	B	A	A	C	F	F	E	A	E	E	A	A
Approach Vol, veh/h		1106			1579			209			2	
Approach Delay, s/veh		0.6			34.3			64.2			71.9	
Approach LOS		A			C			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		19.8	45.5	84.6		19.8	14.0	116.2
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		28.0	6.0	* 1E2		28.0	12.0	94.5
Max Q Clear Time (g_c+I1), s		13.4	2.0	72.9		13.7	8.6	2.0
Green Ext Time (p_c), s		0.8	0.0	14.5		0.0	0.1	12.8

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1105	49	84	1406	41	84
Future Volume (veh/h)	1105	49	84	1406	41	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1610	1610
Adj Flow Rate, veh/h	1188	53	90	1512	44	90
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	2358	1023	458	2576	119	160
Arrive On Green	1.00	1.00	0.04	0.86	0.08	0.08
Sat Flow, veh/h	3091	1307	1509	3091	1533	1364
Grp Volume(v), veh/h	1188	53	90	1512	44	90
Grp Sat Flow(s),veh/h/ln	1506	1307	1509	1506	1533	1364
Q Serve(g_s), s	0.0	0.0	1.6	21.9	4.1	9.4
Cycle Q Clear(g_c), s	0.0	0.0	1.6	21.9	4.1	9.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2358	1023	458	2576	119	160
V/C Ratio(X)	0.50	0.05	0.20	0.59	0.37	0.56
Avail Cap(c_a), veh/h	2358	1023	509	2576	348	363
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.76	0.76	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	2.2	3.1	65.7	62.6
Incr Delay (d2), s/veh	0.7	0.1	0.2	0.8	1.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.7	7.8	3.0	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.7	0.1	2.3	3.9	67.5	65.7
LnGrp LOS	A	A	A	A	E	E
Approach Vol, veh/h	1241			1602	134	
Approach Delay, s/veh	0.6			3.8	66.3	
Approach LOS	A			A	E	

Timer - Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			10.9	122.5		16.7		133.3
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			11.0	90.0		34.0		106.0
Max Q Clear Time (g_c+I1), s			3.6	2.0		11.4		23.9
Green Ext Time (p_c), s			0.1	15.9		0.4		24.4

Intersection Summary	
HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1088	123	301	1381	2	71	1	290	5	4	2
Future Volume (veh/h)	1	1088	123	301	1381	2	71	1	290	5	4	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.99		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1610	1610	1610
Adj Flow Rate, veh/h	1	1145	0	317	1454	2	75	1	13	5	4	2
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, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	2	1310		560	2471	3	140	2	143	44	28	8
Arrive On Green	0.00	0.14	0.00	0.74	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1521	3035	1354	1509	3085	4	862	14	1335	86	257	76
Grp Volume(v), veh/h	1	1145	0	317	709	747	76	0	13	11	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1354	1509	1506	1584	877	0	1335	419	0	0
Q Serve(g_s), s	0.1	55.4	0.0	14.0	0.0	0.0	0.0	0.0	1.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	55.4	0.0	14.0	0.0	0.0	14.0	0.0	1.3	14.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.45		0.18
Lane Grp Cap(c), veh/h	2	1310		560	1206	1269	142	0	143	80	0	0
V/C Ratio(X)	0.40	0.87		0.57	0.59	0.59	0.54	0.00	0.09	0.14	0.00	0.00
Avail Cap(c_a), veh/h	106	1487		560	1206	1269	287	0	280	230	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.00	0.34	0.34	0.34	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.9	60.3	0.0	14.0	0.0	0.0	66.0	0.0	60.3	60.6	0.0	0.0
Incr Delay (d2), s/veh	71.0	7.2	0.0	0.5	0.7	0.7	3.1	0.0	0.3	0.8	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(95%),veh/ln	0.2	31.4	0.0	5.1	0.4	0.4	5.4	0.0	0.8	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.9	67.5	0.0	14.5	0.7	0.7	69.1	0.0	60.6	61.4	0.0	0.0
LnGrp LOS	F	E		B	A	A	E	A	E	E	A	A
Approach Vol, veh/h		1146			1773			89			11	
Approach Delay, s/veh		67.6			3.2			67.9			61.4	
Approach LOS		E			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.6	60.1	69.3		20.6	4.7	124.6
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5	31.5	73.5		31.5	10.5	94.5
Max Q Clear Time (g_c+I1), s		16.0	16.0	57.4		16.1	2.1	2.0
Green Ext Time (p_c), s		0.3	0.8	7.3		0.0	0.0	15.7

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Notes

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)	149	1156	58	33	1482	96	75	38	67	99	30	135
Future Volume (veh/h)	149	1156	58	33	1482	96	75	38	67	99	30	135
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		0.99	1.00		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	155	1204	60	34	1544	100	78	40	70	103	31	141
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	304	1295	561	332	1345	597	107	147	123	271	38	173
Arrive On Green	0.40	0.85	0.85	0.22	0.45	0.45	0.04	0.09	0.09	0.10	0.15	0.15
Sat Flow, veh/h	1521	3035	1315	1509	3011	1336	1533	1610	1346	1509	246	1119
Grp Volume(v), veh/h	155	1204	60	34	1544	100	78	40	70	103	0	172
Grp Sat Flow(s),veh/h/ln	1521	1518	1315	1509	1506	1336	1533	1610	1346	1509	0	1365
Q Serve(g_s), s	11.5	42.2	1.1	2.7	67.0	6.7	2.8	3.5	7.5	0.0	0.0	18.3
Cycle Q Clear(g_c), s	11.5	42.2	1.1	2.7	67.0	6.7	2.8	3.5	7.5	0.0	0.0	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	304	1295	561	332	1345	597	107	147	123	271	0	211
V/C Ratio(X)	0.51	0.93	0.11	0.10	1.15	0.17	0.73	0.27	0.57	0.38	0.00	0.81
Avail Cap(c_a), veh/h	304	1518	657	332	1345	597	120	370	310	271	0	323
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)	0.60	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.4	9.4	6.4	46.7	41.5	24.8	69.8	63.5	65.4	57.7	0.0	61.3
Incr Delay (d2), s/veh	1.2	8.6	0.2	0.1	75.7	0.6	23.8	1.0	4.1	0.9	0.0	9.0
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(95%),veh/ln	6.4	8.0	0.6	1.9	53.6	4.1	6.6	2.7	4.9	6.6	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	18.0	6.6	46.8	117.2	25.4	93.6	64.5	69.5	58.6	0.0	70.3
LnGrp LOS	D	B	A	D	F	C	F	E	E	E	A	E
Approach Vol, veh/h		1419			1678			188			275	
Approach Delay, s/veh		20.0			110.3			78.4			65.9	
Approach LOS		B			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	20.2	44.0	64.5	11.8	29.7	36.5	72.0
Change Period (Y+Rc), s	6.0	6.5	6.5	* 5	6.0	6.5	6.5	5.0
Max Green Setting (Gmax), s	8.0	34.5	9.0	* 75	7.0	35.5	16.5	67.0
Max Q Clear Time (g_c+I1), s	12.0	9.5	4.7	44.2	4.8	20.3	13.5	69.0
Green Ext Time (p_c), s	0.1	0.4	0.0	10.8	0.1	0.9	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	69.2
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	1256	17	36	1598	17	1	0	21	1	0	36
Future Vol, veh/h	24	1256	17	36	1598	17	1	0	21	1	0	36
Conflicting Peds, #/hr	5	0	10	10	0	5	10	0	10	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	2	2	2
Mvmt Flow	25	1295	18	37	1647	18	1	0	22	1	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1670	0	0	1323	0	0	2263	3099	668	2443	3108	848
Stage 1	-	-	-	-	-	-	1355	1355	-	1735	1735	-
Stage 2	-	-	-	-	-	-	908	1744	-	708	1373	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.54	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.52	4.02	3.32
Pot Cap-1 Maneuver	385	-	-	518	-	-	23	12	405	16	11	305
Stage 1	-	-	-	-	-	-	160	220	-	91	140	-
Stage 2	-	-	-	-	-	-	301	142	-	392	212	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	384	-	-	514	-	-	18	10	399	13	9	302
Mov Cap-2 Maneuver	-	-	-	-	-	-	18	10	-	13	9	-
Stage 1	-	-	-	-	-	-	148	204	-	85	129	-
Stage 2	-	-	-	-	-	-	243	131	-	344	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	25	28.8
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	384	-	-	514	-	-	189
HCM Lane V/C Ratio	0.112	0.064	-	-	0.072	-	-	0.202
HCM Control Delay (s)	25	15	-	-	12.5	-	-	28.8
HCM Lane LOS	D	C	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.2	-	-	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	774	0	659	14	0	886
Future Volume (veh/h)	774	0	659	14	0	886
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	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	1585	1585	1610	1610	0	1610
Adj Flow Rate, veh/h	806	0	686	15	0	923
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	0	0	0	0
Cap, veh/h	1623	2881	1119	24	0	0
Arrive On Green	0.55	0.00	0.73	0.73	0.00	0.00
Sat Flow, veh/h	2928	3091	3140	67	0	
Grp Volume(v), veh/h	806	0	343	358	0.0	
Grp Sat Flow(s),veh/h/ln	1464	1506	1530	1597		
Q Serve(g_s), s	25.4	0.0	16.4	16.4		
Cycle Q Clear(g_c), s	25.4	0.0	16.4	16.4		
Prop In Lane	1.00			0.04		
Lane Grp Cap(c), veh/h	1623	2881	559	584		
V/C Ratio(X)	0.50	0.00	0.61	0.61		
Avail Cap(c_a), veh/h	1623	2881	559	584		
HCM Platoon Ratio	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	20.6	0.0	15.0	15.0		
Incr Delay (d2), s/veh	0.3	0.0	2.2	2.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	13.5	0.0	7.3	7.6		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	0.0	17.1	17.1		
LnGrp LOS	C	A	B	B		
Approach Vol, veh/h		806	701			
Approach Delay, s/veh		20.8	17.1			
Approach LOS		C	B			
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	89.6	60.4				150.0
Change Period (Y+Rc), s	6.5	5.5				6.5
Max Green Setting (Gmax), s	44.5	49.5				113.5
Max Q Clear Time (g_c+I1), s	27.4	18.4				0.0
Green Ext Time (p_c), s	3.7	5.6				0.0
Intersection Summary						
HCM 6th Ctrl Delay			19.1			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	371	6	108	771	36	5	8	47	2	8	11
Future Volume (veh/h)	32	371	6	108	771	36	5	8	47	2	8	11
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		0.99	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	1597	1597	1597	1610	1610	1610	1585	1585	1585	1610	1610	1610
Adj Flow Rate, veh/h	34	399	6	116	829	39	5	9	51	2	9	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	0	0	0
Cap, veh/h	621	2490	1085	925	2466	116	29	15	65	29	39	46
Arrive On Green	0.06	1.00	1.00	0.08	1.00	1.00	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1521	3035	1322	1533	2971	140	52	244	1080	51	659	775
Grp Volume(v), veh/h	34	399	6	116	427	441	65	0	0	23	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1322	1533	1530	1581	1376	0	0	1485	0	0
Q Serve(g_s), s	0.5	0.0	0.0	1.8	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.8	0.0	0.0	7.0	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	0.08		0.78	0.09		0.52
Lane Grp Cap(c), veh/h	621	2490	1085	925	1269	1312	108	0	0	115	0	0
V/C Ratio(X)	0.05	0.16	0.01	0.13	0.34	0.34	0.60	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	707	2490	1085	1089	1269	1312	236	0	0	250	0	0
HCM Platoon Ratio	2.00	2.00	2.00	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	0.88	0.88	0.88	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	1.5	0.0	0.0	69.6	0.0	0.0	67.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.6	0.6	5.3	0.0	0.0	0.8	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(95%),veh/ln	0.2	0.1	0.0	0.7	0.4	0.4	4.8	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.1	0.0	1.6	0.6	0.6	74.8	0.0	0.0	68.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		439			984			65			23	
Approach Delay, s/veh		0.3			0.7			74.8			68.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	13.0	10.0	127.1	13.0	8.5	128.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	23.0	22.0	93.0	23.0	13.0	102.0
Max Q Clear Time (g_c+I1), s	9.0	3.8	2.0	4.2	2.5	2.0
Green Ext Time (p_c), s	0.2	0.3	3.2	0.1	0.0	7.3

Intersection Summary	
HCM 6th Ctrl Delay	4.8
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	352	57	113	762	58	107	134	23	42	108	29
Future Volume (veh/h)	23	352	57	113	762	58	107	134	23	42	108	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	24	374	61	120	811	62	114	143	24	45	115	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	518	1766	286	705	1967	150	172	192	32	149	134	36
Arrive On Green	0.03	0.68	0.68	0.08	1.00	1.00	0.07	0.14	0.14	0.03	0.11	0.11
Sat Flow, veh/h	1521	2615	423	1521	2852	218	1521	1329	223	1521	1204	325
Grp Volume(v), veh/h	24	216	219	120	432	441	114	0	167	45	0	146
Grp Sat Flow(s),veh/h/ln	1521	1518	1520	1521	1518	1552	1521	0	1552	1521	0	1528
Q Serve(g_s), s	0.7	8.1	8.2	3.8	0.0	0.0	9.8	0.0	15.5	3.9	0.0	14.1
Cycle Q Clear(g_c), s	0.7	8.1	8.2	3.8	0.0	0.0	9.8	0.0	15.5	3.9	0.0	14.1
Prop In Lane	1.00		0.28	1.00		0.14	1.00		0.14	1.00		0.21
Lane Grp Cap(c), veh/h	518	1025	1027	705	1047	1071	172	0	225	149	0	170
V/C Ratio(X)	0.05	0.21	0.21	0.17	0.41	0.41	0.66	0.00	0.74	0.30	0.00	0.86
Avail Cap(c_a), veh/h	581	1025	1027	746	1047	1071	172	0	341	250	0	387
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)	0.99	0.99	0.99	0.93	0.93	0.93	0.64	0.00	0.64	0.90	0.00	0.90
Uniform Delay (d), s/veh	6.8	9.2	9.2	6.6	0.0	0.0	53.9	0.0	61.5	56.9	0.0	65.5
Incr Delay (d2), s/veh	0.0	0.5	0.5	0.1	1.1	1.1	4.9	0.0	2.3	0.4	0.0	8.1
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(95%),veh/ln	0.4	5.1	5.2	2.1	0.6	0.6	6.7	0.0	9.6	2.8	0.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	9.7	9.7	6.6	1.1	1.1	58.9	0.0	63.8	57.3	0.0	73.6
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		459			993			281			191	
Approach Delay, s/veh		9.5			1.8			61.8			69.7	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	25.7	10.0	105.3	14.0	20.7	7.8	107.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	33.0	10.0	76.0	10.0	38.0	10.0	76.0
Max Q Clear Time (g_c+I1), s	5.9	17.5	5.8	10.2	11.8	16.1	2.7	2.0
Green Ext Time (p_c), s	0.0	0.6	0.1	2.5	0.0	0.6	0.0	5.8

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	377	36	32	916	10	37	7	13	1	2	4
Future Volume (veh/h)	2	377	36	32	916	10	37	7	13	1	2	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.97		0.96	0.98		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	1597	1597	1597	1610	1610	1610	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	2	401	38	34	974	11	39	7	14	1	2	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	501	2302	217	886	2628	30	95	18	22	32	37	55
Arrive On Green	0.01	1.00	1.00	0.03	0.85	0.85	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1521	2802	264	1533	3097	35	809	268	328	72	535	810
Grp Volume(v), veh/h	2	216	223	34	481	504	60	0	0	7	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1549	1533	1530	1603	1405	0	0	1417	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.5	10.4	10.4	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.5	10.4	10.4	6.2	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.02	0.65		0.23	0.14		0.57
Lane Grp Cap(c), veh/h	501	1246	1272	886	1298	1360	136	0	0	124	0	0
V/C Ratio(X)	0.00	0.17	0.18	0.04	0.37	0.37	0.44	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	588	1246	1272	942	1298	1360	402	0	0	392	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)	0.98	0.98	0.98	0.78	0.78	0.78	0.99	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.4	0.0	0.0	1.4	2.5	2.5	67.9	0.0	0.0	65.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.0	0.6	0.6	1.7	0.0	0.0	0.1	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(95%),veh/ln	0.0	0.2	0.2	0.2	5.0	5.3	4.2	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.4	0.3	0.3	1.4	3.1	3.1	69.6	0.0	0.0	65.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		441			1019			60			7	
Approach Delay, s/veh		0.3			3.1			69.6			65.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	14.3	8.5	127.2	14.3	4.5	131.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	39.0	10.0	89.0	39.0	9.0	90.0
Max Q Clear Time (g_c+I1), s	8.2	2.5	2.0	2.7	2.0	12.4
Green Ext Time (p_c), s	0.2	0.0	2.5	0.0	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	285	73	107	676	27	207	204	144	14	55	18
Future Volume (veh/h)	29	285	73	107	676	27	207	204	144	14	55	18
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	0.92		0.96	1.00		0.92
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	32	317	81	119	751	30	230	227	160	16	61	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	287	793	199	464	1109	44	460	461	308	152	190	58
Arrive On Green	0.03	0.33	0.33	0.08	0.37	0.37	0.20	0.27	0.27	0.02	0.08	0.08
Sat Flow, veh/h	1521	2397	603	1521	2974	119	1533	1726	1153	1521	2240	684
Grp Volume(v), veh/h	32	199	199	119	383	398	230	200	187	16	40	41
Grp Sat Flow(s),veh/h/ln	1521	1518	1482	1521	1518	1575	1533	1530	1349	1521	1518	1406
Q Serve(g_s), s	0.8	5.9	6.1	3.0	12.5	12.5	1.5	6.5	7.0	0.0	1.5	1.6
Cycle Q Clear(g_c), s	0.8	5.9	6.1	3.0	12.5	12.5	1.5	6.5	7.0	0.0	1.5	1.6
Prop In Lane	1.00		0.41	1.00		0.08	1.00		0.85	1.00		0.49
Lane Grp Cap(c), veh/h	287	502	490	464	566	587	460	409	360	152	129	119
V/C Ratio(X)	0.11	0.40	0.41	0.26	0.68	0.68	0.50	0.49	0.52	0.11	0.31	0.34
Avail Cap(c_a), veh/h	635	915	894	876	1044	1083	815	662	584	523	399	370
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	13.0	15.2	15.2	11.6	15.5	15.5	18.8	18.2	18.4	28.3	25.3	25.4
Incr Delay (d2), s/veh	0.2	0.6	0.7	0.3	1.7	1.7	1.0	1.1	1.4	0.4	1.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	3.6	3.6	1.7	7.5	7.7	4.5	4.1	3.9	0.4	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	15.8	15.9	11.9	17.2	17.1	19.8	19.3	19.8	28.7	26.9	27.5
LnGrp LOS	B	B	B	B	B	B	B	B	B	C	C	C
Approach Vol, veh/h		430			900			617			97	
Approach Delay, s/veh		15.6			16.5			19.6			27.4	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	20.2	9.0	24.0	16.4	9.5	6.5	26.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	25.5	20.5	35.5	25.5	15.5	15.5	40.5				
Max Q Clear Time (g_c+I1), s	2.0	9.0	5.0	8.1	3.5	3.6	2.8	14.5				
Green Ext Time (p_c), s	0.0	2.7	0.3	3.2	0.9	0.3	0.0	6.8				
Intersection Summary												
HCM 6th Ctrl Delay			17.8									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	453	32	20	738	9	40	12	37	7	4	17
Future Volume (veh/h)	9	453	32	20	738	9	40	12	37	7	4	17
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	0.99		0.99	0.95		0.94	0.96		0.95
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	10	503	36	22	820	10	44	13	41	8	4	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	85	1627	115	95	1730	21	216	73	131	139	75	191
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	14	2779	196	29	2955	36	476	320	572	200	327	835
Grp Volume(v), veh/h	290	0	259	445	0	407	98	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1578	0	1410	1573	0	1447	1368	0	0	1362	0	0
Q Serve(g_s), s	0.0	0.0	4.5	0.0	0.0	7.9	0.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	4.5	7.8	0.0	7.9	2.7	0.0	0.0	0.8	0.0	0.0
Prop In Lane	0.03		0.14	0.05		0.02	0.45		0.42	0.26		0.61
Lane Grp Cap(c), veh/h	1001	0	826	999	0	847	421	0	0	405	0	0
V/C Ratio(X)	0.29	0.00	0.31	0.45	0.00	0.48	0.23	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	1849	0	1611	1852	0	1652	680	0	0	662	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	0.0	5.1	5.8	0.0	5.8	15.5	0.0	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.8	1.1	0.0	1.5	1.0	0.0	0.0	0.3	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(95%),veh/ln	2.2	0.0	2.0	3.8	0.0	3.6	1.7	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	0.0	5.9	6.9	0.0	7.3	16.5	0.0	0.0	15.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		549			852			98			31	
Approach Delay, s/veh		5.8			7.1			16.5			15.0	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	33.0	15.6	33.0	15.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	55.5	20.5	55.5	20.5
Max Q Clear Time (g_c+I1), s	6.5	2.8	9.9	4.7
Green Ext Time (p_c), s	10.8	0.2	18.6	0.9

Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	211	16	39	456	100	167	478	14	55	406	110
Future Volume (veh/h)	225	211	16	39	456	100	167	478	14	55	406	110
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		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1610	1610	1610	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	239	224	17	41	485	106	178	509	15	59	432	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	3	3	3
Cap, veh/h	295	889	67	391	546	119	437	1339	39	483	960	258
Arrive On Green	0.14	0.31	0.31	0.05	0.22	0.22	0.16	0.90	0.90	0.06	0.55	0.55
Sat Flow, veh/h	1533	2880	217	1521	2465	535	1509	2987	88	1497	2328	625
Grp Volume(v), veh/h	239	118	123	41	297	294	178	256	268	59	276	273
Grp Sat Flow(s),veh/h/ln	1533	1530	1567	1521	1518	1482	1509	1506	1569	1497	1494	1459
Q Serve(g_s), s	13.8	6.9	7.1	2.4	22.8	23.1	8.3	3.2	3.2	2.7	13.3	13.5
Cycle Q Clear(g_c), s	13.8	6.9	7.1	2.4	22.8	23.1	8.3	3.2	3.2	2.7	13.3	13.5
Prop In Lane	1.00		0.14	1.00		0.36	1.00		0.06	1.00		0.43
Lane Grp Cap(c), veh/h	295	472	484	391	336	329	437	675	704	483	616	601
V/C Ratio(X)	0.81	0.25	0.25	0.10	0.88	0.89	0.41	0.38	0.38	0.12	0.45	0.45
Avail Cap(c_a), veh/h	398	567	581	435	373	364	437	675	704	637	616	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	0.97	0.97	0.97	0.63	0.63	0.63	0.98	0.98	0.98	0.70	0.70	0.70
Uniform Delay (d), s/veh	31.0	31.1	31.1	32.7	45.2	45.3	16.3	3.6	3.6	18.3	18.9	19.0
Incr Delay (d2), s/veh	9.4	0.3	0.3	0.1	13.8	15.3	0.7	1.6	1.5	0.1	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	4.8	5.0	1.6	14.0	14.0	4.6	1.9	2.0	1.7	7.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	31.4	31.4	32.8	59.0	60.6	17.1	5.2	5.1	18.4	20.6	20.7
LnGrp LOS	D	C	C	C	E	E	B	A	A	B	C	C
Approach Vol, veh/h		480			632			702			608	
Approach Delay, s/veh		35.9			58.1			8.2			20.4	
Approach LOS		D			E			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	58.3	10.5	41.5	14.0	54.0	20.9	31.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	30.5	9.5	44.5	9.5	38.5	24.5	29.5
Max Q Clear Time (g_c+I1), s	4.7	5.2	4.4	9.1	10.3	15.5	15.8	25.1
Green Ext Time (p_c), s	0.1	4.0	0.0	1.9	0.0	4.2	0.6	1.5

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	175	95	5	287	17	238	152	27	13	44	45
Future Volume (veh/h)	27	175	95	5	287	17	238	152	27	13	44	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	0.94		0.99	0.96		0.90	0.98		0.95
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	34	222	120	6	363	22	301	192	34	16	56	46
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	117	529	440	73	542	32	460	245	41	130	358	261
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	103	1444	1202	7	1481	89	763	533	89	110	778	567
Grp Volume(v), veh/h	256	0	120	391	0	0	527	0	0	118	0	0
Grp Sat Flow(s),veh/h/ln	1546	0	1202	1576	0	0	1385	0	0	1455	0	0
Q Serve(g_s), s	0.0	0.0	3.6	0.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	3.6	10.7	0.0	0.0	17.0	0.0	0.0	2.5	0.0	0.0
Prop In Lane	0.13		1.00	0.02		0.06	0.57		0.06	0.14		0.39
Lane Grp Cap(c), veh/h	645	0	440	648	0	0	746	0	0	748	0	0
V/C Ratio(X)	0.40	0.00	0.27	0.60	0.00	0.00	0.71	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	979	0	711	1001	0	0	926	0	0	931	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	11.5	13.8	0.0	0.0	12.0	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.7	1.9	0.0	0.0	3.0	0.0	0.0	0.2	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(95%),veh/ln	3.8	0.0	1.7	6.6	0.0	0.0	8.5	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	0.0	12.2	15.7	0.0	0.0	15.1	0.0	0.0	8.4	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		376			391			527			118	
Approach Delay, s/veh		12.9			15.7			15.1			8.4	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	28.2	23.4	28.2	23.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	30.5	30.5	30.5
Max Q Clear Time (g_c+I1), s	19.0	8.2	4.5	12.7
Green Ext Time (p_c), s	4.7	4.0	1.3	4.2

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	190	48	30	185	24	47	58	53	20	34	26
Future Vol, veh/h	27	190	48	30	185	24	47	58	53	20	34	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	6	6	6
Mvmt Flow	32	224	56	35	218	28	55	68	62	24	40	31
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	12.4	11.9	10.4	10.8
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	45%	0%	100%	0%	100%	0%	25%
Vol Thru, %	55%	0%	0%	80%	0%	89%	43%
Vol Right, %	0%	100%	0%	20%	0%	11%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	53	27	238	30	209	80
LT Vol	47	0	27	0	30	0	20
Through Vol	58	0	0	190	0	185	34
RT Vol	0	53	0	48	0	24	26
Lane Flow Rate	124	62	32	280	35	246	94
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.224	0.097	0.055	0.438	0.062	0.393	0.169
Departure Headway (Hd)	6.537	5.601	6.284	5.635	6.335	5.747	6.446
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	548	638	570	638	566	627	556
Service Time	4.28	3.344	4.02	3.371	4.071	3.483	4.494
HCM Lane V/C Ratio	0.226	0.097	0.056	0.439	0.062	0.392	0.169
HCM Control Delay	11.2	8.9	9.4	12.7	9.5	12.2	10.8
HCM Lane LOS	B	A	A	B	A	B	B
HCM 95th-tile Q	0.9	0.3	0.2	2.2	0.2	1.9	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	226	20	91	491	121	128
Future Volume (veh/h)	226	20	91	491	121	128
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	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	1597	1597	1547	1547	1585	1585
Adj Flow Rate, veh/h	254	22	102	552	136	144
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	5	5	2	2
Cap, veh/h	274	24	726	1124	451	477
Arrive On Green	0.20	0.20	0.05	0.73	0.64	0.64
Sat Flow, veh/h	1380	120	1474	1547	703	745
Grp Volume(v), veh/h	277	0	102	552	0	280
Grp Sat Flow(s),veh/h/ln	1505	0	1474	1547	0	1448
Q Serve(g_s), s	21.7	0.0	2.6	18.2	0.0	10.3
Cycle Q Clear(g_c), s	21.7	0.0	2.6	18.2	0.0	10.3
Prop In Lane	0.92	0.08	1.00			0.51
Lane Grp Cap(c), veh/h	299	0	726	1124	0	928
V/C Ratio(X)	0.93	0.00	0.14	0.49	0.00	0.30
Avail Cap(c_a), veh/h	320	0	845	1124	0	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.85	0.85	0.00	0.42
Uniform Delay (d), s/veh	47.2	0.0	6.3	7.0	0.0	9.6
Incr Delay (d2), s/veh	30.7	0.0	0.1	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.1	0.0	1.4	9.6	0.0	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	77.9	0.0	6.4	8.3	0.0	10.0
LnGrp LOS	E	A	A	A	A	A
Approach Vol, veh/h	277			654	280	
Approach Delay, s/veh	77.9			8.0	10.0	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.7		28.3	10.3	81.4
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		85.5		25.5	15.5	65.5
Max Q Clear Time (g_c+I1), s		20.2		23.7	4.6	12.3
Green Ext Time (p_c), s		3.6		0.1	0.2	1.7

Intersection Summary						
HCM 6th Ctrl Delay			24.4			
HCM 6th LOS			C			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	351	2	0	417	113	9	7	2	101	2	325
Future Volume (veh/h)	351	351	2	0	417	113	9	7	2	101	2	325
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		0.93	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	1585	1585	1585	0	1597	1597	1610	1610	1610	1560	1560	1560
Adj Flow Rate, veh/h	373	373	2	0	444	120	10	7	2	107	2	346
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	1	1	0	0	0	4	4	4
Cap, veh/h	469	516	3	0	479	395	19	13	4	279	5	674
Arrive On Green	0.32	0.32	0.32	0.00	0.30	0.30	0.02	0.02	0.02	0.19	0.19	0.19
Sat Flow, veh/h	1470	1615	9	0	1597	1318	803	562	161	1460	27	1322
Grp Volume(v), veh/h	383	0	365	0	444	120	19	0	0	109	0	346
Grp Sat Flow(s),veh/h/ln	1511	0	1583	0	1597	1318	1526	0	0	1487	0	1322
Q Serve(g_s), s	27.8	0.0	24.4	0.0	32.3	8.4	1.5	0.0	0.0	7.7	0.0	20.8
Cycle Q Clear(g_c), s	27.8	0.0	24.4	0.0	32.3	8.4	1.5	0.0	0.0	7.7	0.0	20.8
Prop In Lane	0.97		0.01	0.00		1.00	0.53		0.11	0.98		1.00
Lane Grp Cap(c), veh/h	482	0	505	0	479	395	36	0	0	284	0	674
V/C Ratio(X)	0.79	0.00	0.72	0.00	0.93	0.30	0.53	0.00	0.00	0.38	0.00	0.51
Avail Cap(c_a), veh/h	482	0	505	0	519	428	76	0	0	285	0	675
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	0.00	0.93	0.93	1.00	0.00	0.00	0.82	0.00	0.82
Uniform Delay (d), s/veh	37.3	0.0	36.1	0.0	40.7	32.4	57.9	0.0	0.0	42.4	0.0	19.5
Incr Delay (d2), s/veh	10.1	0.0	6.2	0.0	25.2	1.8	16.3	0.0	0.0	1.9	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.2	0.0	15.6	0.0	22.4	5.3	1.3	0.0	0.0	5.4	0.0	15.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	0.0	42.3	0.0	65.9	34.2	74.2	0.0	0.0	44.3	0.0	20.9
LnGrp LOS	D	A	D	A	E	C	E	A	A	D	A	C
Approach Vol, veh/h		748			564			19			455	
Approach Delay, s/veh		44.9			59.2			74.2			26.5	
Approach LOS		D			E			E			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	7.8	43.3	27.9	41.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	32.0	23.0	39.0
Max Q Clear Time (g_c+I1), s	3.5	29.8	22.8	34.3
Green Ext Time (p_c), s	0.0	1.5	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	664	204	16	0	374	206	20	820	8	77	582	531
Future Volume (veh/h)	664	204	16	0	374	206	20	820	8	77	582	531
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		0.99
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	1585	1585	1585	0	1572	1572	1597	1597	1597	1560	1560	1560
Adj Flow Rate, veh/h	678	208	16	0	382	210	20	837	8	79	594	542
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	0	3	3	1	1	1	4	4	4
Cap, veh/h	671	733	56	0	429	232	252	808	8	189	710	616
Arrive On Green	0.08	0.17	0.17	0.00	0.23	0.23	0.04	0.09	0.09	0.09	0.24	0.24
Sat Flow, veh/h	2928	1452	112	0	1945	1011	1521	3080	29	1485	2964	1307
Grp Volume(v), veh/h	678	0	224	0	305	287	20	412	433	79	594	542
Grp Sat Flow(s),veh/h/ln	1464	0	1564	0	1494	1384	1521	1518	1592	1485	1482	1307
Q Serve(g_s), s	27.5	0.0	15.0	0.0	23.7	24.2	0.0	31.5	31.5	1.0	22.9	17.1
Cycle Q Clear(g_c), s	27.5	0.0	15.0	0.0	23.7	24.2	0.0	31.5	31.5	1.0	22.9	17.1
Prop In Lane	1.00		0.07	0.00		0.73	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	671	0	789	0	343	318	252	398	418	189	710	616
V/C Ratio(X)	1.01	0.00	0.28	0.00	0.89	0.90	0.08	1.04	1.04	0.42	0.84	0.88
Avail Cap(c_a), veh/h	671	0	827	0	367	340	252	398	418	189	778	646
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.67	0.67	0.82	0.82	0.82	0.60	0.60	0.60
Uniform Delay (d), s/veh	55.5	0.0	31.0	0.0	44.7	44.9	48.0	54.8	54.8	50.1	43.4	28.7
Incr Delay (d2), s/veh	37.3	0.0	0.2	0.0	15.6	18.9	0.1	50.2	49.3	1.1	7.1	10.7
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(95%),veh/ln	20.6	0.0	10.5	0.0	14.5	14.2	1.0	25.3	26.3	4.0	12.9	29.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.8	0.0	31.2	0.0	60.3	63.8	48.2	105.0	104.1	51.2	50.5	39.4
LnGrp LOS	F	A	C	A	E	E	D	F	F	D	D	D
Approach Vol, veh/h		902			592			865			1215	
Approach Delay, s/veh		77.5			62.0			103.2			45.6	
Approach LOS		E			E			F			D	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	37.0		67.1	18.7	34.3	34.0	33.1				
Change Period (Y+Rc), s	5.5	5.5		* 6.5	5.5	5.5	6.5	5.5				
Max Green Setting (Gmax), s	8.5	31.5		* 64	8.5	31.5	27.5	29.5				
Max Q Clear Time (g_c+I1), s	3.0	33.5		17.0	2.0	24.9	29.5	26.2				
Green Ext Time (p_c), s	0.1	0.0		1.4	0.0	3.8	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			70.3									
HCM 6th LOS			E									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	9	25	5	9	10	0	1676	3	0	1120	212
Future Volume (veh/h)	196	9	25	5	9	10	0	1676	3	0	1120	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.98	1.00		0.99	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	1585	1585	1585	1610	1610	1610	0	1597	1597	0	1560	1560
Adj Flow Rate, veh/h	204	9	26	5	9	10	0	1746	3	0	1167	221
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	0	0	0	1	1	0	4	4
Cap, veh/h	286	10	29	80	130	124	0	2267	4	0	1813	341
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.00	1.00	1.00	0.00	1.00	1.00
Sat Flow, veh/h	1175	52	150	223	662	632	0	3189	5	0	2563	468
Grp Volume(v), veh/h	239	0	0	24	0	0	0	852	897	0	693	695
Grp Sat Flow(s),veh/h/ln	1376	0	0	1517	0	0	0	1518	1596	0	1482	1471
Q Serve(g_s), s	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.3	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.85		0.11	0.21		0.42	0.00		0.00	0.00		0.32
Lane Grp Cap(c), veh/h	325	0	0	333	0	0	0	1107	1164	0	1081	1073
V/C Ratio(X)	0.74	0.00	0.00	0.07	0.00	0.00	0.00	0.77	0.77	0.00	0.64	0.65
Avail Cap(c_a), veh/h	439	0	0	453	0	0	0	1107	1164	0	1081	1073
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.12	0.12	0.00	0.70	0.70
Uniform Delay (d), s/veh	46.9	0.0	0.0	39.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	4.8	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.6	0.0	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.9	0.0	0.0	1.1	0.0	0.0	0.0	0.4	0.4	0.0	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	0.0	0.0	39.6	0.0	0.0	0.0	0.6	0.6	0.0	2.1	2.1
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		239			24			1749			1388	
Approach Delay, s/veh		51.7			39.6			0.6			2.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		92.0		28.0		92.0		28.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		77.5		33.5		77.5		33.5
Max Q Clear Time (g_c+I1), s		2.0		22.3		2.0		3.6
Green Ext Time (p_c), s		39.8		1.2		46.7		0.1

Intersection Summary			
HCM 6th Ctrl Delay			5.1
HCM 6th LOS			A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	45	76	1823	1296	78
Future Volume (veh/h)	86	45	76	1823	1296	78
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	1547	1547	1585	1585	1547	1547
Adj Flow Rate, veh/h	68	69	78	1879	1336	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	2	2	5	5
Cap, veh/h	105	93	94	2571	2216	
Arrive On Green	0.07	0.07	0.12	1.00	0.75	0.00
Sat Flow, veh/h	1474	1311	1509	3091	3017	1311
Grp Volume(v), veh/h	68	69	78	1879	1336	0
Grp Sat Flow(s),veh/h/ln	1474	1311	1509	1506	1470	1311
Q Serve(g_s), s	5.4	6.2	6.1	0.0	24.6	0.0
Cycle Q Clear(g_c), s	5.4	6.2	6.1	0.0	24.6	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	105	93	94	2571	2216	
V/C Ratio(X)	0.65	0.74	0.83	0.73	0.60	
Avail Cap(c_a), veh/h	325	290	132	2571	2216	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.36	0.36	1.00	0.00
Uniform Delay (d), s/veh	54.3	54.6	51.9	0.0	6.7	0.0
Incr Delay (d2), s/veh	7.8	12.8	11.4	0.7	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	4.3	4.0	0.4	11.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.1	67.4	63.3	0.7	7.9	0.0
LnGrp LOS	E	E	E	A	A	
Approach Vol, veh/h	137			1957	1336	
Approach Delay, s/veh	64.8			3.2	7.9	
Approach LOS	E			A	A	

Timer - Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.0	12.0	95.0				107.0
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		26.5	10.5	69.5				84.5
Max Q Clear Time (g_c+I1), s		8.2	8.1	26.6				2.0
Green Ext Time (p_c), s		0.4	0.0	20.3				48.4

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] 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)	54	46	147	141	51	84	166	1501	155	123	992	39
Future Volume (veh/h)	54	46	147	141	51	84	166	1501	155	123	992	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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	1585	1585	1585	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	56	47	9	145	53	5	171	1547	108	127	1023	38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	145	103	86	156	104	87	617	1582	705	338	1146	43
Arrive On Green	0.04	0.06	0.06	0.04	0.06	0.06	0.36	0.53	0.53	0.23	0.39	0.39
Sat Flow, veh/h	1509	1585	1324	1521	1597	1335	1509	3011	1342	1497	2937	109
Grp Volume(v), veh/h	56	47	9	145	53	5	171	1547	108	127	520	541
Grp Sat Flow(s),veh/h/ln	1509	1585	1324	1521	1597	1335	1509	1506	1342	1497	1494	1552
Q Serve(g_s), s	5.5	4.6	0.6	6.5	5.1	0.4	4.4	80.2	5.1	11.5	52.2	52.2
Cycle Q Clear(g_c), s	5.5	4.6	0.6	6.5	5.1	0.4	4.4	80.2	5.1	11.5	52.2	52.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	145	103	86	156	104	87	617	1582	705	338	583	605
V/C Ratio(X)	0.39	0.46	0.10	0.93	0.51	0.06	0.28	0.98	0.15	0.38	0.89	0.89
Avail Cap(c_a), veh/h	145	308	257	156	311	259	617	1588	708	338	779	809
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	0.71	0.71	0.71
Uniform Delay (d), s/veh	67.0	72.1	20.3	73.2	72.4	32.7	32.5	37.1	11.4	52.5	45.7	45.7
Incr Delay (d2), s/veh	1.7	3.2	0.5	52.4	3.9	0.3	0.3	17.9	0.5	0.6	14.1	13.7
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(95%),veh/ln	4.0	3.6	0.7	9.4	4.0	0.4	8.1	42.3	4.0	7.3	28.1	28.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	75.3	20.9	125.7	76.2	33.0	32.8	55.0	11.9	53.0	59.8	59.4
LnGrp LOS	E	E	C	F	E	C	C	D	B	D	E	E
Approach Vol, veh/h		112			203			1826			1188	
Approach Delay, s/veh		67.6			110.5			50.3			58.9	
Approach LOS		E			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.1	90.1	12.0	15.9	63.7	68.4	12.0	15.9
Change Period (Y+Rc), s	6.0	* 6	5.5	5.5	6.0	6.0	6.0	5.5
Max Green Setting (Gmax), s	16.0	* 84	6.5	31.1	16.0	83.4	6.0	31.1
Max Q Clear Time (g_c+I1), s	13.5	82.2	8.5	6.6	6.4	54.2	7.5	7.1
Green Ext Time (p_c), s	0.1	1.9	0.0	0.2	0.4	8.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	57.6
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	108	116	107	83	152	99	1309	127	159	1032	73
Future Volume (veh/h)	111	108	116	107	83	152	99	1309	127	159	1032	73
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		1.00	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	1585	1585	1585	1572	1572	1572	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	114	111	120	110	86	157	102	1349	131	164	1064	75
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	113	227	187	103	216	176	301	1830	812	345	1778	125
Arrive On Green	0.08	0.14	0.14	0.07	0.14	0.14	0.08	1.00	1.00	0.05	0.62	0.62
Sat Flow, veh/h	1509	1585	1301	1497	1572	1283	1509	3011	1336	1509	2850	201
Grp Volume(v), veh/h	114	111	120	110	86	157	102	1349	131	164	562	577
Grp Sat Flow(s),veh/h/ln	1509	1585	1301	1497	1572	1283	1509	1506	1336	1509	1506	1545
Q Serve(g_s), s	12.0	10.3	13.9	11.0	8.0	19.2	4.2	0.0	0.0	6.6	35.8	35.9
Cycle Q Clear(g_c), s	12.0	10.3	13.9	11.0	8.0	19.2	4.2	0.0	0.0	6.6	35.8	35.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	113	227	187	103	216	176	301	1830	812	345	939	964
V/C Ratio(X)	1.01	0.49	0.64	1.07	0.40	0.89	0.34	0.74	0.16	0.48	0.60	0.60
Avail Cap(c_a), veh/h	113	317	260	103	305	249	337	1830	812	403	939	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.53	0.53	0.53	0.79	0.79	0.79
Uniform Delay (d), s/veh	74.0	63.1	64.7	74.5	63.0	67.9	14.4	0.0	0.0	10.2	18.1	18.1
Incr Delay (d2), s/veh	86.5	1.6	3.7	108.4	1.2	23.9	0.4	1.4	0.2	0.8	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.9	7.7	8.5	12.1	6.0	12.1	2.5	0.7	0.1	4.1	18.2	18.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	160.5	64.7	68.3	182.9	64.2	91.8	14.8	1.4	0.2	11.0	20.3	20.2
LnGrp LOS	F	E	E	F	E	F	B	A	A	B	C	C
Approach Vol, veh/h		345			353			1582			1303	
Approach Delay, s/veh		97.6			113.4			2.2			19.1	
Approach LOS		F			F			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	102.3	16.0	28.0	11.2	104.8	17.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	82.0	11.0	32.0	10.0	87.0	12.0	31.0
Max Q Clear Time (g_c+I1), s	8.6	2.0	13.0	15.9	6.2	37.9	14.0	21.2
Green Ext Time (p_c), s	0.2	17.3	0.0	0.9	0.1	10.2	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	55	0	41	1	1490	41	54	1335	0
Future Volume (veh/h)	0	0	2	55	0	41	1	1490	41	54	1335	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	0.89		0.96	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	1610	1610	1610	1572	1572	1572	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	0	0	2	57	0	42	1	1536	42	56	1376	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	3	3	1	1	1	1	1	1
Cap, veh/h	0	0	93	138	0	97	363	2402	66	288	2515	0
Arrive On Green	0.00	0.00	0.08	0.08	0.00	0.08	0.00	0.80	0.80	0.05	1.00	0.00
Sat Flow, veh/h	0	0	1219	1256	0	1275	1521	3018	82	1521	3115	0
Grp Volume(v), veh/h	0	0	2	57	0	42	1	771	807	56	1376	0
Grp Sat Flow(s),veh/h/ln	0	0	1219	1256	0	1275	1521	1518	1582	1521	1518	0
Q Serve(g_s), s	0.0	0.0	0.2	7.0	0.0	5.0	0.0	33.7	34.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	7.3	0.0	5.0	0.0	33.7	34.0	1.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	93	138	0	97	363	1208	1259	288	2515	0
V/C Ratio(X)	0.00	0.00	0.02	0.41	0.00	0.43	0.00	0.64	0.64	0.19	0.55	0.00
Avail Cap(c_a), veh/h	0	0	190	239	0	199	437	1208	1259	321	2515	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.71	0.71	0.71	0.66	0.66	0.00
Uniform Delay (d), s/veh	0.0	0.0	68.4	71.8	0.0	70.6	3.3	6.8	6.8	6.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	2.8	0.0	4.3	0.0	1.8	1.8	0.3	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(95%),veh/ln	0.0	0.0	0.1	4.3	0.0	3.2	0.0	14.8	15.4	0.9	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	68.6	74.6	0.0	75.0	3.3	8.6	8.6	7.1	0.6	0.0
LnGrp LOS	A	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		2			99			1579			1432	
Approach Delay, s/veh		68.6			74.7			8.6			0.8	
Approach LOS		E			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	132.3		17.2	5.3	137.6		17.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	111.0		25.0	8.0	112.0		25.0				
Max Q Clear Time (g_c+I1), s	3.0	36.0		2.2	2.0	2.0		9.3				
Green Ext Time (p_c), s	0.1	32.2		0.0	0.0	27.8		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		7.2
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	92	139	125	106	141	132	1274	40	134	1079	133
Future Volume (veh/h)	114	92	139	125	106	141	132	1274	40	134	1079	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.99	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	1597	1597	1597	1585	1585	1585	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	119	96	145	130	110	147	138	1327	42	140	1124	139
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	136	170	143	139	181	153	514	1899	60	157	1246	554
Arrive On Green	0.05	0.11	0.11	0.06	0.11	0.11	0.30	0.64	0.64	0.07	0.41	0.41
Sat Flow, veh/h	1521	1597	1342	1509	1585	1336	1509	2979	94	1521	3035	1349
Grp Volume(v), veh/h	119	96	145	130	110	147	138	670	699	140	1124	139
Grp Sat Flow(s),veh/h/ln	1521	1597	1342	1509	1585	1336	1509	1506	1567	1521	1518	1349
Q Serve(g_s), s	6.7	9.1	10.2	10.0	10.6	14.9	3.5	46.5	46.7	9.9	55.5	10.8
Cycle Q Clear(g_c), s	6.7	9.1	10.2	10.0	10.6	14.9	3.5	46.5	46.7	9.9	55.5	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	136	170	143	139	181	153	514	960	999	157	1246	554
V/C Ratio(X)	0.87	0.57	1.02	0.93	0.61	0.96	0.27	0.70	0.70	0.89	0.90	0.25
Avail Cap(c_a), veh/h	149	339	285	139	337	284	514	960	999	157	1574	700
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)	0.83	0.83	0.83	1.00	1.00	1.00	0.69	0.69	0.69	0.79	0.79	0.79
Uniform Delay (d), s/veh	73.2	68.0	25.7	72.5	67.4	51.2	39.4	18.9	19.0	40.9	44.1	31.0
Incr Delay (d2), s/veh	32.0	1.8	33.1	55.9	2.4	23.9	0.2	2.9	2.8	35.2	8.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	6.8	8.0	6.1	7.9	10.2	6.8	22.3	23.2	8.6	29.2	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	105.2	69.8	58.8	128.5	69.9	75.0	39.6	21.9	21.8	76.0	52.9	31.8
LnGrp LOS	F	E	F	F	E	E	D	C	C	E	D	C
Approach Vol, veh/h		360			387			1507			1403	
Approach Delay, s/veh		77.1			91.5			23.5			53.1	
Approach LOS		E			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	52.3	70.7	13.7	23.3	16.0	107.0	15.0	22.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	13.0	83.0	10.0	34.0	11.0	85.0	10.0	34.0
Max Q Clear Time (g_c+I1), s	15.5	57.5	8.7	16.9	11.9	48.7	12.0	12.2
Green Ext Time (p_c), s	0.2	8.2	0.0	0.8	0.0	10.2	0.0	0.8

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	662	82	136	758	47	53	112	108	33	60	21
Future Volume (veh/h)	37	662	82	136	758	47	53	112	108	33	60	21
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		0.97	1.00		0.96	0.97		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	39	690	85	142	790	49	55	117	112	34	62	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	97	1576	192	482	2096	130	67	313	256	188	126	45
Arrive On Green	0.64	0.64	0.64	0.10	1.00	1.00	0.04	0.20	0.20	0.11	0.11	0.11
Sat Flow, veh/h	100	2454	299	1509	2874	178	1521	1597	1306	1119	1104	392
Grp Volume(v), veh/h	416	0	398	142	414	425	55	117	112	34	0	84
Grp Sat Flow(s),veh/h/ln	1456	0	1397	1509	1506	1547	1521	1597	1306	1119	0	1495
Q Serve(g_s), s	0.0	0.0	17.1	3.8	0.0	0.0	4.3	7.6	9.1	3.3	0.0	6.3
Cycle Q Clear(g_c), s	15.1	0.0	17.1	3.8	0.0	0.0	4.3	7.6	9.1	3.3	0.0	6.3
Prop In Lane	0.09		0.21	1.00		0.12	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	967	0	897	482	1098	1128	67	313	256	188	0	171
V/C Ratio(X)	0.43	0.00	0.44	0.29	0.38	0.38	0.82	0.37	0.44	0.18	0.00	0.49
Avail Cap(c_a), veh/h	967	0	897	540	1098	1128	133	552	452	307	0	330
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	0.85	0.85	0.85	0.82	0.82	0.82	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	0.0	10.7	7.2	0.0	0.0	56.9	41.9	42.4	48.6	0.0	49.9
Incr Delay (d2), s/veh	1.4	0.0	1.6	0.3	0.8	0.8	17.3	0.6	1.0	0.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.3	0.0	9.2	1.9	0.5	0.5	3.6	5.6	5.4	1.7	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	12.3	7.4	0.8	0.8	74.2	42.5	43.4	49.0	0.0	52.1
LnGrp LOS	B	A	B	A	A	A	E	D	D	D	A	D
Approach Vol, veh/h		814			981			284			118	
Approach Delay, s/veh		12.1			1.8			49.0			51.2	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	2	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	92.0	9.8	18.2	10.4	81.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	41.5	69.5	10.5	26.5	10.5	54.5
Max Q Clear Time (g_c+I1), s	11.1	2.0	6.3	8.3	5.8	19.1
Green Ext Time (p_c), s	1.1	6.5	0.0	0.5	0.1	6.4

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	729	19	21	897	18	46	76	87	12	41	22
Future Volume (veh/h)	25	729	19	21	897	18	46	76	87	12	41	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	0.99		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	27	792	21	23	975	20	50	83	95	13	45	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	45	2092	55	40	2081	43	62	269	223	47	82	39
Arrive On Green	0.03	0.69	0.69	0.05	1.00	1.00	0.04	0.17	0.17	0.09	0.09	0.09
Sat Flow, veh/h	1521	3020	80	1509	3017	62	1521	1597	1324	133	905	430
Grp Volume(v), veh/h	27	398	415	23	486	509	50	83	95	82	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1583	1509	1506	1574	1521	1597	1324	1468	0	0
Q Serve(g_s), s	2.1	13.1	13.1	1.8	0.0	0.0	3.9	5.5	7.7	1.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	13.1	13.1	1.8	0.0	0.0	3.9	5.5	7.7	6.4	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.04	1.00		1.00	0.16		0.29
Lane Grp Cap(c), veh/h	45	1051	1096	40	1038	1085	62	269	223	167	0	0
V/C Ratio(X)	0.60	0.38	0.38	0.57	0.47	0.47	0.81	0.31	0.43	0.49	0.00	0.00
Avail Cap(c_a), veh/h	133	1051	1096	119	1038	1085	133	579	480	379	0	0
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)	0.85	0.85	0.85	0.86	0.86	0.86	0.93	0.93	0.93	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.5	7.7	7.7	56.1	0.0	0.0	57.1	43.8	44.7	52.5	0.0	0.0
Incr Delay (d2), s/veh	10.3	0.9	0.8	10.4	1.3	1.3	20.2	0.6	1.2	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(95%),veh/ln	1.7	7.3	7.6	1.4	0.7	0.7	3.4	4.0	4.7	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	8.6	8.5	66.5	1.3	1.3	77.4	44.4	45.9	54.8	0.0	0.0
LnGrp LOS	E	A	A	E	A	A	E	D	D	D	A	A
Approach Vol, veh/h		840			1018			228			82	
Approach Delay, s/veh		10.5			2.8			52.3			54.8	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	87.6	9.4	15.3	8.1	87.3		24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	9.5	53.5	10.5	28.5	10.5	52.5		43.5
Max Q Clear Time (g_c+I1), s	3.8	15.1	5.9	8.4	4.1	2.0		9.7
Green Ext Time (p_c), s	0.0	6.0	0.0	0.4	0.0	8.2		0.8

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	780	10	19	966	15	12	12	14	29	7	56
Future Volume (veh/h)	30	780	10	19	966	15	12	12	14	29	7	56
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		0.97	1.00		0.94	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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	33	848	11	21	1050	16	13	13	15	32	8	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	455	2008	26	513	1961	30	27	69	79	49	18	139
Arrive On Green	0.07	1.00	1.00	0.05	1.00	1.00	0.02	0.10	0.10	0.03	0.12	0.12
Sat Flow, veh/h	1521	3068	40	1509	3034	46	1533	658	760	1509	153	1168
Grp Volume(v), veh/h	33	419	440	21	521	545	13	0	28	32	0	69
Grp Sat Flow(s),veh/h/ln	1521	1518	1590	1509	1506	1575	1533	0	1418	1509	0	1321
Q Serve(g_s), s	0.8	0.0	0.0	0.5	0.0	0.0	1.0	0.0	2.2	2.5	0.0	5.8
Cycle Q Clear(g_c), s	0.8	0.0	0.0	0.5	0.0	0.0	1.0	0.0	2.2	2.5	0.0	5.8
Prop In Lane	1.00		0.03	1.00		0.03	1.00		0.54	1.00		0.88
Lane Grp Cap(c), veh/h	455	993	1041	513	973	1018	27	0	148	49	0	158
V/C Ratio(X)	0.07	0.42	0.42	0.04	0.54	0.54	0.48	0.00	0.19	0.65	0.00	0.44
Avail Cap(c_a), veh/h	512	993	1041	582	973	1018	96	0	325	94	0	303
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	6.4	0.0	0.0	58.4	0.0	49.1	57.3	0.0	49.1
Incr Delay (d2), s/veh	0.1	1.2	1.2	0.0	2.1	2.0	12.7	0.0	0.6	13.3	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.6	0.6	0.3	1.0	1.0	0.9	0.0	1.4	2.1	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	1.2	1.2	6.4	2.1	2.0	71.1	0.0	49.7	70.6	0.0	51.0
LnGrp LOS	A	A	A	A	A	A	E	A	D	E	A	D
Approach Vol, veh/h		892			1087			41			101	
Approach Delay, s/veh		1.4			2.1			56.5			57.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	18.0	8.5	84.0	7.6	19.8	9.5	83.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	7.5	27.5	8.5	54.5	7.5	27.5	8.5	54.5
Max Q Clear Time (g_c+I1), s	4.5	4.2	2.5	2.0	3.0	7.8	2.8	2.0
Green Ext Time (p_c), s	0.0	0.1	0.0	6.6	0.0	0.3	0.0	9.2

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑↱			↰↑	↱		↰↑	↱
Traffic Volume (veh/h)	19	220	55	6	396	23	149	84	29	8	26	34
Future Volume (veh/h)	19	220	55	6	396	23	149	84	29	8	26	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.95	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	1572	1572	1572	1560	1560	1560	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	21	244	61	7	440	26	166	93	32	9	29	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	2	2	2
Cap, veh/h	45	625	507	16	551	33	245	111	464	77	167	465
Arrive On Green	0.03	0.40	0.40	0.01	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1497	1572	1275	1485	1455	86	398	311	1302	0	467	1303
Grp Volume(v), veh/h	21	244	61	7	0	466	259	0	32	38	0	38
Grp Sat Flow(s),veh/h/ln	1497	1572	1275	1485	0	1541	709	0	1302	467	0	1303
Q Serve(g_s), s	0.8	6.4	1.7	0.3	0.0	15.5	0.0	0.0	0.9	0.0	0.0	1.1
Cycle Q Clear(g_c), s	0.8	6.4	1.7	0.3	0.0	15.5	20.5	0.0	0.9	20.5	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.06	0.64		1.00	0.24		1.00
Lane Grp Cap(c), veh/h	45	625	507	16	0	584	356	0	464	244	0	465
V/C Ratio(X)	0.47	0.39	0.12	0.43	0.00	0.80	0.73	0.00	0.07	0.16	0.00	0.08
Avail Cap(c_a), veh/h	534	1792	1453	530	0	1757	356	0	464	244	0	465
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	12.4	11.0	28.2	0.0	15.9	18.0	0.0	12.2	14.0	0.0	12.2
Incr Delay (d2), s/veh	7.6	0.4	0.1	16.6	0.0	2.6	7.3	0.0	0.1	0.3	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(95%),veh/ln	0.7	3.6	0.8	0.3	0.0	8.8	6.8	0.0	0.4	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	12.8	11.1	44.8	0.0	18.5	25.4	0.0	12.3	14.3	0.0	12.3
LnGrp LOS	C	B	B	D	A	B	C	A	B	B	A	B
Approach Vol, veh/h		326			473			291			76	
Approach Delay, s/veh		13.9			18.9			23.9			13.3	
Approach LOS		B			B			C			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	5.1	27.3		25.0	6.2	26.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	20.5	65.5		20.5	20.5	65.5				
Max Q Clear Time (g_c+I1), s		22.5	2.3	8.4		22.5	2.8	17.5				
Green Ext Time (p_c), s		0.0	0.0	1.8		0.0	0.0	3.4				

Intersection Summary			
HCM 6th Ctrl Delay			18.4
HCM 6th LOS			B

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	226	168	164	551	177	26	
Future Volume (veh/h)	226	168	164	551	177	26	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	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	1572	1572	1560	1560	1585	1585	
Adj Flow Rate, veh/h	240	0	174	586	188	28	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	3	3	4	4	2	2	
Cap, veh/h	259		179	603	209	1209	
Arrive On Green	0.17	0.00	0.59	0.59	0.14	0.76	
Sat Flow, veh/h	1497	1332	303	1019	1509	1585	
Grp Volume(v), veh/h	240	0	0	760	188	28	
Grp Sat Flow(s),veh/h/ln	1497	1332	0	1321	1509	1585	
Q Serve(g_s), s	22.1	0.0	0.0	77.3	17.2	0.6	
Cycle Q Clear(g_c), s	22.1	0.0	0.0	77.3	17.2	0.6	
Prop In Lane	1.00	1.00		0.77	1.00		
Lane Grp Cap(c), veh/h	259		0	782	209	1209	
V/C Ratio(X)	0.93		0.00	0.97	0.90	0.02	
Avail Cap(c_a), veh/h	273		0	782	275	1209	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.00	0.74	1.00	1.00	
Uniform Delay (d), s/veh	57.0	0.0	0.0	27.4	59.3	4.0	
Incr Delay (d2), s/veh	34.8	0.0	0.0	21.6	24.8	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	16.4	0.0	0.0	35.9	12.7	0.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	91.8	0.0	0.0	49.0	84.2	4.0	
LnGrp LOS	F		A	D	F	A	
Approach Vol, veh/h	240		760			216	
Approach Delay, s/veh	91.8		49.0			73.8	
Approach LOS	F		D			E	
Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	23.9	87.4				111.3	28.7
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	25.5	75.5				105.5	25.5
Max Q Clear Time (g_c+I1), s	19.2	79.3				2.6	24.1
Green Ext Time (p_c), s	0.3	0.0				0.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	61.9
HCM 6th LOS	E

Notes

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

HCM 6th Signalized Intersection Summary
35: N Callow Ave & Burwell St (SR 304)

04/29/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	21	9	1023	4	47	2	220	709	24	251	5
Future Volume (veh/h)	4	21	9	1023	4	47	2	220	709	24	251	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.95	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	1610	1610	1610	1597	1597	1597	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	4	21	9	1092	0	0	2	224	723	24	256	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	45	236	101	1105	580	0	39	386	1409	69	601	12
Arrive On Green	0.25	0.25	0.25	0.36	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	179	942	404	3043	1597	0	3	1581	2257	102	2462	49
Grp Volume(v), veh/h	34	0	0	1092	0	0	226	0	723	140	0	145
Grp Sat Flow(s),veh/h/ln	1525	0	0	1521	1597	0	1584	0	1129	1183	0	1431
Q Serve(g_s), s	1.6	0.0	0.0	33.9	0.0	0.0	0.0	0.0	17.6	0.4	0.0	8.1
Cycle Q Clear(g_c), s	1.6	0.0	0.0	33.9	0.0	0.0	11.9	0.0	17.6	12.4	0.0	8.1
Prop In Lane	0.12		0.26	1.00		0.00	0.01		1.00	0.17		0.03
Lane Grp Cap(c), veh/h	383	0	0	1105	580	0	425	0	1409	333	0	349
V/C Ratio(X)	0.09	0.00	0.00	0.99	0.00	0.00	0.53	0.00	0.51	0.42	0.00	0.42
Avail Cap(c_a), veh/h	383	0	0	1105	580	0	480	0	1488	376	0	399
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	0.00	0.88	0.00	0.00	1.00	0.00	1.00	0.85	0.00	0.85
Uniform Delay (d), s/veh	27.3	0.0	0.0	30.0	0.0	0.0	31.7	0.0	10.8	29.9	0.0	30.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	22.7	0.0	0.0	1.5	0.0	0.4	1.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	0.0	21.6	0.0	0.0	8.2	0.0	13.4	5.0	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	0.0	52.8	0.0	0.0	33.1	0.0	11.2	30.9	0.0	31.2
LnGrp LOS	C	A	A	D	A	A	C	A	B	C	A	C
Approach Vol, veh/h		34			1092			949			285	
Approach Delay, s/veh		27.4			52.8			16.4			31.0	
Approach LOS		C			D			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.7		28.3		27.7		39.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		26.5		20.5		26.5		34.5				
Max Q Clear Time (g_c+I1), s		19.6		3.6		14.4		35.9				
Green Ext Time (p_c), s		3.6		0.1		1.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	724	6	3	1012	11	6	11	2	12	6	52
Future Volume (veh/h)	24	724	6	3	1012	11	6	11	2	12	6	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.98	0.98		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	1585	1585	1585	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	26	778	6	3	1088	12	6	12	2	13	6	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	0	0	0
Cap, veh/h	88	2293	17	41	2440	27	75	101	14	59	19	92
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	56	2828	22	1	3009	33	253	1135	154	141	208	1029
Grp Volume(v), veh/h	410	0	400	578	0	525	20	0	0	75	0	0
Grp Sat Flow(s),veh/h/ln	1467	0	1438	1596	0	1448	1542	0	0	1378	0	0
Q Serve(g_s), s	0.0	0.0	6.6	0.0	0.0	9.7	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	6.6	9.7	0.0	9.7	1.1	0.0	0.0	4.7	0.0	0.0
Prop In Lane	0.06		0.01	0.01		0.02	0.30		0.10	0.17		0.75
Lane Grp Cap(c), veh/h	1232	0	1166	1334	0	1174	189	0	0	170	0	0
V/C Ratio(X)	0.33	0.00	0.34	0.43	0.00	0.45	0.11	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1232	0	1166	1334	0	1174	711	0	0	647	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)	0.93	0.00	0.93	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	2.2	2.5	0.0	2.5	37.8	0.0	0.0	39.5	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.7	1.0	0.0	1.2	0.3	0.0	0.0	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(95%),veh/ln	2.5	0.0	2.5	4.1	0.0	3.8	0.8	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.8	0.0	3.0	3.6	0.0	3.8	38.1	0.0	0.0	41.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		810			1103			20			75	
Approach Delay, s/veh		2.9			3.6			38.1			41.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.5		77.5		12.5		77.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		39.5		41.5		39.5		41.5
Max Q Clear Time (g_c+I1), s		3.1		8.6		6.7		11.7
Green Ext Time (p_c), s		0.1		12.3		0.5		16.5

Intersection Summary	
HCM 6th Ctrl Delay	5.1
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	568	6	25	730	23	171	365	104	38	54	146
Future Volume (veh/h)	125	568	6	25	730	23	171	365	104	38	54	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	137	624	7	27	802	25	188	401	114	42	59	160
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	170	1330	15	50	1062	33	228	668	187	67	274	241
Arrive On Green	0.11	0.43	0.43	0.03	0.35	0.35	0.15	0.29	0.29	0.04	0.18	0.18
Sat Flow, veh/h	1521	3074	34	1521	3004	94	1533	2339	656	1521	1518	1334
Grp Volume(v), veh/h	137	308	323	27	405	422	188	260	255	42	59	160
Grp Sat Flow(s),veh/h/ln	1521	1518	1591	1521	1518	1580	1533	1530	1465	1521	1518	1334
Q Serve(g_s), s	7.7	12.7	12.7	1.5	20.7	20.7	10.4	12.9	13.2	2.4	2.9	9.8
Cycle Q Clear(g_c), s	7.7	12.7	12.7	1.5	20.7	20.7	10.4	12.9	13.2	2.4	2.9	9.8
Prop In Lane	1.00		0.02	1.00		0.06	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	170	656	688	50	536	559	228	437	419	67	274	241
V/C Ratio(X)	0.80	0.47	0.47	0.54	0.76	0.76	0.82	0.60	0.61	0.63	0.21	0.66
Avail Cap(c_a), veh/h	615	1305	1368	789	1305	1359	795	793	759	442	787	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	17.7	17.7	41.8	25.0	25.0	36.3	27.0	27.1	41.3	30.6	33.5
Incr Delay (d2), s/veh	10.1	0.6	0.6	10.4	2.6	2.5	8.7	1.6	1.7	11.2	0.5	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	7.9	8.2	1.3	12.2	12.5	7.9	8.4	8.3	2.0	2.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.2	18.4	18.3	52.2	27.7	27.6	45.0	28.6	28.8	52.5	31.1	37.2
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		768			854			703			261	
Approach Delay, s/veh		23.7			28.4			33.1			38.3	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	29.6	7.4	42.5	17.6	20.4	14.3	35.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	45.5	45.5	75.5	45.5	45.5	35.5	75.5
Max Q Clear Time (g_c+I1), s	4.4	15.2	3.5	14.7	12.4	11.8	9.7	22.7
Green Ext Time (p_c), s	0.1	4.4	0.1	5.8	0.7	1.8	0.5	8.3

Intersection Summary		
HCM 6th Ctrl Delay		29.3
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	731	16	8	688	4	35	16	15	0	20	6
Future Volume (veh/h)	4	731	16	8	688	4	35	16	15	0	20	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.55		0.68	1.00		0.49
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	1585	1585	1585	1572	1572	1572	1585	1585	1585	1560	1560	1560
Adj Flow Rate, veh/h	4	778	17	9	732	4	37	17	16	0	21	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	4	4	4
Cap, veh/h	25	2429	53	28	1275	7	82	34	24	0	112	32
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.12	0.12	0.12	0.00	0.12	0.12
Sat Flow, veh/h	4	2942	64	8	1545	8	402	278	202	0	927	265
Grp Volume(v), veh/h	419	0	380	745	0	0	70	0	0	0	0	27
Grp Sat Flow(s),veh/h/ln	1580	0	1430	1561	0	0	882	0	0	0	0	1192
Q Serve(g_s), s	0.0	0.0	10.5	0.0	0.0	0.0	9.5	0.0	0.0	0.0	0.0	3.4
Cycle Q Clear(g_c), s	10.4	0.0	10.5	26.2	0.0	0.0	12.9	0.0	0.0	0.0	0.0	3.4
Prop In Lane	0.01		0.04	0.01		0.01	0.53		0.23	0.00		0.22
Lane Grp Cap(c), veh/h	1326	0	1181	1310	0	0	139	0	0	0	0	144
V/C Ratio(X)	0.32	0.00	0.32	0.57	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.19
Avail Cap(c_a), veh/h	1326	0	1181	1310	0	0	203	0	0	0	0	226
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)	0.91	0.00	0.91	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	3.4	0.0	3.4	4.8	0.0	0.0	70.0	0.0	0.0	0.0	0.0	65.7
Incr Delay (d2), s/veh	0.6	0.0	0.7	1.8	0.0	0.0	1.0	0.0	0.0	0.0	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(95%),veh/ln	5.9	0.0	5.4	13.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.0	0.0	4.1	6.6	0.0	0.0	71.0	0.0	0.0	0.0	0.0	65.9
LnGrp LOS	A	A	A	A	A	A	E	A	A	A	A	E
Approach Vol, veh/h		799			745			70			27	
Approach Delay, s/veh		4.1			6.6			71.0			65.9	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		141.5		24.5		141.5		24.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		125.5		31.5		125.5		31.5
Max Q Clear Time (g_c+I1), s		12.5		5.4		28.2		14.9
Green Ext Time (p_c), s		10.0		0.1		11.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	409	395	48	15	128
Future Volume (veh/h)	58	409	395	48	15	128
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.98	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1572	1572	1597	1597	1610	1610
Adj Flow Rate, veh/h	78	553	534	65	20	173
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	1	1	0	0
Cap, veh/h	268	1082	1147	139	28	240
Arrive On Green	0.42	0.42	0.42	0.42	0.20	0.20
Sat Flow, veh/h	187	2639	2799	330	141	1224
Grp Volume(v), veh/h	333	298	297	302	194	0
Grp Sat Flow(s),veh/h/ln	1395	1359	1518	1532	1372	0
Q Serve(g_s), s	0.0	3.8	3.3	3.3	3.1	0.0
Cycle Q Clear(g_c), s	3.7	3.8	3.3	3.3	3.1	0.0
Prop In Lane	0.23			0.22	0.10	0.89
Lane Grp Cap(c), veh/h	777	573	640	646	269	0
V/C Ratio(X)	0.43	0.52	0.46	0.47	0.72	0.00
Avail Cap(c_a), veh/h	2721	2626	2931	2959	1486	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.0	5.0	4.9	4.9	8.9	0.0
Incr Delay (d2), s/veh	0.3	0.5	0.4	0.4	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.9	0.9	0.9	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.3	5.6	5.3	5.3	11.6	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		631	599		194	
Approach Delay, s/veh		5.4	5.3		11.6	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		14.4		9.1		14.4
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		45.5		25.5		45.5
Max Q Clear Time (g_c+I1), s		5.8		5.1		5.3
Green Ext Time (p_c), s		4.1		0.5		3.5
Intersection Summary						
HCM 6th Ctrl Delay			6.2			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	185	185	66	241	33	0	0	0	13	80	39
Future Volume (veh/h)	22	185	185	66	241	33	0	0	0	13	80	39
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.85	0.93		0.96				1.00		0.70
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	1572	1572	1572	1572	1572	1572				1597	1597	1597
Adj Flow Rate, veh/h	25	208	208	74	271	37				15	90	44
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3				1	1	1
Cap, veh/h	132	652	500	185	491	61				47	281	137
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44				0.35	0.35	0.35
Sat Flow, veh/h	65	1475	1132	167	1110	137				133	800	391
Grp Volume(v), veh/h	233	0	208	382	0	0				149	0	0
Grp Sat Flow(s),veh/h/ln	1540	0	1132	1415	0	0				1325	0	0
Q Serve(g_s), s	0.0	0.0	4.8	1.2	0.0	0.0				3.2	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	4.8	7.3	0.0	0.0				3.2	0.0	0.0
Prop In Lane	0.11		1.00	0.19		0.10				0.10		0.30
Lane Grp Cap(c), veh/h	784	0	500	736	0	0				464	0	0
V/C Ratio(X)	0.30	0.00	0.42	0.52	0.00	0.00				0.32	0.00	0.00
Avail Cap(c_a), veh/h	1907	0	1352	1749	0	0				1066	0	0
HCM Platoon Ratio	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	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	7.4	8.0	0.0	0.0				9.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.6	0.0	0.0				0.4	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
%ile BackOfQ(95%),veh/ln	1.7	0.0	1.7	3.2	0.0	0.0				1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	0.0	7.9	8.6	0.0	0.0				9.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		441			382						149	
Approach Delay, s/veh		7.6			8.6						9.5	
Approach LOS		A			A						A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		21.0		17.5		21.0
Change Period (Y+Rc), s		4.0		4.0		4.0
Max Green Setting (Gmax), s		46.0		31.0		46.0
Max Q Clear Time (g_c+I1), s		6.8		5.2		9.3
Green Ext Time (p_c), s		2.6		1.0		3.1

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	6	0	0	3	3	131	250	0	6	0	110
Future Volume (veh/h)	212	6	0	0	3	3	131	250	0	6	0	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.95		1.00	0.96		0.93
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	1610	1610	0	0	1610	1610	1535	1535	1535	1547	1547	1547
Adj Flow Rate, veh/h	259	7	0	0	4	4	160	305	0	7	0	134
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	0	0	0	0	6	6	6	5	5	5
Cap, veh/h	362	10	0	0	9	9	445	738	0	106	17	454
Arrive On Green	0.24	0.24	0.00	0.00	0.01	0.01	0.39	0.39	0.00	0.39	0.00	0.39
Sat Flow, veh/h	1495	40	0	0	732	732	746	1963	0	17	44	1165
Grp Volume(v), veh/h	266	0	0	0	0	8	255	210	0	141	0	0
Grp Sat Flow(s),veh/h/ln	1535	0	0	0	0	1463	1312	1327	0	1226	0	0
Q Serve(g_s), s	6.0	0.0	0.0	0.0	0.0	0.2	2.2	4.4	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0	0.0	0.0	0.2	5.2	4.4	0.0	3.0	0.0	0.0
Prop In Lane	0.97		0.00	0.00		0.50	0.63		0.00	0.05		0.95
Lane Grp Cap(c), veh/h	372	0	0	0	0	19	665	517	0	577	0	0
V/C Ratio(X)	0.72	0.00	0.00	0.00	0.00	0.43	0.38	0.41	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	1031	0	0	0	0	597	2027	1938	0	1871	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	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	0.0	0.0	18.6	8.6	8.4	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.0	0.0	5.6	0.4	0.6	0.0	0.3	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(95%),veh/ln	3.4	0.0	0.0	0.0	0.0	0.2	2.2	1.8	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	0.0	0.0	0.0	24.2	9.0	9.0	0.0	8.3	0.0	0.0
LnGrp LOS	B	A	A	A	A	C	A	A	A	A	A	A
Approach Vol, veh/h		266			8			465			141	
Approach Delay, s/veh		15.1			24.2			9.0			8.3	
Approach LOS		B			C			A			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.3		13.7		19.3		5.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		55.5		25.5		55.5		15.5
Max Q Clear Time (g_c+I1), s		7.2		8.0		5.0		2.2
Green Ext Time (p_c), s		4.3		1.2		1.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	35	11	545	155	113	17	726	0	40	1078	6
Future Volume (veh/h)	40	35	11	545	155	113	17	726	0	40	1078	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1547	1547	1547	1597	1597	1597	1597	1597	0	1585	1585	1585
Adj Flow Rate, veh/h	43	37	12	580	165	0	18	772	0	43	1147	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	1	1	1	1	1	0	2	2	2
Cap, veh/h	70	124	105	635	396		38	1322	0	72	1406	7
Arrive On Green	0.05	0.08	0.08	0.22	0.25	0.00	0.03	0.44	0.00	0.05	0.46	0.46
Sat Flow, veh/h	1474	1547	1311	2951	1597	1354	1521	3115	0	1509	3071	16
Grp Volume(v), veh/h	43	37	12	580	165	0	18	772	0	43	562	591
Grp Sat Flow(s),veh/h/ln	1474	1547	1311	1476	1597	1354	1521	1518	0	1509	1506	1582
Q Serve(g_s), s	2.1	1.7	0.6	14.3	6.4	0.0	0.9	14.3	0.0	2.1	24.0	24.0
Cycle Q Clear(g_c), s	2.1	1.7	0.6	14.3	6.4	0.0	0.9	14.3	0.0	2.1	24.0	24.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.01
Lane Grp Cap(c), veh/h	70	124	105	635	396		38	1322	0	72	689	724
V/C Ratio(X)	0.61	0.30	0.11	0.91	0.42		0.47	0.58	0.00	0.60	0.82	0.82
Avail Cap(c_a), veh/h	555	582	493	635	396		327	3488	0	325	1730	1818
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	32.2	31.8	28.5	23.5	0.0	35.8	15.9	0.0	34.7	17.5	17.5
Incr Delay (d2), s/veh	8.5	1.3	0.5	17.8	0.7	0.0	3.3	0.3	0.0	3.0	1.8	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(95%),veh/ln	1.7	1.2	0.4	10.6	4.4	0.0	0.6	8.1	0.0	1.4	12.4	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	33.6	32.2	46.3	24.2	0.0	39.1	16.2	0.0	37.7	19.3	19.2
LnGrp LOS	D	C	C	D	C		D	B	A	D	B	B
Approach Vol, veh/h		92			745			790			1196	
Approach Delay, s/veh		37.9			41.4			16.7			19.9	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	38.6	20.0	10.0	7.5	36.9	7.5	22.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	85.5	16.0	28.0	16.0	85.5	28.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	26.0	16.3	3.7	4.1	16.3	4.1	8.4
Green Ext Time (p_c), s	0.0	8.0	0.0	0.2	0.0	5.3	0.1	0.5

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

Notes

Unsignalized Delay for [WBR] 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)	29	2	36	406	16	46	10	701	5	7	1540	35
Future Volume (veh/h)	29	2	36	406	16	46	10	701	5	7	1540	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1610	1610	1610	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	30	2	37	474	0	0	10	723	5	7	1588	36
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	1	1	1
Cap, veh/h	36	2	45	581	305	0	22	1704	760	16	2273	52
Arrive On Green	0.06	0.06	0.06	0.19	0.00	0.00	0.01	0.57	0.57	0.01	0.56	0.56
Sat Flow, veh/h	600	40	740	3067	1610	0	1509	3011	1343	1521	4045	92
Grp Volume(v), veh/h	69	0	0	474	0	0	10	723	5	7	1003	621
Grp Sat Flow(s),veh/h/ln	1381	0	0	1533	1610	0	1509	1506	1343	1521	1278	1581
Q Serve(g_s), s	5.1	0.0	0.0	15.4	0.0	0.0	0.7	14.2	0.2	0.5	29.4	29.4
Cycle Q Clear(g_c), s	5.1	0.0	0.0	15.4	0.0	0.0	0.7	14.2	0.2	0.5	29.4	29.4
Prop In Lane	0.43		0.54	1.00		0.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	84	0	0	581	305	0	22	1704	760	16	1436	888
V/C Ratio(X)	0.82	0.00	0.00	0.82	0.00	0.00	0.46	0.42	0.01	0.44	0.70	0.70
Avail Cap(c_a), veh/h	213	0	0	1936	1017	0	226	2467	1100	227	2094	1295
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	0.0	0.0	40.3	0.0	0.0	50.7	12.9	9.8	51.0	16.4	16.4
Incr Delay (d2), s/veh	17.7	0.0	0.0	2.1	0.0	0.0	5.5	0.2	0.0	6.8	0.9	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	0.0	10.0	0.0	0.0	0.5	7.7	0.1	0.4	12.9	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.9	0.0	0.0	42.5	0.0	0.0	56.2	13.1	9.8	57.8	17.3	17.8
LnGrp LOS	E	A	A	D	A	A	E	B	A	E	B	B
Approach Vol, veh/h		69			474			738			1631	
Approach Delay, s/veh		65.9			42.5			13.7			17.7	
Approach LOS		E			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	63.3		24.2	5.6	63.7		10.3
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.0
Max Green Setting (Gmax), s	15.5	85.0		65.5	15.5	85.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	31.4		17.4	2.5	16.2		7.1
Green Ext Time (p_c), s	0.0	26.9		1.4	0.0	8.0		0.2

Intersection Summary			
HCM 6th Ctrl Delay			21.8
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	148	44	469	102	82	6	45	121	133	364	13
Future Volume (veh/h)	5	148	44	469	102	82	6	45	121	133	364	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1547	1547	1547	1572	1572	1572	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	5	156	46	494	107	86	6	47	0	140	383	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, %	5	5	5	3	3	3	2	2	2	3	3	3
Cap, veh/h	12	202	60	530	406	327	153	480		468	456	17
Arrive On Green	0.01	0.18	0.18	0.35	0.50	0.50	0.30	0.30	0.00	0.30	0.30	0.30
Sat Flow, veh/h	1474	1147	338	1497	807	649	986	1585	1343	1344	1507	55
Grp Volume(v), veh/h	5	0	202	494	0	193	6	47	0	140	0	397
Grp Sat Flow(s),veh/h/ln	1474	0	1485	1497	0	1456	986	1585	1343	1344	0	1562
Q Serve(g_s), s	0.3	0.0	10.5	25.7	0.0	6.1	0.5	1.7	0.0	6.8	0.0	19.2
Cycle Q Clear(g_c), s	0.3	0.0	10.5	25.7	0.0	6.1	19.7	1.7	0.0	8.5	0.0	19.2
Prop In Lane	1.00		0.23	1.00		0.45	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	12	0	262	530	0	733	153	480		468	0	473
V/C Ratio(X)	0.43	0.00	0.77	0.93	0.00	0.26	0.04	0.10		0.30	0.00	0.84
Avail Cap(c_a), veh/h	447	0	818	574	0	733	172	510		576	0	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.9	0.0	31.7	25.2	0.0	11.5	35.5	20.2	0.0	23.3	0.0	26.3
Incr Delay (d2), s/veh	32.1	0.0	6.7	22.0	0.0	0.3	0.1	0.1	0.0	0.6	0.0	10.0
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(95%),veh/ln	0.4	0.0	7.3	17.3	0.0	3.3	0.2	1.2	0.0	3.9	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	0.0	38.4	47.2	0.0	11.7	35.7	20.4	0.0	23.9	0.0	36.4
LnGrp LOS	E	A	D	D	A	B	D	C		C	A	D
Approach Vol, veh/h		207			687			53			537	
Approach Delay, s/veh		39.2			37.3			22.1			33.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	6.1	46.2	28.5	32.6	19.8	28.5
Change Period (Y+Rc), s	5.5	* 5.5	4.0	4.0	5.5	4.0
Max Green Setting (Gmax), s	24.5	* 36	26.0	31.0	44.5	31.0
Max Q Clear Time (g_c+I1), s	2.3	8.1	21.7	27.7	12.5	21.2
Green Ext Time (p_c), s	0.0	1.6	0.1	0.9	1.7	3.3

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	439	27	146	664	114	17	15	89	211	53	121
Future Volume (veh/h)	19	439	27	146	664	114	17	15	89	211	53	121
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1560	1560	1560	1547	1547	1547	1547	1547	1547
Adj Flow Rate, veh/h	20	457	28	152	692	0	18	16	0	220	55	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	45	855	52	200	1191		459	381		497	381	
Arrive On Green	0.03	0.30	0.30	0.13	0.40	0.00	0.25	0.25	0.00	0.25	0.25	0.00
Sat Flow, veh/h	1509	2877	176	1485	2964	1322	1317	1547	0	1364	1547	0
Grp Volume(v), veh/h	20	238	247	152	692	0	18	16	0	220	55	0
Grp Sat Flow(s),veh/h/ln	1509	1506	1547	1485	1482	1322	1317	1547	0	1364	1547	0
Q Serve(g_s), s	0.5	5.5	5.6	4.1	7.6	0.0	0.5	0.3	0.0	6.1	1.2	0.0
Cycle Q Clear(g_c), s	0.5	5.5	5.6	4.1	7.6	0.0	1.6	0.3	0.0	6.5	1.2	0.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	45	447	460	200	1191		459	381		497	381	
V/C Ratio(X)	0.45	0.53	0.54	0.76	0.58		0.04	0.04		0.44	0.14	
Avail Cap(c_a), veh/h	379	1456	1496	1082	4282		1094	1127		1155	1127	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.0	12.3	12.3	17.5	9.8	0.0	13.0	12.0	0.0	14.5	12.3	0.0
Incr Delay (d2), s/veh	9.6	1.4	1.4	8.2	0.5	0.0	0.1	0.1	0.0	1.3	0.4	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(95%),veh/ln	0.5	2.9	3.0	2.9	3.3	0.0	0.2	0.2	0.0	3.3	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	13.7	13.7	25.7	10.3	0.0	13.0	12.1	0.0	15.8	12.7	0.0
LnGrp LOS	C	B	B	C	B		B	B		B	B	
Approach Vol, veh/h		505			844			34			275	
Approach Delay, s/veh		14.3			13.1			12.6			15.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	21.3		14.8	10.1	16.9		14.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	60.5		30.5	30.5	40.5		30.5				
Max Q Clear Time (g_c+I1), s	2.5	9.6		3.6	6.1	7.6		8.5				
Green Ext Time (p_c), s	0.0	6.6		0.2	0.7	4.4		2.1				

Intersection Summary		
HCM 6th Ctrl Delay		13.8
HCM 6th LOS		B

Notes

Unsignalized Delay for [NBR, WBR, SBR] 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)	227	165	122	27	484	10	167	85	27	6	88	329
Future Volume (veh/h)	227	165	122	27	484	10	167	85	27	6	88	329
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1572	1572	1572	1597	1597	1597	1585	1585	1585	1560	1560	1560
Adj Flow Rate, veh/h	247	179	133	29	526	11	182	92	29	7	96	358
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	2	2	2	4	4	4
Cap, veh/h	227	569	399	54	679	14	203	103	259	22	299	272
Arrive On Green	0.15	0.34	0.34	0.04	0.22	0.22	0.20	0.20	0.20	0.21	0.21	0.21
Sat Flow, veh/h	1497	1675	1174	1521	3040	64	1019	515	1296	106	1449	1318
Grp Volume(v), veh/h	247	158	154	29	262	275	274	0	29	103	0	358
Grp Sat Flow(s),veh/h/ln	1497	1494	1355	1521	1518	1586	1534	0	1296	1554	0	1318
Q Serve(g_s), s	12.5	6.4	6.9	1.5	13.4	13.4	14.3	0.0	1.5	4.6	0.0	17.0
Cycle Q Clear(g_c), s	12.5	6.4	6.9	1.5	13.4	13.4	14.3	0.0	1.5	4.6	0.0	17.0
Prop In Lane	1.00		0.87	1.00		0.04	0.66		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	227	508	461	54	339	354	306	0	259	321	0	272
V/C Ratio(X)	1.09	0.31	0.33	0.54	0.77	0.78	0.89	0.00	0.11	0.32	0.00	1.32
Avail Cap(c_a), veh/h	227	762	691	111	654	684	317	0	268	321	0	272
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	34.9	20.1	20.2	39.1	30.0	30.0	32.1	0.0	27.0	27.8	0.0	32.7
Incr Delay (d2), s/veh	84.6	0.3	0.4	8.2	3.8	3.6	25.6	0.0	0.2	0.6	0.0	165.6
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(95%),veh/ln	15.4	3.9	3.8	1.2	8.7	9.0	11.8	0.0	0.9	3.2	0.0	28.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.6	20.4	20.7	47.2	33.8	33.7	57.7	0.0	27.2	28.3	0.0	198.3
LnGrp LOS	F	C	C	D	C	C	E	A	C	C	A	F
Approach Vol, veh/h		559			566			303			461	
Approach Delay, s/veh		64.3			34.4			54.7			160.3	
Approach LOS		E			C			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	32.5		21.5	17.0	22.9		20.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.0	42.0		17.0	12.5	35.5		17.0				
Max Q Clear Time (g_c+I1), s	3.5	8.9		19.0	14.5	15.4		16.3				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	3.0		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		77.2
HCM 6th LOS		E

Intersection	
Intersection Delay, s/veh	37.8
Intersection LOS	E

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	97	0	64	0	0	803
Future Vol, veh/h	97	0	64	0	0	803
Peak Hour Factor	0.91	0.91	0.91	0.91	1.00	1.00
Heavy Vehicles, %	4	4	3	3	1	1
Mvmt Flow	107	0	70	0	0	803
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	10.6	8.8	43.9
HCM LOS	B	A	E

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	100%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	64	97	803
LT Vol	0	97	0
Through Vol	64	0	803
RT Vol	0	0	0
Lane Flow Rate	70	107	803
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.181	0.966
Departure Headway (Hd)	5.122	6.107	4.332
Convergence, Y/N	Yes	Yes	Yes
Cap	695	583	835
Service Time	3.187	4.188	2.365
HCM Lane V/C Ratio	0.101	0.184	0.962
HCM Control Delay	8.8	10.6	43.9
HCM Lane LOS	A	B	E
HCM 95th-tile Q	0.3	0.7	15.6

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	141	72	81	208	189	78
Future Vol, veh/h	141	72	81	208	189	78
Conflicting Peds, #/hr	3	1	1	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	1	1	4	4
Mvmt Flow	147	75	84	217	197	81

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	629	242	281	0	-	0
Stage 1	241	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.209	-	-	-
Pot Cap-1 Maneuver	445	794	1287	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	410	792	1284	-	-	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	2.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1284	-	490	-	-
HCM Lane V/C Ratio	0.066	-	0.453	-	-
HCM Control Delay (s)	8	0	18.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.3	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	165	3	2	115	9	4	10	1	5	7	40
Future Vol, veh/h	25	165	3	2	115	9	4	10	1	5	7	40
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	6	6	6
Mvmt Flow	31	206	4	3	144	11	5	13	1	6	9	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	8.4	8	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	13%	2%	10%
Vol Thru, %	67%	85%	91%	13%
Vol Right, %	7%	2%	7%	77%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	193	126	52
LT Vol	4	25	2	5
Through Vol	10	165	115	7
RT Vol	1	3	9	40
Lane Flow Rate	19	241	158	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.025	0.29	0.19	0.081
Departure Headway (Hd)	4.878	4.324	4.34	4.464
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	837	828	803
Service Time	2.905	2.324	2.356	2.487
HCM Lane V/C Ratio	0.026	0.288	0.191	0.081
HCM Control Delay	8	9.1	8.4	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	1.2	0.7	0.3

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	25	170	16	22	4	243	58	26	3	47	17
Future Vol, veh/h	16	25	170	16	22	4	243	58	26	3	47	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	0	0	0	3	3	3	6	6	6
Mvmt Flow	17	27	183	17	24	4	261	62	28	3	51	18
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	9.9	9.5	11.8	9
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	1%	38%	100%	0%
Vol Thru, %	0%	69%	0%	13%	52%	0%	73%
Vol Right, %	0%	31%	0%	86%	10%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	84	14	197	42	3	64
LT Vol	243	0	14	2	16	3	0
Through Vol	0	58	0	25	22	0	47
RT Vol	0	26	0	170	4	0	17
Lane Flow Rate	261	90	15	211	45	3	69
Geometry Grp	5	5	5	5	4b	5	5
Degree of Util (X)	0.423	0.128	0.027	0.299	0.074	0.005	0.106
Departure Headway (Hd)	5.83	5.108	6.201	5.093	5.938	6.224	5.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	614	696	575	702	598	570	640
Service Time	3.604	2.882	3.962	2.853	4.026	4.021	3.33
HCM Lane V/C Ratio	0.425	0.129	0.026	0.301	0.075	0.005	0.108
HCM Control Delay	12.9	8.6	9.1	10	9.5	9.1	9
HCM Lane LOS	B	A	A	A	A	A	A
HCM 95th-tile Q	2.1	0.4	0.1	1.3	0.2	0	0.4

MOVEMENT SUMMARY

Site: 74 [Wheaton Way & Manette Bridge (Site Folder: 2023 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Harkins St (WB)															
6	T1	All MCs	203	1.8	203	1.8	0.264	7.4	LOS A	1.5	37.7	0.61	0.63	0.61	34.1
16	R2	All MCs	38	1.8	38	1.8	0.264	7.1	LOS A	1.5	37.7	0.61	0.63	0.61	33.8
Approach			241	1.8	241	1.8	0.264	7.3	LOS A	1.5	37.7	0.61	0.63	0.61	34.0
North: Wheaton Way (SB)															
7u	U	All MCs	1	2.4	1	2.4	0.241	12.0	LOS B	1.4	34.5	0.42	0.57	0.42	34.0
7	L2	All MCs	45	2.4	45	2.4	0.241	10.0	LOS A	1.4	34.5	0.42	0.57	0.42	34.0
14	R2	All MCs	223	2.4	223	2.4	0.241	5.5	LOS A	1.4	34.5	0.42	0.57	0.42	34.3
Approach			269	2.4	269	2.4	0.241	6.3	LOS A	1.4	34.5	0.42	0.57	0.42	34.2
West: Manette Bridge (EB)															
5	L2	All MCs	488	2.1	488	2.1	0.680	9.5	LOS A	7.5	191.4	0.36	0.53	0.36	33.2
2	T1	All MCs	387	2.1	387	2.1	0.680	5.2	LOS A	7.5	191.4	0.36	0.53	0.36	33.7
Approach			876	2.1	876	2.1	0.680	7.6	LOS A	7.5	191.4	0.36	0.53	0.36	33.4
All Vehicles			1386	2.1	1386	2.1	0.680	7.3	LOS A	7.5	191.4	0.42	0.55	0.42	33.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	95	17	0	0	0	0	0	1	72
Future Vol, veh/h	0	0	0	95	17	0	0	0	0	0	1	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	6	6	6	0	0	0	1	1	1
Mvmt Flow	0	0	0	107	19	0	0	0	0	0	1	81

Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	233	22
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.16	-	-	-	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.254	-	-	-	4.009	3.309
Pot Cap-1 Maneuver	-	-	0	0	669	1058
Stage 1	-	-	0	0	714	-
Stage 2	-	-	0	0	-	-
Platoon blocked, %		-				
Mov Cap-1 Maneuver	-	-	-	-	0	1058
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB	SB
HCM Control Delay, s		8.7
HCM LOS		A

Minor Lane/Major Mvmt	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1058
HCM Lane V/C Ratio	-	-	0.076
HCM Control Delay (s)	-	-	8.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	38	294	44	50	197
Future Vol, veh/h	30	38	294	44	50	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	31	40	306	46	52	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	638	329	0	0	352	0
Stage 1	329	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	444	717	-	-	1218	-
Stage 1	734	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	425	717	-	-	1218	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	717	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	550	1218	-
HCM Lane V/C Ratio	-	-	0.129	0.043	-
HCM Control Delay (s)	-	-	12.5	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	182	53	12	324	7	87	8	32	5	5	7
Future Vol, veh/h	8	182	53	12	324	7	87	8	32	5	5	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	5	5	5	2	2	2	0	0	0
Mvmt Flow	9	212	62	14	377	8	101	9	37	6	6	8
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	11.4	14.7	10.4	9
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	100%	0%	100%	0%	29%
Vol Thru, %	6%	0%	77%	0%	98%	29%
Vol Right, %	25%	0%	23%	0%	2%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	127	8	235	12	331	17
LT Vol	87	8	0	12	0	5
Through Vol	8	0	182	0	324	5
RT Vol	32	0	53	0	7	7
Lane Flow Rate	148	9	273	14	385	20
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.23	0.015	0.397	0.023	0.567	0.032
Departure Headway (Hd)	5.605	5.891	5.227	5.82	5.301	5.791
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	634	602	680	610	674	622
Service Time	3.704	3.684	3.019	3.604	3.085	3.791
HCM Lane V/C Ratio	0.233	0.015	0.401	0.023	0.571	0.032
HCM Control Delay	10.4	8.8	11.5	8.7	14.9	9
HCM Lane LOS	B	A	B	A	B	A
HCM 95th-tile Q	0.9	0	1.9	0.1	3.6	0.1

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	111	4	227	42	102	0	0	103	274
Future Vol, veh/h	0	0	0	111	4	227	42	102	0	0	103	274
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	2	2	2	2	2	4	4	4
Mvmt Flow	0	0	0	116	4	236	44	106	0	0	107	285

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	301	301	106	107	0	-	-	-	0
Stage 1	194	194	-	-	-	-	-	-	-
Stage 2	107	107	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	691	612	948	1484	-	0	0	-	-
Stage 1	839	740	-	-	-	0	0	-	-
Stage 2	917	807	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	669	0	948	1484	-	-	-	-	-
Mov Cap-2 Maneuver	669	0	-	-	-	-	-	-	-
Stage 1	812	0	-	-	-	-	-	-	-
Stage 2	917	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1484	-	669	948	-	-
HCM Lane V/C Ratio	0.029	-	0.179	0.249	-	-
HCM Control Delay (s)	7.5	0	11.6	10.1	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	1	-	-

Intersection	
Int Delay, s/veh	13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	62	266	0	0	0	0	68	23	204	200	0
Future Vol, veh/h	87	62	266	0	0	0	0	68	23	204	200	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	0	0	0	7	7	7	2	2	2
Mvmt Flow	93	66	283	0	0	0	0	72	24	217	213	0

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	731	743	213				-	0	0	96	0	0
Stage 1	647	647	-				-	-	-	-	-	-
Stage 2	84	96	-				-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.21				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.41	5.51	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-				-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	390	344	830				0	-	-	1498	-	0
Stage 1	523	468	-				0	-	-	-	-	0
Stage 2	942	817	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	326	0	830				-	-	-	1498	-	-
Mov Cap-2 Maneuver	326	0	-				-	-	-	-	-	-
Stage 1	523	0	-				-	-	-	-	-	-
Stage 2	788	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.7	0	3.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	601	1498	-
HCM Lane V/C Ratio	-	-	0.735	0.145	-
HCM Control Delay (s)	-	-	25.7	7.8	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	6.3	0.5	-

Intersection	
Int Delay, s/veh	25.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	406	358	351	676	0	0	0	0	46	11	119
Future Vol, veh/h	0	406	358	351	676	0	0	0	0	46	11	119
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	175	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	0	0	0	4	4	4
Mvmt Flow	0	437	385	377	727	0	0	0	0	49	12	128

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	-	440	0	0				1702	1921	366
Stage 1	-	-	-	-	-	-				1481	1481	-
Stage 2	-	-	-	-	-	-				221	440	-
Critical Hdwy	-	-	-	4.16	-	-				6.88	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-				5.88	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.88	5.58	-
Follow-up Hdwy	-	-	-	2.23	-	-				3.54	4.04	3.34
Pot Cap-1 Maneuver	0	-	0	1109	-	0				81	65	625
Stage 1	0	-	0	-	-	0				172	184	-
Stage 2	0	-	0	-	-	0				789	571	-
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	1109	-	-				~ 35	0	624
Mov Cap-2 Maneuver	-	-	-	-	-	-				~ 35	0	-
Stage 1	-	-	-	-	-	-				172	0	-
Stage 2	-	-	-	-	-	-				339	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.3	205.2
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	1109	-	35	624
HCM Lane V/C Ratio	-	0.34	-	1.751	0.205
HCM Control Delay (s)	-	9.9	1.4	$ 608	12.3
HCM Lane LOS	-	A	A	F	B
HCM 95th %tile Q(veh)	-	1.5	-	6.7	0.8

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

HCM 6th Signalized Intersection Summary
105: SR 3 NB Off Ramp/SR 3 NB On Ramp & Loxie Eagans Blvd

04/29/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	297	0	0	802	218	417	0	186	0	0	0
Future Volume (veh/h)	173	297	0	0	802	218	417	0	186	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1585	1585	0	0	1585	1585	1560	1560	1560			
Adj Flow Rate, veh/h	184	316	0	0	853	0	444	0	198			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	4	4	4			
Cap, veh/h	0	1272	0	0	1272		566	0	501			
Arrive On Green	0.00	0.42	0.00	0.00	0.42	0.00	0.38	0.00	0.38			
Sat Flow, veh/h	0	3091	0	0	3170	0	1485	0	1315			
Grp Volume(v), veh/h	0	316	0	0	853	0	444	0	198			
Grp Sat Flow(s),veh/h/ln	0	1506	0	0	1506	0	1485	0	1315			
Q Serve(g_s), s	0.0	3.2	0.0	0.0	10.7	0.0	12.4	0.0	5.1			
Cycle Q Clear(g_c), s	0.0	3.2	0.0	0.0	10.7	0.0	12.4	0.0	5.1			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1272	0	0	1272		566	0	501			
V/C Ratio(X)	0.00	0.25	0.00	0.00	0.67		0.78	0.00	0.40			
Avail Cap(c_a), veh/h	0	4714	0	0	4136		957	0	847			
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	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	8.7	0.0	0.0	10.9	0.0	12.8	0.0	10.6			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.6	0.0	2.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	1.4	0.0	0.0	4.9	0.0	6.3	0.0	2.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.8	0.0	0.0	11.5	0.0	15.2	0.0	11.1			
LnGrp LOS	A	A	A	A	B		B	A	B			
Approach Vol, veh/h		316			853			642				
Approach Delay, s/veh		8.8			11.5			13.9				
Approach LOS		A			B			B				
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	0.0	24.4		22.5		24.4						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	5.0	64.4		30.2		73.4						
Max Q Clear Time (g_c+I1), s	0.0	12.7		14.4		5.2						
Green Ext Time (p_c), s	0.0	7.1		3.2		2.2						
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [WBR] 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)	54	0	30	38	1	21	39	1466	50	37	1308	42
Future Volume (veh/h)	54	0	30	38	1	21	39	1466	50	37	1308	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.96	0.97		0.96	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	1397	1397	1397	1572	1572	1572	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	56	0	31	39	1	22	40	1511	52	38	1348	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	17	17	17	3	3	3	1	1	1	2	2	2
Cap, veh/h	143	0	112	142	6	121	334	2391	82	281	2378	76
Arrive On Green	0.10	0.00	0.10	0.10	0.10	0.10	0.03	0.80	0.80	0.03	0.80	0.80
Sat Flow, veh/h	1183	0	1140	1325	56	1238	1521	2991	103	1509	2977	95
Grp Volume(v), veh/h	56	0	31	39	0	23	40	765	798	38	681	710
Grp Sat Flow(s),veh/h/ln	1183	0	1140	1325	0	1294	1521	1518	1576	1509	1506	1567
Q Serve(g_s), s	7.1	0.0	3.9	4.4	0.0	2.5	0.7	31.8	32.1	0.7	25.9	26.0
Cycle Q Clear(g_c), s	9.7	0.0	3.9	8.3	0.0	2.5	0.7	31.8	32.1	0.7	25.9	26.0
Prop In Lane	1.00		1.00	1.00		0.96	1.00		0.07	1.00		0.06
Lane Grp Cap(c), veh/h	143	0	112	142	0	127	334	1213	1260	281	1203	1251
V/C Ratio(X)	0.39	0.00	0.28	0.27	0.00	0.18	0.12	0.63	0.63	0.14	0.57	0.57
Avail Cap(c_a), veh/h	270	0	234	285	0	265	391	1213	1260	338	1203	1251
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	0.49	0.49	0.49	0.82	0.82	0.82
Uniform Delay (d), s/veh	69.1	0.0	65.3	69.1	0.0	64.6	4.9	6.3	6.4	6.2	5.8	5.8
Incr Delay (d2), s/veh	1.8	0.0	1.3	1.0	0.0	0.7	0.1	1.2	1.2	0.2	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	0.0	2.2	2.8	0.0	1.6	0.4	12.9	13.4	0.5	11.9	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	0.0	66.6	70.1	0.0	65.3	4.9	7.6	7.6	6.4	7.4	7.3
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		87			62			1603			1429	
Approach Delay, s/veh		69.3			68.3			7.5			7.3	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	128.7		19.3	8.1	128.6		19.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	86.0		32.0	10.0	102.0		32.0
Max Q Clear Time (g_c+I1), s	2.7	34.1		11.7	2.7	28.0		10.3
Green Ext Time (p_c), s	0.0	18.2		0.3	0.0	15.2		0.2

Intersection Summary		
HCM 6th Ctrl Delay		10.3
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	513	311	27	366	4	258	141	33	139	403	53
Future Volume (veh/h)	5	513	311	27	366	4	258	141	33	139	403	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1522	1522	1522	1510	1510	1510	1585	1585	1585
Adj Flow Rate, veh/h	5	534	0	28	381	4	269	147	34	145	420	55
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	4	7	7	7	8	8	8	2	2	2
Cap, veh/h	7	574		32	580	6	291	419	97	166	418	354
Arrive On Green	0.01	0.37	0.00	0.02	0.39	0.39	0.20	0.35	0.35	0.11	0.26	0.26
Sat Flow, veh/h	1485	1560	1322	1450	1503	16	1438	1186	274	1509	1585	1343
Grp Volume(v), veh/h	5	534	0	28	0	385	269	0	181	145	420	55
Grp Sat Flow(s),veh/h/ln	1485	1560	1322	1450	0	1519	1438	0	1460	1509	1585	1343
Q Serve(g_s), s	0.5	46.2	0.0	2.7	0.0	29.3	25.8	0.0	12.8	13.3	37.0	4.4
Cycle Q Clear(g_c), s	0.5	46.2	0.0	2.7	0.0	29.3	25.8	0.0	12.8	13.3	37.0	4.4
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	7	574		32	0	586	291	0	516	166	418	354
V/C Ratio(X)	0.67	0.93		0.87	0.00	0.66	0.93	0.00	0.35	0.87	1.01	0.16
Avail Cap(c_a), veh/h	169	722		103	0	606	348	0	516	247	418	354
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.7	42.6	0.0	68.4	0.0	35.5	55.0	0.0	33.5	61.6	51.7	39.7
Incr Delay (d2), s/veh	56.1	16.7	0.0	36.1	0.0	3.3	28.3	0.0	0.3	19.0	45.5	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(95%),veh/ln	0.5	27.3	0.0	2.4	0.0	16.7	17.0	0.0	8.1	10.0	27.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.8	59.3	0.0	104.6	0.0	38.8	83.3	0.0	33.8	80.6	97.2	39.9
LnGrp LOS	F	E		F	A	D	F	A	C	F	F	D
Approach Vol, veh/h		539			413			450			620	
Approach Delay, s/veh		59.9			43.3			63.4			88.3	
Approach LOS		E			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	57.1	33.5	42.1	5.3	59.6	20.8	54.8
Change Period (Y+Rc), s	4.6	5.4	5.1	5.1	4.6	* 5.4	5.4	* 5.1
Max Green Setting (Gmax), s	10.0	65.0	34.0	37.0	16.0	* 56	23.0	* 34
Max Q Clear Time (g_c+I1), s	4.7	48.2	27.8	39.0	2.5	31.3	15.3	14.8
Green Ext Time (p_c), s	0.0	3.5	0.6	0.0	0.0	4.1	0.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	66.0
HCM 6th LOS	E

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)	229	1	118	9	1	16	22	404	6	12	671	3
Future Volume (veh/h)	229	1	118	9	1	16	22	404	6	12	671	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1572	1572	1572	1560	1560	1560	1510	1510	1510	1560	1560	1560
Adj Flow Rate, veh/h	290	1	149	11	1	20	28	511	8	15	849	4
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	4	4	4	8	8	8	4	4	4
Cap, veh/h	265	1	426	57	24	40	41	732	620	26	739	626
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.03	0.48	0.48	0.02	0.47	0.47
Sat Flow, veh/h	564	2	1332	0	74	123	1438	1510	1279	1485	1560	1322
Grp Volume(v), veh/h	291	0	149	32	0	0	28	511	8	15	849	4
Grp Sat Flow(s),veh/h/ln	566	0	1332	198	0	0	1438	1510	1279	1485	1560	1322
Q Serve(g_s), s	0.0	0.0	7.2	0.0	0.0	0.0	1.6	22.3	0.3	0.8	40.0	0.1
Cycle Q Clear(g_c), s	27.0	0.0	7.2	27.0	0.0	0.0	1.6	22.3	0.3	0.8	40.0	0.1
Prop In Lane	1.00		1.00	0.34		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	426	121	0	0	41	732	620	26	739	626
V/C Ratio(X)	1.09	0.00	0.35	0.27	0.00	0.00	0.68	0.70	0.01	0.57	1.15	0.01
Avail Cap(c_a), veh/h	266	0	426	121	0	0	136	732	620	141	739	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	0.0	22.0	23.2	0.0	0.0	40.6	16.9	11.3	41.1	22.2	11.7
Incr Delay (d2), s/veh	82.5	0.0	0.5	1.2	0.0	0.0	18.1	2.9	0.0	18.4	82.2	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(95%),veh/ln	18.1	0.0	4.1	0.9	0.0	0.0	1.4	12.4	0.1	0.8	43.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.5	0.0	22.5	24.3	0.0	0.0	58.8	19.8	11.3	59.5	104.4	11.7
LnGrp LOS	F	A	C	C	A	A	E	B	B	E	F	B
Approach Vol, veh/h		440			32			547			868	
Approach Delay, s/veh		84.0			24.3			21.7			103.2	
Approach LOS		F			C			C			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	46.9		31.5	6.9	46.0		31.5				
Change Period (Y+Rc), s	4.5	6.0		4.5	4.5	6.0		4.5				
Max Green Setting (Gmax), s	8.0	40.0		27.0	8.0	40.0		27.0				
Max Q Clear Time (g_c+I1), s	2.8	24.3		29.0	3.6	42.0		29.0				
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			73.7									
HCM 6th LOS			E									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	115	33	7	146	14	79	25	15	8	20	6
Future Volume (veh/h)	10	115	33	7	146	14	79	25	15	8	20	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1597	1597	1597	1585	1585	1585	1585	1585	1585	1535	1535	1535
Adj Flow Rate, veh/h	11	124	35	8	157	15	85	27	16	9	22	6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	6	6	6
Cap, veh/h	213	311	84	205	372	35	560	147	56	282	338	75
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	51	1160	314	34	1388	129	785	466	179	157	1071	238
Grp Volume(v), veh/h	170	0	0	180	0	0	128	0	0	37	0	0
Grp Sat Flow(s),veh/h/ln	1525	0	0	1551	0	0	1430	0	0	1466	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	1.8	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.0
Prop In Lane	0.06		0.21	0.04		0.08	0.66		0.12	0.24		0.16
Lane Grp Cap(c), veh/h	608	0	0	611	0	0	763	0	0	696	0	0
V/C Ratio(X)	0.28	0.00	0.00	0.29	0.00	0.00	0.17	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	2640	0	0	2684	0	0	2591	0	0	2557	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	5.8	0.0	0.0	4.9	0.0	0.0	4.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	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(95%),veh/ln	0.5	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	0.0	6.1	0.0	0.0	5.0	0.0	0.0	4.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		170			180			128			37	
Approach Delay, s/veh		6.0			6.1			5.0			4.6	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	10.1	9.1	10.1	9.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	31.0	31.0	31.0	31.0
Max Q Clear Time (g_c+I1), s	3.2	3.7	2.3	3.8
Green Ext Time (p_c), s	0.7	1.0	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

MOVEMENT SUMMARY

Site: 328 [SR 3 & Ariport Rd (Site Folder: 2023 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

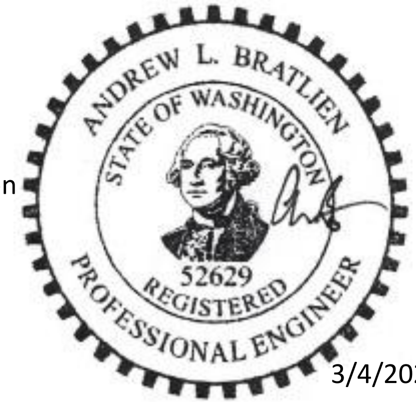
Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SR 3															
8	T1	All MCs	781	4.0	781	4.0	0.574	5.0	LOS A	4.2	109.6	0.10	0.42	0.10	38.6
18	R2	All MCs	19	4.0	19	4.0	0.574	4.8	LOS A	4.2	109.6	0.10	0.42	0.10	30.0
Approach			800	4.0	800	4.0	0.574	5.0	LOS A	4.2	109.6	0.10	0.42	0.10	38.4
East: Ariport Rd															
1	L2	All MCs	33	8.0	33	8.0	0.086	9.1	LOS A	0.4	10.6	0.59	0.64	0.59	27.1
16	R2	All MCs	37	8.0	37	8.0	0.086	5.2	LOS A	0.4	10.6	0.59	0.64	0.59	27.4
Approach			70	8.0	70	8.0	0.086	7.0	LOS A	0.4	10.6	0.59	0.64	0.59	27.2
North: SR 3															
7	L2	All MCs	10	5.0	10	5.0	0.623	11.0	LOS B	5.3	138.1	0.23	0.42	0.23	29.5
4	T1	All MCs	835	5.0	835	5.0	0.623	5.1	LOS A	5.3	138.1	0.23	0.42	0.23	38.1
Approach			845	5.0	845	5.0	0.623	5.2	LOS A	5.3	138.1	0.23	0.42	0.23	37.9
All Vehicles			1715	4.7	1715	4.7	0.623	5.2	LOS A	5.3	138.1	0.19	0.43	0.19	37.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Attachment C. Future Traffic Conditions Analysis

March 4, 2025



TO: Vicki Grover, PE
City of Bremerton Engineering Division

FROM: Andrew L. Bratlien, PE, PTOE
Daniel B. Hodun, EIT

SUBJECT: Future Conditions Analysis

3/4/2025

This memorandum describes the methods, assumptions, and findings of the 2030 and 2044 intersection Level of Service (LOS) analyses developed in support of the Transportation Element.

LEVEL OF SERVICE BACKGROUND

Level of Service Definition

Level of service (LOS) is a qualitative description of the operating performance of an element of transportation infrastructure such as a roadway or an intersection. LOS is typically expressed as a letter score from LOS A, representing free flow conditions with minimal delays, to LOS F, representing breakdown flow with high delays. In urban street networks, intersections typically constitute mobility chokepoints and are the focus of LOS analyses.

Intersection LOS is defined by the average delay experienced by a vehicle traveling through an intersection. Delay at a signalized intersection can be caused by waiting for the signal or waiting for the queue ahead to clear the signal. Delay at roundabouts and stop-controlled intersections is caused by waiting for a gap in traffic or waiting for a queue to clear the intersection or roundabout.

Level of service for signalized, roundabout, and all-way stop control intersections is based on the average delay for all vehicles entering the intersection during the study period. LOS for minor-approach stop-controlled intersections is based on the control delay on the worst movement.

Intersection LOS thresholds are defined by the Transportation Research Board *Highway Capacity Manual.* Signalized and roundabout intersections utilize different LOS thresholds than stop-controlled intersections. Intersection LOS thresholds for all intersection types are shown in **Table 1**.

Table 1. Level of Service Thresholds

LOS	Signal and Roundabout Delay (sec/veh)	Stop-Controlled Intersection Delay (sec/veh)
A	≤10	≤10
B	>10 – 20	>10 – 15
C	>20 – 35	>15 – 25
D	>35 – 55	>25 – 35
E	>55 – 80	>35 – 50
F	>80	>50

Level of Service Policy

The Bremerton Comprehensive Plan established a minimum level-of-service (LOS) standard of LOS E for City roadways. Minimum LOS standards for State routes are established by the Washington State Department of Transportation (WSDOT). WSDOT designates SR 3, SR 304 (Burwell St), and SR 310 (Kitsap Way) as Highways of Statewide Significance (HSS), with a minimum LOS D standard. The WSDOT designates SR 303 (Warren Ave) as a non-HSS route with a minimum LOS E/Mitigated standard, meaning that congestion should be mitigated when peak hour LOS falls below LOS E.

ANALYSIS METHODS AND ASSUMPTIONS

Analysis Scenarios

This analysis considered AM and PM peak hour intersection operations in two forecasting years: 2030 and 2044. The 2030 Pipeline scenario assumes construction of all development in the City of Bremerton permitting pipeline as of January 2024, confirmed by City of Bremerton staff. The six-year forecasting horizon used in this scenario is consistent with Washington State Growth Management Act (GMA) requirements for transportation concurrency management.

The 2044 Long-Range scenario utilized long-range development forecasts confirmed by City of Bremerton staff in March 2024. These forecasts are consistent with the Land Use Element of the ongoing City of Bremerton Comprehensive Plan update and therefore maintain consistency with the goals and policies of the Comprehensive Plan.

Study Area

This analysis considered 60 intersections of collector and arterial streets in and near Bremerton, including 23 City of Bremerton intersections, 32 intersections on WSDOT facilities in the City of Bremerton, and five intersections on key facilities outside city limits which impact mobility into, out of, and within Bremerton. The study intersections are consistent with the sites analyzed in the 2023 intersection LOS analysis, as described in the Transportation Solutions memorandum “2023 Intersection Level of Service Analysis,” dated December 17, 2024.

Intersection data collection sites were selected based on roadway functional classification, control type, and location. Sites included all signalized intersections and roundabouts within city limits. Data collection also included all intersections of roadways with functional classification Principal Arterial and Minor Arterial. Finally, data collection sites included other intersections which serve high demand or play an important role in vehicle mobility and route choice in Bremerton, based on engineering judgment.

Baseline Transportation Improvement Projects

This analysis assumed construction of two transportation improvement projects in all 2030 and 2044 scenarios:

- Naval Avenue - 1st to 15th Bicycle and Pedestrian Enhancements: This project will rechannelize Naval Avenue from 1st Street to 15th Street to provide two through lanes and a center turn lane in addition to safe active transportation facilities.
- 6th Street Active Transportation Improvements: This project will rechannelize 6th Street from 11th Street to Washington Avenue to provide two through lanes and a center turn lane in addition to safe active transportation facilities.

The baseline transportation improvement projects are described in greater detail on the City of Bremerton website[1,2].

Travel Demand Model

Traffic volume forecasts were developed using the Bremerton travel demand model, which was updated in 2023 to reflect the latest development inventory, driver behavior, trip generation rates, and modeling procedures. The travel demand model was validated using real-world traffic counts reflects a correlation coefficient of 0.98 in the AM peak hour and 0.96 in the PM peak hours of travel. This represents the best available tool for travel demand forecasting in and near Bremerton. The methods and assumptions of the travel demand model are described in the Transportation Solutions memorandum “Transportation Modeling Methodology,” dated November 10, 2023.

Level of Service Analysis Methodology

Signalized and stop-controlled intersection operations were analyzed in Synchro 11 software using *Highway Capacity Manual 6th Edition* methodologies. Roundabout intersections were analyzed in Sidra Intersection 9.1 software using the Sidra capacity model and WSDOT Sidra Policy Settings. Intersection LOS analysis methods and assumptions are described in greater detail in the Transportation Solutions memorandum “2023 Intersection Level of Service Analysis,” dated May 20, 2024.

NAVAL BASE KITSAP-BREMERTON GATE OPERATIONS

Naval Base Kitsap-Bremerton (NBK-BR) is located on the north side of the Sinclair Inlet within the City of Bremerton. It includes five vehicle/pedestrian gates (Missouri, Charleston, Montgomery, Naval, and Main) and two pedestrian-only gates (State and Burwell) in the vicinity of the study area intersections.

An analysis of NBK-BR gate operations in the 2023 Joint Compatibility Transportation Plan (JCTP) indicated average peak hour vehicle delay of several minutes per vehicle at the vehicle gates, including an average of 584 seconds (9 minutes and 44 seconds) of delay per vehicle at the Naval Ave gate. Queuing resulting from gate delays spills onto public streets, impacting traffic operations and property access during periods of peak congestion.

The queuing resulting with NBK-BR gate operations may impact the study intersections during the AM and PM peak periods. However, because the queuing is not the result of intersection operations but is associated with NBK-BR gate capacity constraints, the gate-related congestion is not reflected in this analysis. Therefore, this analysis acknowledges the ongoing impacts of NBK-BR gate queueing but focuses on traffic operations and capacity constraints at public street intersections, consistent with GMA requirements for Transportation Element certification.

Some study intersections may appear to operate with higher delay than indicated in the results of this analysis. However, queuing related to NBK-BR gate operations is not reflective of capacity constraints at nearby intersections in Bremerton.

[1] https://www.bremertonwa.gov/1167/Naval-Ave-Bicycle-Pedestrian-Enhancement
[2] https://www.bremertonwa.gov/1342/6th-Street-Active-Transportation-Improve

TRAVEL DEMAND FORECASTING

Development Forecasts

Pipeline development was verified by City staff and included projects which were permitted or under construction as of January 2024. Pipeline projects consist of a total of 1,220 new dwelling units (DU) and 223,000 square feet (sf) of commercial, industrial, and institutional development citywide. Pipeline development is expected to generate a total of 501 new vehicle trips during the AM peak hour and 786 new vehicle trips during the PM peak hour of travel.

Long-range 2044 development forecasts were provided by City staff and included 9,027 new dwelling units and 15,757 new employees citywide. Long-range growth is anticipated to generate 9,077 new vehicle trips during the AM peak hour and 12,512 new vehicle trips during the PM peak hour. The 2044 development forecast is summarized in **Table 2**.

Table 2. 2044 Travel Demand Growth

Scenario	AM Peak Hour		PM Peak Hour	
	Trip Ends	Growth[1]	Trip Ends	Growth[1]
Existing (2023)	20,147	-	30,606	-
Pipeline (2030)	20,648	+2.5%	31,392	+2.6%
Long-Range (2044)	29,224	+45.1%	43,118	+40.9%

[1]Vehicle trip growth relative to 2023

Traffic Volume Forecasts

Traffic volume forecasts were calculated by entering development forecasts to the Bremerton travel demand model. AM peak hour and PM peak hour intersection volume forecasts for each study intersection are summarized in **Table 3**.

Table 3. Peak Hour Intersection Volume Forecasts

ID	Name	AM Peak Hour Volume (vph)			PM Peak Hour Volume (vph)		
		2023	2030	2044	2023	2030	2044
City of Bremerton Intersections							
13	6th Street & N Montgomery Ave	891	+69	+172	1,531	+94	+239
14	6th Street & Naval Ave	1,168	+121	+204	1,912	+230	+171
16	6th Street & Veneta Ave	812	+0	+6	1,445	+31	+128
17	6th Street & Warren Ave	1,666	+175	+440	2,353	+77	+385
18	6th Street & Park Ave	603	+61	+364	1,189	+110	+479
19	6th Street & Pacific Ave	397	+68	+345	892	+72	+365
20	6th Street & Washington Ave	574	+173	+279	1,328	+220	+314
30	11th Street & N Callow Ave	1,391	+129	+312	2,246	+314	+699
31	11th Street & Naval Ave	1,395	+226	+367	2,101	+324	+767
32	11th Street & High Ave	1,435	+147	+315	2,059	+234	+624
33	11th Street & Park Ave	594	+73	+235	1,162	+200	+490
34	Washington Ave & Manette Bridge	753	+207	+356	1,694	+464	+570

ID	Name	AM Peak Hour Volume (vph)			PM Peak Hour Volume (vph)		
		2023	2030	2044	2023	2030	2044
43	Burwell St & Washington Ave	420	+56	+174	809	+101	+258
46	Werner Rd & Union Ave/Auto Center Blvd	662	+13	+200	1,577	+116	+245
47	Werner/Loxie Eagans & Auto Center Blvd	1,151	+22	+190	1,979	+11	+103
60	Perry Ave & Sheridan Rd	535	+13	+52	793	+21	+59
67	Perry Ave & 11th Street	211	+48	+98	485	+95	+175
70	Wheaton Way & Lebo Blvd/ Cherry Ave	302	+47	+346	681	+58	+320
74	Manette Bridge/ Wheaton Way & Harkins St	720	+156	+305	1,414	+217	+400
85	Lebo Blvd & Sheridan Rd	306	+3	+62	700	+40	+124
88	11th Street & Pacific Ave	463	+94	+283	894	+240	+416
137	Wheaton Way & Broad St	1,947	+103	+315	3,235	+145	+378
307	Naval Ave & 15th Street	314	+27	+37	494	+40	+91
WSDOT Intersections in City Limits							
2	Kitsap Way (SR 310) & SR 3 SB Off-Ramp	1,526	+43	+291	3,103	+436	+1,019
3	Kitsap Way (SR 310) & SR 3 NB Ramp	2,011	+95	+315	3,280	+397	+965
4	Kitsap Way (SR 310) & Shorewood Dr	1,834	+88	+297	3,103	+223	+662
5	Kitsap Way (SR 310) & Ostrich Bay Way	1,841	+81	+269	3,024	+262	+761
6	Kitsap Way (SR 310) & Oyster Bay Ave	1,875	+80	+258	2,991	+250	+751
7	Kitsap Way (SR 310) & National Ave	2,186	+76	+289	3,491	+247	+726
8	Kitsap Way (SR 310) & Marine Dr	2,285	+69	+299	3,635	+211	+684
9	Kitsap Way (SR 310) & Corbett Dr	1,996	+83	+280	3,185	+319	+689
10	Kitsap Way (SR 310) & 11th St	1,316	+548	+713	2,917	+747	+1,089
11	Kitsap Way (SR 310) & Wycoff Ave	859	+15	+75	1,500	+40	+221
12	Kitsap Way (SR 310)/6th St & Callow Ave	1,177	+41	+145	1,921	+180	+295
21	Warren Ave (SR 310) & Burwell St (SR 304)	1,456	+185	+257	1,737	+121	+447
22	Warren Ave (SR 303) & 11th Street	2,586	+145	+416	3,684	+274	+801
23	Warren Ave (SR 303) & 13th Street	2,467	+48	+414	3,403	+130	+489
24	Warren Ave (SR 303) & 16th Street	2,628	+39	+401	3,520	+96	+481
25	Wheaton Way (SR 303) & Sheridan Rd	2,445	+106	+493	3,643	+135	+611
26	Wheaton Way (SR 303) & Sylvan Way	2,300	+107	+409	3,600	+123	+457
27	Wheaton Way (SR 303) & Hollis Street	1,864	+103	+304	3,172	+149	+375
28	Wheaton Way (SR 303) & Riddell Rd	2,213	+121	+399	3,734	+225	+598
35	Burwell St (SR 304) & N Callow Ave	1,908	+84	+346	2,420	+105	+417
36	Burwell St (SR 304) & N Montgomery Ave	1,574	+169	+356	1,983	+257	+674
37	Burwell St (SR 304) & Naval Ave	1,861	+331	+385	2,452	+478	+799
38	Burwell St (SR 304) & State Ave	1,350	+166	+213	1,635	+136	+592
40	Burwell St (SR 304) & Park Ave	602	+37	+93	1,088	+5	+296
42	Burwell St (SR 304) & Pacific Ave	718	+81	+204	946	+71	+376

ID	Name	AM Peak Hour Volume (vph)			PM Peak Hour Volume (vph)		
		2023	2030	2044	2023	2030	2044
44	Charleston Blvd (SR 304) & Farragut Ave	1,973	+58	+255	2,913	+90	+613
76	SR 303 SB Ramp & Callahan Dr	150	+0	+62	191	+1	+114
93	SR 3 NB Ramps & Austin Dr	788	+28	+134	874	+27	+111
94	SR 3 SB Ramps & Austin Dr	486	+31	+181	986	+95	+56
104	Loxie Eagans Blvd & SR 3 SB Ramps	1,367	+22	+262	2,020	+22	+128
105	Loxie Eagans Blvd & SR 3 NB ramps	1,439	+37	+226	2,168	+99	+306
216	SR 3 & Imperial Way	1,215	+138	+1,091	1,601	+132	+1,232
Key Intersections Outside City Limits							
45	Charleston Blvd (SR 304) & Charleston Beach	2,106	+59	+217	2,960	+41	+495
48	Loxie Eagans Blvd & National Ave	1,034	+34	+148	1,813	+67	+266
49	SR 3 SB & Belfair Valley/Sherman Heights	220	+129	+170	1,054	+27	+97
202	SR 16 Spur & SR 3	1,864	+373	+1,391	2,419	+731	+1,410
328	SR 3 & Airport Rd	1,318	+144	+1,460	1,593	+156	+1,445

Segment Capacity Analysis

2044 travel demand forecasts were compared to street segment capacity calculated by the travel demand model to calculate the volume-to-capacity (v/c) ratio for each collector and arterial street segment in Bremerton. Vehicle mobility in an urban transportation network is typically constrained at the intersection level; however, street segment v/c can be a helpful visual method of identifying segments which are more likely to operate with intersection operations deficiencies. Maps of 2044 AM and PM peak hour street segment v/c ratios are included in Attachment 1.

INTERSECTION LOS RESULTS

Intersection LOS results for all study intersections are summarized in **Table 4**. Intersections with existing LOS deficiencies are highlighted. Full intersection capacity reports are provided in Attachment 1.

Table 4. Intersection LOS at Functionally Classified Intersections

ID	Name	2023 Control[1]	LOS Std[2]	AM Peak Hour LOS (Delay)[3]			PM Peak Hour LOS (Delay)[3]		
				2023	2030	2044	2023	2030	2044
City of Bremerton Intersections									
13	6th Street & N Montgomery Ave	Signal	E	A (2)	A (3)	A (3)	A (5)	A (8)	B (13)
14	6th Street & Naval Ave	Signal	E	B (13)	B (17)	B (18)	B (18)	D (46)	D (43)
16	6th Street & Veneta Ave	Signal	E	A (5)	A (6)	A (6)	A (7)	B (12)	B (13)
18	6th Street & Park Ave	Signal	E	A (7)	A (7)	A (9)	B (14)	B (18)	D (48)
19	6th Street & Pacific Ave	AWSC	E	A (9)	A (9)	B (12)	B (12)	B (13)	C (20)
20	6th Street & Washington Ave	Signal	E	A (7)	A (8)	A (9)	C (24)	C (23)	C (24)
30	11th Street & N Callow Ave	Signal	E	B (11)	B (11)	B (10)	B (14)	B (14)	B (16)

ID	Name	2023 Control[1]	LOS Std[2]	AM Peak Hour LOS (Delay)[3]			PM Peak Hour LOS (Delay)[3]		
				2023	2030	2044	2023	2030	2044
31	11th Street & Naval Ave	Signal	E	B (12)	B (19)	B (19)	B (13)	C (29)	C (35)
32	11th Street & High Ave	Signal	E	B (18)	B (18)	B (19)	A (6)	B (17)	B (16)
33	11th Street & Park Ave	Signal	E	A (9)	A (10)	B (10)	B (18)	C (20)	C (30)
34	Washington Ave & Manette Bridge	Signal[5]	E	B (18)	A (6)	A (6)	E (62)	B (14)	B (20)
43	Burwell St & Washington Ave	Signal	E	A (7)	A (8)	A (8)	B (11)	B (11)	B (13)
46	Werner Rd & Union Ave/Auto Center	Signal	E	B (11)	B (11)	B (12)	D (36)	D (48)	D (44)
47	Werner/Loxie Eagans & Auto Center	Signal	E	A (9)	A (9)	A (9)	B (14)	B (14)	B (14)
60	Perry Ave & Sheridan Rd	TWSC	E	B (14)	B (14)	C (15)	C (18)	C (19)	C (20)
67	Perry Ave & 11th Street	AWSC	E	A (8)	A (8)	A (8)	A (9)	A (10)	B (11)
70	Wheaton Way & Lebo Blvd/ Cherry Ave	AWSC	E	A (9)	A (9)	B (12)	B (11)	B (11)	B (14)
74	Manette Bridge/ Wheaton Way & Harkins St	RAB	E	A (7)	A (7)	A (7)	A (7)	A (8)	A (8)
85	Lebo Blvd & Sheridan Rd	TWSC	E	B (10)	B (10)	B (10)	B (13)	B (13)	B (13)
88	11th Street & Pacific Ave	AWSC	E	A (10)	B (10)	B (12)	B (13)	C (21)	E (39)
307	Naval Ave & 15th Street	Signal	D	A (6)	A (6)	A (6)	A (6)	A (6)	A (6)
WSDOT Intersections in City Limits									
2	Kitsap Way (SR 310) & SR 3 SB Off-Ramp	Signal	D	C (35)	C (35)	D (39)	D (44)	D (49)	F (86)
3	Kitsap Way (SR 310) & SR 3 NB Ramp	Signal	D	B (17)	B (17)	B (18)	B (18)	C (23)	D (36)
4	Kitsap Way (SR 310) & Shorewood Dr	Signal	D	B (17)	B (17)	B (16)	B (16)	B (19)	B (14)
5	Kitsap Way (SR 310) & Ostrich Bay Ave	Signal	D	B (16)	B (15)	B (14)	C (24)	A (9)	B (16)
6	Kitsap Way (SR 310) & Oyster Bay Ave	Signal	D	A (4)	A (4)	A (4)	A (5)	A (5)	A (6)
7	Kitsap Way (SR 310) & National Ave	Signal	D	C (21)	C (21)	C (23)	C (30)	C (32)	D (40)
8	Kitsap Way (SR 310) & Marine Dr	Signal	D	D (45)	D (44)	E (62)	E (69)	D (53)	E (72)
9	Kitsap Way (SR 310) & Corbett Dr	TWSC	D	C (18)	D (27)	F (262)	C (20)	F (183)	F (>300)
10	Kitsap Way (SR 310) & 11th St	Signal	D	B (14)	B (19)	B (15)	B (19)	C (20)	C (23)
11	Kitsap Way (SR 310) & Wycoff Ave	Signal	D	A (6)	A (6)	A (5)	A (5)	A (6)	A (10)
12	Kitsap Way (SR 310)/6th St & Callow Ave	Signal	D	B (16)	B (16)	B (16)	B (19)	C (32)	C (22)
17	Warren Ave (SR 303) & 6th Street	Signal	E	B (18)	B (19)	C (22)	C (30)	D (37)	D (40)
21	Warren Ave (SR 303) & Burwell St (SR 304)	Signal	D	C (34)	D (35)	D (41)	D (45)	E (56)	F (82)

ID	Name	2023 Control[1]	LOS Std[2]	AM Peak Hour LOS (Delay)[3]			PM Peak Hour LOS (Delay)[3]		
				2023	2030	2044	2023	2030	2044
22	Warren Ave (SR 303) & 11th Street	Signal	E*	C (25)	C (25)	C (31)	E (70)	D (54)	E (59)
23	Warren Ave (SR 303) & 13th Street	Signal	E*	B (19)	B (20)	C (22)	A (5)	A (6)	A (7)
24	Warren Ave (SR 303) & 16th Street	Signal	E*	A (8)	A (8)	A (9)	A (8)	A (7)	A (8)
25	Wheaton Way (SR 303) & Sheridan Rd	Signal	E*	D (52)	D (51)	D (46)	E (58)	E (63)	F (87)
26	Wheaton Way (SR 303) & Sylvan Way	Signal	E*	C (21)	C (20)	C (21)	C (29)	C (28)	C (30)
27	Wheaton Way (SR 303) & Hollis Street	Signal	E*	A (2)	A (2)	A (2)	A (7)	A (7)	A (8)
28	Wheaton Way (SR 303) & Riddell Rd	Signal	E*	C (27)	C (28)	C (29)	D (47)	D (48)	E (60)
35	Burwell St (SR 304) & N Callow Ave	Signal	D	D (44)	C (33)	C (31)	D (35)	C (34)	C (32)
36	Burwell St (SR 304) & N Montgomery Ave	Signal	D	A (5)	A (5)	A (5)	A (5)	A (6)	B (10)
37	Burwell St (SR 304) & Naval Ave	Signal	D	B (20)	B (20)	C (20)	C (29)	D (38)	D (52)
38	Burwell St (SR 304) & State Ave	Signal	D	A (6)	A (6)	A (8)	A (9)	A (10)	B (19)
40	Burwell St (SR 304) & Park Ave	Signal	D	A (4)	A (4)	A (5)	A (6)	A (6)	A (7)
42	Burwell St (SR 304) & Pacific Ave	Signal	D	A (8)	A (8)	A (9)	A (8)	A (9)	B (11)
44	Charleston Blvd (SR 304) & Farragut Ave	Signal	D	B (17)	B (17)	B (18)	C (25)	C (27)	C (33)
76	SR 303 SB Ramp & Callahan Dr	TWSC	E	A (9)	A (9)	A (9)	A (9)	A (9)	A (9)
93	SR 3 NB Ramps & Austin Dr	TWSC	D	B (11)	B (11)	B (13)	B (12)	B (12)	C (16)
94	SR 3 SB Ramps & Austin Dr	TWSC	D	C (17)	C (17)	C (23)	D (26)	D (30)	D (28)
104	Loxie Eagans Blvd & SR 3 SB Ramps	TWSC	D	F (77)	F (109)	F (>300)	F (>300)	F (>300)	F (>300)
105	Loxie Eagans Blvd & SR 3 NB ramps	Signal	D	A (8)	A (9)	A (10)	B (12)	B (12)	B (14)
137	Wheaton Way (SR 303) & Broad St	Signal	E	A (6)	A (6)	A (5)	B (10)	B (11)	B (11)
216	SR 3 & Imperial Way	Signal	D	B (11)	B (18)	E (65)	E (74)	C (31)	E (75)
Key Intersections Outside City Limits									
45	Charleston Blvd (SR 304) & Charleston Beach	Signal	D	A (9)	A (10)	A (10)	C (22)	C (22)	C (24)
48	Loxie Eagans Blvd & National Ave	Signal	*4	C (23)	C (24)	C (29)	E (77)	E (80)	F (92)
49	SR 3 SB & Belfair Valley/Sherman Heights	AWSC	D	A (8)	A (8)	A (8)	E (38)	F (66)	F (61)
202	SR 3 & Sam Christopherson Ave	Signal	D	D (40)	D (49)	F (191)	E (66)	F (>300)	F (>300)
328	SR 3 & Airport Way	RAB	E	A (6)	A (6)	F (97)	A (9)	A (6)	F (171)

E*: LOS E/Mitigated standard; LOS-deficient intersections are highlighted
[1]AWSC = all-way stop control; RAB = roundabout; Signal = signal control; TWSC = minor-approach stop control
[2]Minimum intersection Level of Service standard

ID	Name	2023 Control[1]	LOS Std[2]	AM Peak Hour LOS (Delay)[3]			PM Peak Hour LOS (Delay)[3]		
				2023	2030	2044	2023	2030	2044

[3]Intersection Level of Service and delay. For signalized, all-way stop, and roundabout intersections, intersection average delay is reported. For two-way stop-control intersections, delay is reported for the worst (highest-delay) movement.
[4]Kitsap County has not adopted a minimum intersection LOS standard
[5]Washington Ave & Manette Bridge roundabout was analyzed as a signal in 2023 and as a roundabout in 2030 and 2044.

Seven intersections within city limits are anticipated to operate below their minimum adopted LOS standard by 2044. These include existing (2023) deficiencies at three locations. Three WSDOT intersections on key access routes outside Bremerton city limits will operate with high delay and LOS deficiencies by 2044. Possible mitigation strategies for LOS-deficient intersections are described in the following section.

In addition to the LOS-deficient intersections described above, the intersection of Loxie Eagans Blvd & National Avenue will operate at LOS F by 2044. This intersection is in Kitsap County, which currently has no adopted minimum intersection LOS standard. Delay and queuing at this intersection may impact mobility at the Loxie Eagans Blvd interchange to the west, which is within city limits.

Seven intersections in Bremerton are anticipated to operate at their minimum adopted LOS standard by 2044. While these intersections will satisfy overall intersection LOS standards, individual intersection approaches or lanes may operate overcapacity during periods of peak travel demand. While capacity improvements are not required to maintain transportation concurrency at these locations, improvement projects may nevertheless be programmed to mitigate other operational or safety deficiencies. It is recommended that these intersections be monitored through the GMA-required transportation concurrency management process. If LOS deficiencies are triggered by ongoing development, mitigation should be identified.

Intersections which are anticipated to operate at their minimum LOS standards by 2044 include:

- 11th Street & Pacific Ave (AM LOS B/PM LOS E) (intersection #88)
- Kitsap Way (SR 310) & SR 3 northbound ramp (LOS B/D) (#3)
- Kitsap Way (SR 310) & National Ave (LOS C/D) (#7)
- Warren Ave (SR 303) & 11th Street (LOS C/E) (#22)
- Wheaton Way (SR 303) & Riddell Rd (LOS C/E) (#28)
- Burwell St (SR 304) & Naval Ave (LOS C/D) (#37)
- SR 3 SB ramps & Austin Dr (LOS C/D) (#94)

MITIGATION STRATEGIES

Existing Level of Service Policy

This section describes transportation improvement strategies which may be implemented to mitigate anticipated intersection LOS deficiencies through the 2044 analysis horizon. Mitigation strategies were identified through review of intersection operations model results, intersection and corridor context, WSDOT *Design Manual* guidance, and review of previous transportation planning studies including the *SR 16 Tacoma Narrows Bridge to SR 3 Congestion Study* (WSDOT 2018), *SR 303 Corridor Study* (Parametrix 2021), *Joint Compatibility Transportation Plan* (Parametrix 2023), and *West Kitsap Way Planning Study* (City of Bremerton 2023).

The mitigation strategies identified in this section are intended to guide long-range citywide transportation and capital planning efforts. The final selection of intersection improvement strategies will require more detailed analysis, and improvements on WSDOT facilities will require coordination with WSDOT, including following the WSDOT Intersection Control Evaluation (ICE) process.

Suggested mitigation strategies are summarized in **Table 5** and described below.

Table 5. Suggested Transportation Improvement Projects to Mitigate LOS Deficiencies

ID	Name	Deficiency Horizon	Possible Mitigation
2	Kitsap Way (SR 310) & SR 3 SB Off-Ramp	2044	Rechannelize north and south legs within existing ROW (West Kitsap Way Planning Study) (Comp Plan #8.1.50)
8	Kitsap Way (SR 310) & Marine Dr	2023	Near-term: Implement adaptive signal control. Long-term (2044): Convert westbound RT lane to peak-usage through-right lane continuing to National Ave. Alternatively, a new multilane roundabout. (#8.1.57)
9	Kitsap Way (SR 310) & Corbett Dr	2030	New multi-lane roundabout with two lanes in each direction of Kitsap Way (SR 310)
21	Warren Ave (SR 303) & Burwell St (SR 304)	2030	Implement adaptive signal control and close south leg driveway (SR 303 Corridor Study) (#8.1.58)
25	Wheaton Way (SR 303) & Sheridan Rd	2044	Implement adaptive signal control (SR 303 Corridor Study) (#8.1.28)
104	Loxie Eagans Blvd & SR 3 SB off-ramp	2023	Possible WSDOT-funded signal or roundabout; not subject to GMA concurrency requirements.
216	SR 3 & Imperial Way	2023	Possible developer- or WSDOT-funded improvement; not subject to GMA concurrency requirements.

Intersection LOS deficiencies will occur along three WSDOT arterial corridors in Bremerton: Kitsap Way (SR 310), Wheaton Way/Warren Avenue (SR 303), and SR 3.

Intersection LOS deficiencies and suggested mitigation strategies along Kitsap Way (SR 310) include:

- Kitsap Way (SR 310) & SR 3 southbound off-ramp will reach LOS-deficient status by 2044, operating at LOS D in the AM peak hour and LOS F in the PM peak hour. Mitigation may include rechannelization of the north (SR 3 off-ramp) leg to provide a second left-turn lane and reconfiguration of signal phasing to provide more efficient green allocation. This mitigation may be achieved within the existing intersection right-of-way and is identified as the preferred alternative at this location in the West Kitsap Way Planning Study.
- Kitsap Way (SR 310) & Marine Drive operated at LOS-deficient status in 2023. By 2044, it will operate at LOS E overall in the AM and PM peak hours. In the near-term, intersection LOS D may be achieved through implementation of adaptive signal control. Long-term mitigation may include the conversion of the westbound (Kitsap Way) right-turn lane to a through-right lane and the addition of a third westbound through lane from Marine Drive to National Drive. The inside through lane would transition into the existing left-turn lane at National Drive. This mitigation would require reconfiguration of the existing bike lane on the north side of Kitsap Way. Alternatively, mitigation may include a multi-lane roundabout.

- Kitsap Way (SR 310) & Corbett Drive will reach LOS-deficient status by 2044, operating at LOS F in the AM and PM peak hours as a result of delay on the stop-controlled approaches. Right-in/right-out turn restrictions may be considered at this location. However, turn restrictions would limit access to residential development to the north of Kitsap Way. Multi-lane roundabout control will allow the intersection to maintain the minimum LOS D standard while maintaining to and from residential development to the north of Kitsap Way.

Intersection LOS deficiencies and suggested mitigation strategies along Wheaton Way/Warren Avenue (SR 303) include:

- Warren Ave (SR 303) & Burwell St (SR 304) will reach LOS-deficient status by 2044, operating at LOS D in the AM peak hour and LOS E in the PM peak hour. The minimum LOS standard for SR 304 is LOS D. The south intersection leg currently provides access to a parking lot. Mitigation may include closure of the parking lot access, which will allow more efficient allocation of signal green time to the other three approaches. This intersection was identified for improvement in the SR 303 Corridor Study.
- Wheaton Way (SR 303) & Sheridan Rd will reach LOS-deficient status by 2044, operating at LOS D in the AM peak hour and LOS F in the PM peak hour. The SR 303 Corridor Study preferred alternative recommends adaptive signal control at this location.

Intersection LOS deficiencies and suggested mitigation strategies along SR 3 include:

- SR 3 southbound off-ramp & Loxie Eagans Blvd operated at LOS-deficient status in 2023. By 2044, it will operate at LOS F in the AM and PM peak hours. Southbound off-ramp demand will exceed the available capacity and the average PM peak hour ramp delay will exceed 5 minutes per vehicle. Mitigation may include a new traffic signal or multi-lane roundabout, as identified in the SR 16 Tacoma Narrows Bridge to SR 3 Congestion Study. Further analysis will be required to determine the preferred intersection configuration. This intersection is on a WSDOT facility and is not subject to GMA concurrency requirements. Intersection improvements may be led by WSDOT.
- SR 3 & Imperial Way operated at LOS-deficient status in 2023. The anticipated buildout of the Puget Sound Industrial Center (PSIC) by 2044 will require intersection improvements to maintain mobility and property access to local and regional trips using this intersection. Mitigation may include a multi-lane roundabout, as identified in the SR 16 Tacoma Narrows Bridge to SR 3 Congestion Study. This intersection is on a WSDOT facility and is not subject to GMA concurrency requirements. Intersection improvements may be led by WSDOT.

The following intersections along SR 3 are outside Bremerton city limits but will operate with LOS deficiencies in 2044. Mitigation strategies are identified below for reference, but improvements at these intersections are not the responsibility of the City of Bremerton nor do these deficiencies trigger transportation concurrency failures. Improvement projects at these locations will be led by WSDOT.

- SR 3 & Sam Christopherson Ave operated at LOS-deficient status in 2023. By 2044, it will operate at LOS F in the AM and PM peak hours. This intersection will be significantly impacted by the anticipated buildout of PSIC, as described above. Mitigation may include a new multi-lane roundabout, as identified in the SR 16 Tacoma Narrows Bridge to SR 3 Congestion Study.

- SR 3 southbound & Belfair Valley Rd/Sherman Heights Rd operated at LOS-deficient status in 2023. By 2044, it will operate at LOS A in the AM peak hour and LOS F in the PM peak hour. The Belfair Valley Rd/Sherman Heights Rd corridor is anticipated to continue to serve as an alternate route by which drivers will avoid increasing peak period congestion along SR 3. The SR 16 Tacoma Narrows Bridge to SR 3 Congestion Study identifies this intersection as a location for a future roundabout. However, closure of the SR 3 southbound off-ramp may be preferred to improve safety by removing the possibility of queues stacking onto SR 3.
- SR 3 at Airport Way will reach LOS-deficient status by 2044, operating at LOS F in the AM and PM peak hours. The anticipated buildout of PSIC by 2044 will require intersection improvements to maintain mobility and property access to local and regional trips using this intersection. Mitigation may include widening the existing single-lane roundabout to provide two lanes in each direction of SR 3.

Long-range intersection operations forecasts were developed before and after the identified mitigation strategies for each of the LOS-deficient intersections within city limits. The 2044 intersection operations forecasts are summarized in **Table 6**. Full intersection capacity reports are provided in Attachment 1.

The identified mitigation strategies will allow each LOS-deficient intersection to satisfy its minimum LOS standard through 2044. These transportation improvement projects will be necessary to support the long-range development targets identified in the Bremerton Comprehensive Plan update.

Table 6. 2044 Mitigated Intersection LOS Results

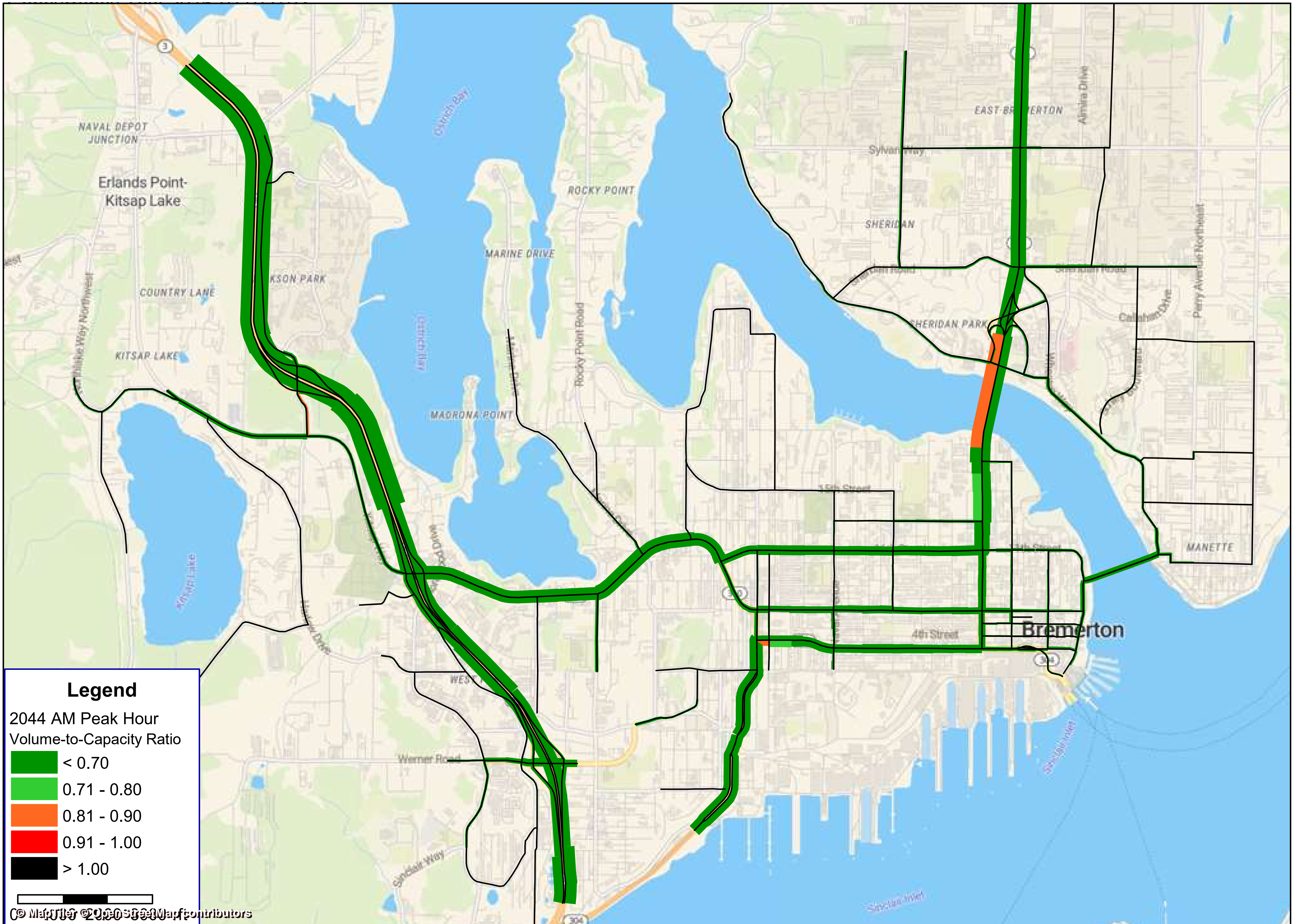
ID	Name	Control	LOS Std	2044 PM Peak Hour LOS (Delay)[1]	
				AM	PM
2	Kitsap Way (SR 310) & SR 3 SB Off-Ramp		D		
	Existing Configuration	Signal		D (39)	F (89)
	Reconfigured Intersection	Signal		C (34)	D (53)
8	Kitsap Way (SR 310) & Marine Dr		D		
	Existing Configuration	Signal		E (62)	E (74)
	With WB Peak-Usage Lane	Signal		D (43)	C (32)
	With Multi-Lane Roundabout	RAB		A (5)	A (8)
9	Kitsap Way (SR 310) & Corbett Dr		D		
	Existing Configuration	TWSC		F (262)	F (>300)
	With Multi-Lane Roundabout	RAB		A (4)	A (4)
21	Warren Ave (SR 303) & Burwell St (SR 304)		E*		
	Existing Configuration	Signal		D (41)	E (75)
	Without South Leg	Signal		C (33)	D (54)
25	Wheaton Way (SR 303) & Sheridan Rd		E*		
	Existing Configuration	Signal		D (46)	F (85)
	With Adaptive Signal Control	Signal		D (46)	E (68)
104	Loxie Eagans Blvd & SR 3 SB Ramps		D		
	Existing Configuration	TWSC		F (>300)	F (>300)
	With Signal Control	Signal		B (16)	A (3)

ID	Name	Control	LOS Std	2044 PM Peak Hour LOS (Delay)[1]	
				AM	PM
216	SR 3 & Imperial Way		D		
	Existing Configuration	Signal		E (65)	E (77)
	With Multi-Lane Roundabout	RAB		B (14)	B (17)

E*: LOS E/Mitigated standard; LOS-deficient intersections are highlighted
[1]Intersection Level of Service and delay

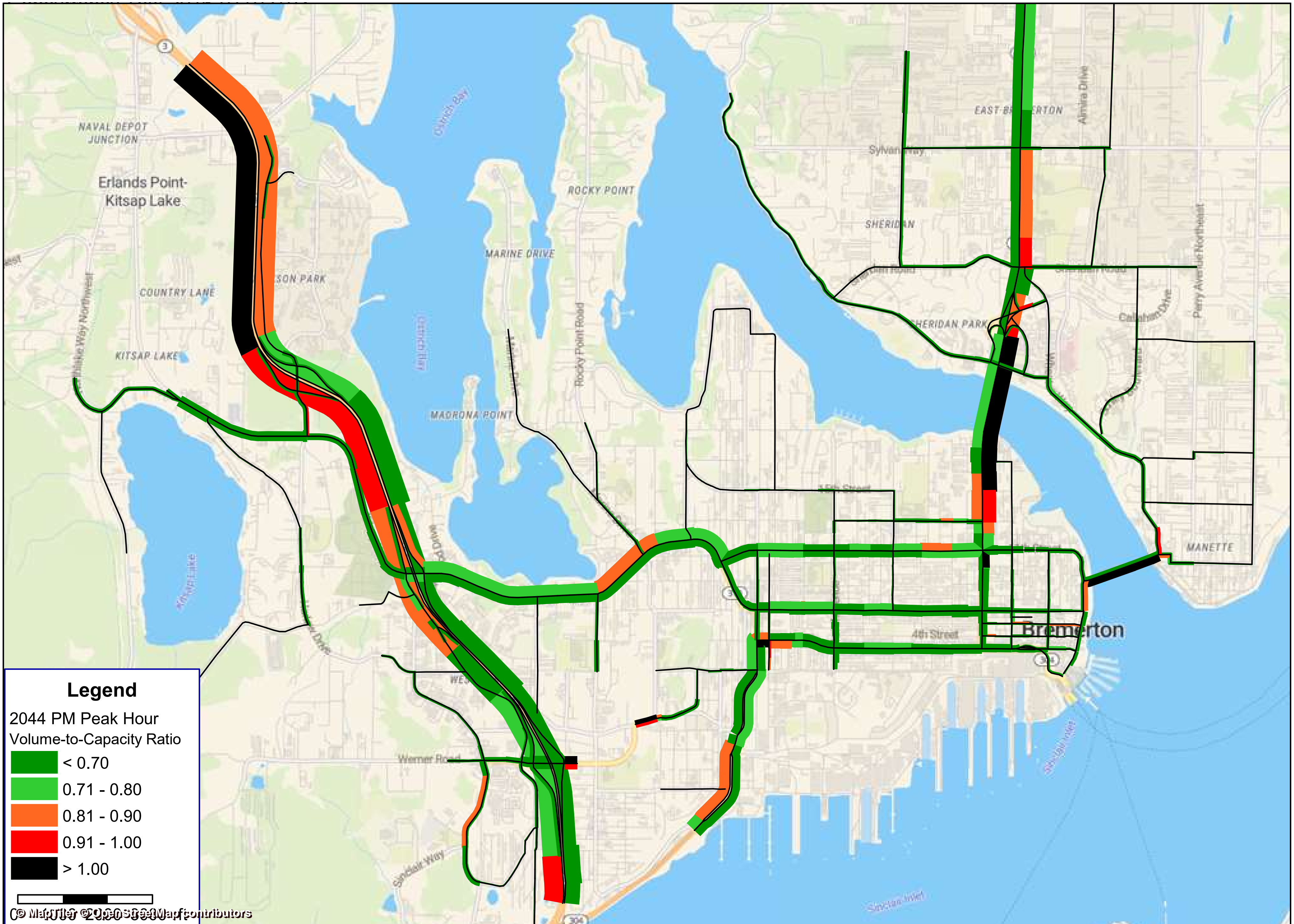
Attachment 1. 2044 Segment Volume-to-Capacity Ratio Maps
Attachment 2. Intersection Capacity Reports

Attachment 1.
2044 Segment Volume-to-Capacity Ratio Maps



2044 AM Peak Hour Arterial & Collector Volume-to-Capacity Ratio

Transportation Solutions, Inc.	Created on: 30.05.2024



2044 PM Peak Hour Arterial & Collector Volume-to-Capacity Ratio

Transportation Solutions, Inc.	Created on: 30.05.2024

Attachment 2.
Intersection Capacity Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	292	127	208	193	0	24	0	119	514	85	7
Future Volume (veh/h)	0	292	127	208	193	0	24	0	119	514	85	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1547	1547	1522	1522	0	1384	0	1384	1560	1560	1560
Adj Flow Rate, veh/h	0	340	148	242	224	0	28	0	0	669	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	5	5	7	7	0	18	0	18	4	4	4
Cap, veh/h	0	1550	691	295	1937	0	0	0		758	0	
Arrive On Green	0.00	0.53	0.53	0.18	1.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00
Sat Flow, veh/h	0	3017	1311	2812	2968	0		0		2971	0	1322
Grp Volume(v), veh/h	0	340	148	242	224	0		0.0		669	0	0
Grp Sat Flow(s),veh/h/ln	0	1470	1311	1406	1446	0				1485	0	1322
Q Serve(g_s), s	0.0	7.4	7.2	9.9	0.0	0.0				26.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.4	7.2	9.9	0.0	0.0				26.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1550	691	295	1937	0				758	0	
V/C Ratio(X)	0.00	0.22	0.21	0.82	0.12	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	1550	691	434	1937	0				1003	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.99	0.99	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.2	15.1	48.4	0.0	0.0				42.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.7	9.6	0.1	0.0				7.9	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
%ile BackOfQ(95%),veh/ln	0.0	4.5	4.0	6.5	0.1	0.0				15.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.5	15.8	58.0	0.1	0.0				50.8	0.0	0.0
LnGrp LOS	A	B	B	E	A	A				D	A	
Approach Vol, veh/h		488			466						669	
Approach Delay, s/veh		15.6			30.2						50.8	
Approach LOS		B			C						D	

Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			17.1	67.8		35.1		84.9				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			18.5	31.5		40.5		54.5				
Max Q Clear Time (g_c+I1), s			11.9	9.4		28.0		2.0				
Green Ext Time (p_c), s			0.6	3.2		2.7		1.8				

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

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] 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)	63	881	0	0	354	647	54	1	104	0	0	0
Future Volume (veh/h)	63	881	0	0	354	647	54	1	104	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1547	1547	0	0	1572	1572	1510	1510	1510			
Adj Flow Rate, veh/h	73	1024	0	0	412	0	63	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	5	5	0	0	3	3	8	8	8			
Cap, veh/h	1041	2532	0	0	506		78	1				
Arrive On Green	1.00	1.00	0.00	0.00	0.28	0.00	0.06	0.06	0.00			
Sat Flow, veh/h	1474	3017	0	0	3066	1332	1416	22	1279			
Grp Volume(v), veh/h	73	1024	0	0	412	0	64	0	0			
Grp Sat Flow(s),veh/h/ln	1474	1470	0	0	1494	1332	1439	0	1279			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	15.4	0.0	5.3	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	15.4	0.0	5.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	1041	2532	0	0	506		79	0				
V/C Ratio(X)	0.07	0.40	0.00	0.00	0.81		0.81	0.00				
Avail Cap(c_a), veh/h	1041	2532	0	0	1693		336	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	0.92	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	41.2	0.0	56.1	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	12.4	0.0	17.0	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			
%ile BackOfQ(95%),veh/ln	0.0	0.2	0.0	0.0	9.7	0.0	4.1	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	53.7	0.0	73.1	0.0	0.0			
LnGrp LOS	A	A	A	A	D		E	A				
Approach Vol, veh/h		1097			412			64				
Approach Delay, s/veh		0.3			53.7			73.1				
Approach LOS		A			D			E				
Timer - Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				108.4		11.6	83.0	25.3				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				82.0		28.0	9.0	68.0				
Max Q Clear Time (g_c+I1), s				2.0		7.3	2.0	17.4				
Green Ext Time (p_c), s				9.5		0.2	0.1	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR, WBR] 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)	33	893	28	3	830	12	13	2	1	42	0	63
Future Volume (veh/h)	33	893	28	3	830	12	13	2	1	42	0	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		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	1560	1560	1560	1560	1560	1560	1447	1447	1447	1585	1585	1585
Adj Flow Rate, veh/h	38	1015	0	3	943	14	15	2	1	48	0	72
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	4	4	4	13	13	13	2	2	2
Cap, veh/h	284	1105		720	2240	998	103	11	3	172	0	105
Arrive On Green	0.07	0.75	0.00	0.83	1.00	1.00	0.08	0.08	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1485	2964	1322	1485	2964	1320	609	138	44	1418	0	1333
Grp Volume(v), veh/h	38	1015	0	3	943	14	18	0	0	48	0	72
Grp Sat Flow(s),veh/h/ln	1485	1482	1322	1485	1482	1320	791	0	0	1418	0	1333
Q Serve(g_s), s	2.0	33.2	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s	2.0	33.2	0.0	0.0	0.0	0.0	5.1	0.0	0.0	3.8	0.0	6.3
Prop In Lane	1.00		1.00	1.00		1.00	0.83		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	284	1105		720	2240	998	118	0	0	172	0	105
V/C Ratio(X)	0.13	0.92		0.00	0.42	0.01	0.15	0.00	0.00	0.28	0.00	0.68
Avail Cap(c_a), veh/h	354	1544		720	2240	998	348	0	0	436	0	355
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.00	0.91	0.91	0.91	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	13.8	0.0	4.5	0.0	0.0	53.9	0.0	0.0	52.7	0.0	53.8
Incr Delay (d2), s/veh	0.2	12.2	0.0	0.0	0.5	0.0	0.6	0.0	0.0	0.9	0.0	7.6
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(95%),veh/ln	1.3	10.0	0.0	0.0	0.3	0.0	1.0	0.0	0.0	2.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	26.0	0.0	4.5	0.5	0.0	54.5	0.0	0.0	53.5	0.0	61.4
LnGrp LOS	C	C		A	A	A	D	A	A	D	A	E
Approach Vol, veh/h		1053			960			18			120	
Approach Delay, s/veh		26.0			0.5			54.5			58.2	
Approach LOS		C			A			D			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		14.5	55.3	50.3		14.5	9.3	96.2
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		32.0	10.0	* 63		32.0	10.0	62.5
Max Q Clear Time (g_c+I1), s		7.1	2.0	35.2		8.3	4.0	2.0
Green Ext Time (p_c), s		0.0	0.0	9.6		0.5	0.0	10.4

Intersection Summary			
HCM 6th Ctrl Delay			16.7
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	933	19	16	873	0	66	0	13	0	0	0
Future Volume (veh/h)	0	933	19	16	873	0	66	0	13	0	0	0
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		1.00	0.99		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	1560	1560	1560	1572	1572	1572	1522	1522	1522	1610	1610	1610
Adj Flow Rate, veh/h	0	1060	22	18	992	0	75	0	15	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	0	0	0
Cap, veh/h	745	2304	1006	249	1086	0	156	0	120	0	114	0
Arrive On Green	0.00	1.00	1.00	0.05	0.73	0.00	0.07	0.00	0.07	0.00	0.00	0.00
Sat Flow, veh/h	1485	2964	1294	1497	3066	0	1350	0	1279	0	1610	0
Grp Volume(v), veh/h	0	1060	22	18	992	0	75	0	15	0	0	0
Grp Sat Flow(s),veh/h/ln	1485	1482	1294	1497	1494	0	1350	0	1279	0	1610	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	32.3	0.0	6.6	0.0	1.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.0	32.3	0.0	6.6	0.0	1.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	745	2304	1006	249	1086	0	156	0	120	0	114	0
V/C Ratio(X)	0.00	0.46	0.02	0.07	0.91	0.00	0.48	0.00	0.13	0.00	0.00	0.00
Avail Cap(c_a), veh/h	745	2304	1006	340	1531	0	431	0	381	0	443	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	0.92	0.92	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	26.0	14.8	0.0	54.8	0.0	49.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.1	12.2	0.0	2.3	0.0	0.5	0.0	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(95%),veh/ln	0.0	0.3	0.0	0.6	10.3	0.0	4.2	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	26.1	27.0	0.0	57.1	0.0	50.4	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	C	A	E	A	D	A	A	A
Approach Vol, veh/h		1082			1010			90			0	
Approach Delay, s/veh		0.6			27.0			56.0			0.0	
Approach LOS		A			C			E				

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		13.5	57.3	49.1		13.5	7.7	98.8
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		33.0	10.0	* 62		33.0	10.0	61.5
Max Q Clear Time (g_c+I1), s		8.6	0.0	34.3		0.0	3.0	2.0
Green Ext Time (p_c), s		0.4	0.0	9.3		0.0	0.0	12.5

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

* 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)	909	23	33	880	50	59
Future Volume (veh/h)	909	23	33	880	50	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1572	1572	1585	1585	1560	1560
Adj Flow Rate, veh/h	1045	26	38	1011	57	68
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	2	2	4	4
Cap, veh/h	2306	1006	521	2558	100	136
Arrive On Green	1.00	1.00	0.07	1.00	0.07	0.07
Sat Flow, veh/h	3066	1304	1509	3091	1485	1322
Grp Volume(v), veh/h	1045	26	38	1011	57	68
Grp Sat Flow(s),veh/h/ln	1494	1304	1509	1506	1485	1322
Q Serve(g_s), s	0.0	0.0	0.5	0.0	4.5	5.8
Cycle Q Clear(g_c), s	0.0	0.0	0.5	0.0	4.5	5.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2306	1006	521	2558	100	136
V/C Ratio(X)	0.45	0.03	0.07	0.40	0.57	0.50
Avail Cap(c_a), veh/h	2306	1006	605	2558	421	422
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.92	0.92	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	1.8	0.0	54.3	50.9
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.4	5.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.2	0.3	3.3	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.6	0.0	1.9	0.4	59.3	53.7
LnGrp LOS	A	A	A	A	E	D
Approach Vol, veh/h	1071			1049	125	
Approach Delay, s/veh	0.6			0.5	56.3	
Approach LOS	A			A	E	

Timer - Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			9.3	97.6		13.1		106.9
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			11.0	60.0		34.0		76.0
Max Q Clear Time (g_c+I1), s			2.5	2.0		7.8		2.0
Green Ext Time (p_c), s			0.0	12.2		0.4		11.6

Intersection Summary			
HCM 6th Ctrl Delay			3.6
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	833	97	206	868	1	56	0	197	0	1	1
Future Volume (veh/h)	0	833	97	206	868	1	56	0	197	0	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1572	1572	1572	1522	1522	1522	1610	1610	1610
Adj Flow Rate, veh/h	0	915	0	226	954	1	62	0	216	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	0	0	0
Cap, veh/h	1	999		544	2260	2	310	0	240	0	137	137
Arrive On Green	0.00	0.67	0.00	0.73	1.00	1.00	0.19	0.00	0.19	0.00	0.19	0.19
Sat Flow, veh/h	1485	2964	1322	1497	3062	3	1340	0	1284	0	735	735
Grp Volume(v), veh/h	0	915	0	226	465	490	62	0	216	0	0	2
Grp Sat Flow(s),veh/h/ln	1485	1482	1322	1497	1494	1572	1340	0	1284	0	0	1471
Q Serve(g_s), s	0.0	31.6	0.0	7.1	0.0	0.0	4.7	0.0	19.7	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	31.6	0.0	7.1	0.0	0.0	4.8	0.0	19.7	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.50
Lane Grp Cap(c), veh/h	1	999		544	1103	1160	310	0	240	0	0	275
V/C Ratio(X)	0.00	0.92		0.42	0.42	0.42	0.20	0.00	0.90	0.00	0.00	0.01
Avail Cap(c_a), veh/h	130	1445		544	1103	1160	401	0	326	0	0	374
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.89	0.00	0.84	0.84	0.84	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.1	0.0	11.4	0.0	0.0	41.7	0.0	47.7	0.0	0.0	39.7
Incr Delay (d2), s/veh	0.0	13.0	0.0	0.4	1.0	0.9	0.3	0.0	21.5	0.0	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(95%),veh/ln	0.0	11.6	0.0	3.5	0.6	0.6	2.9	0.0	12.2	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.1	0.0	11.8	1.0	0.9	42.0	0.0	69.2	0.0	0.0	39.7
LnGrp LOS	A	C		B	A	A	D	A	E	A	A	D
Approach Vol, veh/h		915			1181			278			2	
Approach Delay, s/veh		31.1			3.0			63.2			39.7	
Approach LOS		C			A			E			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.9	48.1	44.9		26.9	0.0	93.1
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		30.5	17.5	58.5		30.5	10.5	65.5
Max Q Clear Time (g_c+I1), s		21.7	9.1	33.6		2.1	0.0	2.0
Green Ext Time (p_c), s		0.7	0.4	6.9		0.0	0.0	7.3

Intersection Summary			
HCM 6th Ctrl Delay			20.9
HCM 6th LOS			C

Notes

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)	57	925	41	29	896	37	47	26	53	89	21	132
Future Volume (veh/h)	57	925	41	29	896	37	47	26	53	89	21	132
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	0.98		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	1560	1560	1560	1572	1572	1572	1572	1572	1572	1560	1560	1560
Adj Flow Rate, veh/h	62	1005	45	32	974	40	51	28	58	97	23	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	3	3	3	3	3	3	4	4	4
Cap, veh/h	440	1047	452	435	1039	452	121	118	98	283	28	172
Arrive On Green	0.59	0.71	0.71	0.29	0.35	0.35	0.04	0.07	0.07	0.11	0.15	0.15
Sat Flow, veh/h	1485	2964	1280	1497	2987	1301	1497	1572	1311	1485	186	1157
Grp Volume(v), veh/h	62	1005	45	32	974	40	51	28	58	97	0	166
Grp Sat Flow(s),veh/h/ln	1485	1482	1280	1497	1494	1301	1497	1572	1311	1485	0	1343
Q Serve(g_s), s	2.2	37.1	1.3	1.9	37.9	2.5	0.0	2.0	5.1	0.0	0.0	14.4
Cycle Q Clear(g_c), s	2.2	37.1	1.3	1.9	37.9	2.5	0.0	2.0	5.1	0.0	0.0	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	440	1047	452	435	1039	452	121	118	98	283	0	199
V/C Ratio(X)	0.14	0.96	0.10	0.07	0.94	0.09	0.42	0.24	0.59	0.34	0.00	0.83
Avail Cap(c_a), veh/h	440	1111	480	435	1070	466	160	472	393	283	0	414
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)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	16.8	11.6	30.8	37.9	26.3	55.2	52.3	53.7	45.7	0.0	49.7
Incr Delay (d2), s/veh	0.2	16.4	0.3	0.1	16.4	0.4	4.9	1.0	5.6	0.7	0.0	8.7
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(95%),veh/ln	1.4	12.0	0.8	1.2	22.4	1.5	3.0	1.5	3.3	4.8	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	33.2	11.9	30.9	54.3	26.7	60.1	53.3	59.3	46.4	0.0	58.4
LnGrp LOS	B	C	B	C	D	C	E	D	E	D	A	E
Approach Vol, veh/h		1112			1046			137			263	
Approach Delay, s/veh		31.5			52.5			58.4			54.0	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	14.0	39.9	47.4	9.9	22.8	40.6	46.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	36.0	10.0	45.0	8.0	37.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	2.0	7.1	3.9	39.1	2.0	16.4	4.2	39.9
Green Ext Time (p_c), s	0.1	0.3	0.0	3.3	0.1	1.0	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	43.8
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1027	3	25	897	8	12	11	9	23	0	52
Future Vol, veh/h	15	1027	3	25	897	8	12	11	9	23	0	52
Conflicting Peds, #/hr	3	0	2	2	0	3	2	0	2	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	22	22	22	0	0	0
Mvmt Flow	16	1104	3	27	965	9	13	12	10	25	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	977	0	0	1109	0	0	1678	2169	557	1620	2168	493
Stage 1	-	-	-	-	-	-	1138	1138	-	1027	1027	-
Stage 2	-	-	-	-	-	-	540	1031	-	593	1141	-
Critical Hdwy	4.18	-	-	4.16	-	-	7.94	6.94	7.34	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.94	5.94	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.94	5.94	-	6.5	5.5	-
Follow-up Hdwy	2.24	-	-	2.23	-	-	3.72	4.22	3.52	3.5	4	3.3
Pot Cap-1 Maneuver	690	-	-	620	-	-	50	36	426	70	48	527
Stage 1	-	-	-	-	-	-	183	236	-	255	314	-
Stage 2	-	-	-	-	-	-	446	268	-	464	278	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	688	-	-	619	-	-	42	33	424	47	45	525
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	33	-	47	45	-
Stage 1	-	-	-	-	-	-	178	230	-	249	300	-
Stage 2	-	-	-	-	-	-	380	256	-	419	271	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	171.8	73.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	50	688	-	-	619	-	-	127
HCM Lane V/C Ratio	0.688	0.023	-	-	0.043	-	-	0.635
HCM Control Delay (s)	171.8	10.4	-	-	11.1	-	-	73.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.7	0.1	-	-	0.1	-	-	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	589	0	213	8	0	593
Future Volume (veh/h)	589	0	213	8	0	593
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	1560	1560	1572	1572	0	1560
Adj Flow Rate, veh/h	654	0	237	9	0	659
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	3	3	0	4
Cap, veh/h	1611	1475	1001	38	0	0
Arrive On Green	0.56	0.00	0.34	0.34	0.00	0.00
Sat Flow, veh/h	2882	1560	3013	111	0	
Grp Volume(v), veh/h	654	0	120	126	0.0	
Grp Sat Flow(s),veh/h/ln	1441	1560	1494	1552		
Q Serve(g_s), s	15.5	0.0	6.9	7.0		
Cycle Q Clear(g_c), s	15.5	0.0	6.9	7.0		
Prop In Lane	1.00			0.07		
Lane Grp Cap(c), veh/h	1611	1475	509	529		
V/C Ratio(X)	0.41	0.00	0.24	0.24		
Avail Cap(c_a), veh/h	1611	1475	509	529		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	15.1	0.0	28.3	28.4		
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	8.6	0.0	4.5	4.7		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.3	0.0	28.6	28.6		
LnGrp LOS	B	A	C	C		
Approach Vol, veh/h		654	246			
Approach Delay, s/veh		15.3	28.6			
Approach LOS		B	C			

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	73.6	46.4				120.0
Change Period (Y+Rc), s	6.5	5.5				6.5
Max Green Setting (Gmax), s	38.5	39.5				83.5
Max Q Clear Time (g_c+I1), s	17.5	9.0				0.0
Green Ext Time (p_c), s	3.1	1.7				0.0

Intersection Summary			
HCM 6th Ctrl Delay			18.9
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	594	6	15	177	8	2	8	45	10	4	1
Future Volume (veh/h)	4	594	6	15	177	8	2	8	45	10	4	1
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		0.99	0.99		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	1597	1597	1597	1610	1610	1610	1585	1585	1585	1610	1610	1610
Adj Flow Rate, veh/h	4	639	6	16	190	9	2	9	48	11	4	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	0	0	0
Cap, veh/h	1051	1301	12	748	1277	60	32	13	62	98	28	5
Arrive On Green	0.01	1.00	1.00	0.03	1.00	1.00	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1521	1580	15	1533	1523	72	21	235	1114	854	510	91
Grp Volume(v), veh/h	4	0	645	16	0	199	59	0	0	16	0	0
Grp Sat Flow(s),veh/h/ln	1521	0	1594	1533	0	1595	1370	0	0	1454	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.2	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.2	0.0	0.0	5.1	0.0	0.0	1.2	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.03		0.81	0.69		0.06
Lane Grp Cap(c), veh/h	1051	0	1313	748	0	1337	107	0	0	131	0	0
V/C Ratio(X)	0.00	0.00	0.49	0.02	0.00	0.15	0.55	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	1168	0	1313	832	0	1337	236	0	0	265	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.00	0.99	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	1.5	0.0	0.0	55.9	0.0	0.0	54.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.0	0.0	0.2	4.4	0.0	0.0	0.4	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(95%),veh/ln	0.0	0.0	0.9	0.1	0.0	0.2	3.4	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.0	1.3	1.5	0.0	0.2	60.3	0.0	0.0	54.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	D	A	A
Approach Vol, veh/h		649			215			59			16	
Approach Delay, s/veh		1.3			0.3			60.3			54.5	
Approach LOS		A			A			E			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		10.7	6.5	102.9		10.7	4.7	104.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		18.0	9.0	81.0		18.0	10.0	80.0
Max Q Clear Time (g_c+I1), s		7.1	2.2	2.0		3.2	2.1	2.0
Green Ext Time (p_c), s		0.2	0.0	5.7		0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	518	121	88	159	8	32	53	39	21	158	14
Future Volume (veh/h)	12	518	121	88	159	8	32	53	39	21	158	14
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1597	1597	1597	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	13	569	133	97	175	9	35	58	43	23	174	15
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	858	809	189	624	1031	53	124	125	93	195	201	17
Arrive On Green	0.04	1.00	1.00	0.05	0.68	0.68	0.03	0.15	0.15	0.02	0.14	0.14
Sat Flow, veh/h	1509	1236	289	1521	1506	77	1509	844	626	1521	1449	125
Grp Volume(v), veh/h	13	0	702	97	0	184	35	0	101	23	0	189
Grp Sat Flow(s),veh/h/ln	1509	0	1525	1521	0	1583	1509	0	1470	1521	0	1574
Q Serve(g_s), s	0.3	0.0	0.0	2.3	0.0	5.0	2.4	0.0	7.5	1.6	0.0	14.1
Cycle Q Clear(g_c), s	0.3	0.0	0.0	2.3	0.0	5.0	2.4	0.0	7.5	1.6	0.0	14.1
Prop In Lane	1.00		0.19	1.00		0.05	1.00		0.43	1.00		0.08
Lane Grp Cap(c), veh/h	858	0	998	624	0	1085	124	0	218	195	0	219
V/C Ratio(X)	0.02	0.00	0.70	0.16	0.00	0.17	0.28	0.00	0.46	0.12	0.00	0.86
Avail Cap(c_a), veh/h	957	0	998	678	0	1085	211	0	318	298	0	341
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)	0.87	0.00	0.87	0.99	0.00	0.99	0.84	0.00	0.84	0.96	0.00	0.96
Uniform Delay (d), s/veh	6.4	0.0	0.0	5.2	0.0	6.7	43.8	0.0	46.7	43.7	0.0	50.6
Incr Delay (d2), s/veh	0.0	0.0	3.6	0.1	0.0	0.3	0.4	0.0	1.0	0.1	0.0	10.7
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(95%),veh/ln	0.2	0.0	1.8	1.3	0.0	3.1	1.6	0.0	5.1	1.1	0.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.0	3.6	5.3	0.0	7.1	44.2	0.0	47.7	43.8	0.0	61.3
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	E
Approach Vol, veh/h		715			281			136			212	
Approach Delay, s/veh		3.7			6.4			46.8			59.4	
Approach LOS		A			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	21.8	9.8	82.5	7.0	20.7	6.1	86.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	26.0	10.0	58.0	10.0	26.0	10.0	58.0
Max Q Clear Time (g_c+I1), s	3.6	9.5	4.3	2.0	4.4	16.1	2.3	7.0
Green Ext Time (p_c), s	0.0	0.4	0.1	5.3	0.0	0.6	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	543	106	34	243	1	11	0	10	0	3	1
Future Volume (veh/h)	3	543	106	34	243	1	11	0	10	0	3	1
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		1.00	0.96		0.97	1.00		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	1585	1585	1585	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	3	603	118	38	270	1	12	0	11	0	3	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	0	0	0
Cap, veh/h	980	1057	207	722	1361	5	68	6	26	0	46	15
Arrive On Green	0.01	1.00	1.00	0.04	0.86	0.86	0.04	0.00	0.04	0.00	0.04	0.04
Sat Flow, veh/h	1509	1282	251	1521	1590	6	567	150	657	0	1146	382
Grp Volume(v), veh/h	3	0	721	38	0	271	23	0	0	0	0	4
Grp Sat Flow(s),veh/h/ln	1509	0	1533	1521	0	1596	1374	0	0	0	0	1527
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	3.5	1.0	0.0	0.0	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	0.0	3.5	1.9	0.0	0.0	0.0	0.0	0.3
Prop In Lane	1.00		0.16	1.00		0.00	0.52		0.48	0.00		0.25
Lane Grp Cap(c), veh/h	980	0	1264	722	0	1366	100	0	0	0	0	61
V/C Ratio(X)	0.00	0.00	0.57	0.05	0.00	0.20	0.23	0.00	0.00	0.00	0.00	0.07
Avail Cap(c_a), veh/h	1098	0	1264	794	0	1366	362	0	0	0	0	356
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)	0.58	0.00	0.58	0.96	0.00	0.96	0.98	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	1.0	0.0	1.5	56.2	0.0	0.0	0.0	0.0	55.5
Incr Delay (d2), s/veh	0.0	0.0	1.1	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.0	0.0	0.7	0.1	0.0	1.5	1.3	0.0	0.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.0	1.1	1.0	0.0	1.8	57.1	0.0	0.0	0.0	0.0	55.8
LnGrp LOS	A	A	A	A	A	A	E	A	A	A	A	E
Approach Vol, veh/h		724			309			23			4	
Approach Delay, s/veh		1.1			1.7			57.1			55.8	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.8	8.3	102.9		8.8	4.6	106.7				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	10.0	70.0		28.0	10.0	70.0				
Max Q Clear Time (g_c+I1), s		3.9	2.4	2.0		2.3	2.0	5.5				
Green Ext Time (p_c), s		0.1	0.0	5.5		0.0	0.0	1.5				

Intersection Summary		
HCM 6th Ctrl Delay		2.7
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	377	153	145	228	9	59	49	46	30	90	7
Future Volume (veh/h)	118	377	153	145	228	9	59	49	46	30	90	7
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		0.99	0.99		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	1585	1585	1585	1597	1597	1597	1572	1572	1572	1610	1610	1610
Adj Flow Rate, veh/h	124	397	161	153	240	9	62	52	48	32	95	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	1	1	1	3	3	3	0	0	0
Cap, veh/h	642	469	190	352	722	598	255	154	129	302	149	11
Arrive On Green	0.08	0.44	0.44	0.09	0.45	0.45	0.05	0.10	0.10	0.06	0.10	0.10
Sat Flow, veh/h	1509	1064	431	1521	1597	1323	1497	1572	1319	1533	1480	109
Grp Volume(v), veh/h	124	0	558	153	240	9	62	52	48	32	0	102
Grp Sat Flow(s),veh/h/ln	1509	0	1495	1521	1597	1323	1497	1572	1319	1533	0	1589
Q Serve(g_s), s	2.5	0.0	18.9	3.0	5.5	0.1	0.0	1.8	1.4	0.0	0.0	3.5
Cycle Q Clear(g_c), s	2.5	0.0	18.9	3.0	5.5	0.1	0.0	1.8	1.4	0.0	0.0	3.5
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	642	0	659	352	722	598	255	154	129	302	0	160
V/C Ratio(X)	0.19	0.00	0.85	0.44	0.33	0.02	0.24	0.34	0.37	0.11	0.00	0.64
Avail Cap(c_a), veh/h	940	0	934	768	1139	943	845	706	592	632	0	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.5	0.0	14.2	10.9	10.0	3.1	24.6	23.9	12.7	22.3	0.0	24.6
Incr Delay (d2), s/veh	0.2	0.0	5.7	1.0	0.3	0.0	0.6	1.6	2.1	0.2	0.0	5.0
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(95%),veh/ln	1.3	0.0	10.7	1.6	3.2	0.1	1.4	1.2	1.2	0.7	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	0.0	19.9	11.9	10.4	3.2	25.2	25.5	14.8	22.5	0.0	29.6
LnGrp LOS	A	A	B	B	B	A	C	C	B	C	A	C
Approach Vol, veh/h		682			402			162			134	
Approach Delay, s/veh		17.6			10.8			22.2			27.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	10.1	9.5	29.5	7.6	10.2	8.8	30.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	25.5	20.5	35.5	25.5	15.5	15.5	40.5
Max Q Clear Time (g_c+I1), s	2.0	3.8	5.0	20.9	2.0	5.5	4.5	7.5
Green Ext Time (p_c), s	0.0	0.4	0.4	4.1	0.2	0.3	0.3	1.9

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	366	45	11	338	4	11	3	12	2	4	10
Future Volume (veh/h)	6	366	45	11	338	4	11	3	12	2	4	10
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		1.00	0.94		0.96	0.94		0.93
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	1585	1585	1585	1585	1585	1585	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	6	389	48	12	360	4	12	3	13	2	4	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	646	831	686	609	821	9	240	58	99	156	61	135
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1017	1585	1308	951	1564	17	368	373	643	83	396	877
Grp Volume(v), veh/h	6	389	48	12	0	364	28	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	1017	1585	1308	951	0	1582	1384	0	0	1355	0	0
Q Serve(g_s), s	0.1	4.3	0.5	0.2	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	4.3	0.5	4.6	0.0	4.0	0.5	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.43		0.46	0.12		0.65
Lane Grp Cap(c), veh/h	646	831	686	609	0	830	397	0	0	353	0	0
V/C Ratio(X)	0.01	0.47	0.07	0.02	0.00	0.44	0.07	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	2126	3137	2590	1993	0	3131	1174	0	0	1127	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	1.00	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	5.4	4.2	3.3	5.6	0.0	4.1	10.2	0.0	0.0	10.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.2	0.0	0.0	1.3	0.3	0.0	0.0	0.2	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(95%),veh/ln	0.0	1.6	0.1	0.1	0.0	1.4	0.3	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	5.7	3.4	5.7	0.0	5.4	10.5	0.0	0.0	10.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		443			376			28			17	
Approach Delay, s/veh		5.4			5.4			10.5			10.4	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.2	8.8	19.2	8.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	55.5	20.5	55.5	20.5
Max Q Clear Time (g_c+I1), s	6.3	2.3	6.6	2.5
Green Ext Time (p_c), s	8.3	0.1	7.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	212	22	52	114	22	36	462	25	89	596	134
Future Volume (veh/h)	86	212	22	52	114	22	36	462	25	89	596	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	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	1585	1585	1585	1585	1585	1585	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	91	226	23	55	121	23	38	491	27	95	634	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	298	264	27	184	275	231	499	1577	87	537	1344	303
Arrive On Green	0.07	0.19	0.19	0.05	0.17	0.17	0.04	0.54	0.54	0.10	1.00	1.00
Sat Flow, veh/h	1509	1413	144	1509	1585	1331	1509	2902	159	1497	2410	543
Grp Volume(v), veh/h	91	0	249	55	121	23	38	254	264	95	392	385
Grp Sat Flow(s),veh/h/ln	1509	0	1556	1509	1585	1331	1509	1506	1556	1497	1494	1459
Q Serve(g_s), s	5.4	0.0	17.0	3.2	7.5	1.6	1.2	10.2	10.3	3.1	0.0	0.0
Cycle Q Clear(g_c), s	5.4	0.0	17.0	3.2	7.5	1.6	1.2	10.2	10.3	3.1	0.0	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.10	1.00		0.37
Lane Grp Cap(c), veh/h	298	0	291	184	275	231	499	818	845	537	833	814
V/C Ratio(X)	0.31	0.00	0.86	0.30	0.44	0.10	0.08	0.31	0.31	0.18	0.47	0.47
Avail Cap(c_a), veh/h	408	0	488	218	396	333	587	818	845	589	833	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.00	0.97	0.98	0.98	0.98	0.99	0.99	0.99	0.79	0.79	0.79
Uniform Delay (d), s/veh	34.0	0.0	43.3	35.2	40.7	38.3	9.9	13.8	13.8	9.6	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	8.7	0.9	1.1	0.2	0.1	1.0	1.0	0.1	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	0.0	11.6	2.2	5.5	1.0	0.7	6.5	6.7	1.7	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	0.0	52.0	36.1	41.8	38.4	10.0	14.8	14.8	9.8	1.5	1.6
LnGrp LOS	C	A	D	D	D	D	A	B	B	A	A	A
Approach Vol, veh/h		340			199			556			872	
Approach Delay, s/veh		47.3			39.8			14.4			2.4	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	64.3	10.5	25.1	8.6	65.8	12.0	23.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	39.5	8.5	34.5	10.5	38.5	15.5	27.5
Max Q Clear Time (g_c+I1), s	5.1	12.3	5.2	19.0	3.2	2.0	7.4	9.5
Green Ext Time (p_c), s	0.1	4.0	0.0	1.5	0.0	7.1	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	154	167	10	156	4	9	11	10	12	90	24
Future Volume (veh/h)	17	154	167	10	156	4	9	11	10	12	90	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.98		1.00	0.96		0.94	0.95		0.94
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	1585	1585	1585	1585	1585	1585	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	19	173	188	11	175	4	10	12	11	13	101	27
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	1	1	1
Cap, veh/h	165	572	477	149	568	12	239	211	140	159	345	86
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	59	1507	1258	32	1496	33	235	711	473	59	1164	290
Grp Volume(v), veh/h	192	0	188	190	0	0	33	0	0	141	0	0
Grp Sat Flow(s),veh/h/ln	1566	0	1258	1560	0	0	1419	0	0	1513	0	0
Q Serve(g_s), s	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	3.0	2.4	0.0	0.0	0.4	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.10		1.00	0.06		0.02	0.30		0.33	0.09		0.19
Lane Grp Cap(c), veh/h	737	0	477	729	0	0	589	0	0	590	0	0
V/C Ratio(X)	0.26	0.00	0.39	0.26	0.00	0.00	0.06	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	1843	0	1383	1828	0	0	1688	0	0	1793	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	6.3	6.1	0.0	0.0	7.0	0.0	0.0	7.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.1	0.4	0.0	0.0	0.1	0.0	0.0	0.4	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(95%),veh/ln	1.0	0.0	1.1	1.0	0.0	0.0	0.2	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	7.4	6.5	0.0	0.0	7.1	0.0	0.0	8.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		380			190			33			141	
Approach Delay, s/veh		6.9			6.5			7.1			8.0	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	12.7	15.0	12.7	15.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	30.5	30.5	30.5
Max Q Clear Time (g_c+I1), s	2.4	5.0	4.0	4.4
Green Ext Time (p_c), s	0.2	3.9	1.5	2.1

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	94	57	32	139	8	22	12	9	12	42	14
Future Vol, veh/h	25	94	57	32	139	8	22	12	9	12	42	14
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	3	3	3
Mvmt Flow	30	113	69	39	167	10	27	14	11	14	51	17
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	9.1	9.4	9	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	65%	0%	100%	0%	100%	0%	18%
Vol Thru, %	35%	0%	0%	62%	0%	95%	62%
Vol Right, %	0%	100%	0%	38%	0%	5%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	9	25	151	32	147	68
LT Vol	22	0	25	0	32	0	12
Through Vol	12	0	0	94	0	139	42
RT Vol	0	9	0	57	0	8	14
Lane Flow Rate	41	11	30	182	39	177	82
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.069	0.015	0.047	0.247	0.06	0.249	0.127
Departure Headway (Hd)	6.05	5.019	5.652	4.883	5.605	5.064	5.568
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	590	709	633	733	638	708	641
Service Time	3.806	2.775	3.392	2.624	3.347	2.806	3.62
HCM Lane V/C Ratio	0.069	0.016	0.047	0.248	0.061	0.25	0.128
HCM Control Delay	9.3	7.9	8.7	9.2	8.7	9.5	9.4
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0.1	1	0.2	1	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	10	22	205	309	161
Future Volume (veh/h)	36	10	22	205	309	161
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	1.00			0.97
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	1560	1560	1409	1409	1560	1560
Adj Flow Rate, veh/h	41	11	25	233	351	183
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	16	16	4	4
Cap, veh/h	95	25	394	909	451	235
Arrive On Green	0.08	0.08	0.04	0.65	0.47	0.47
Sat Flow, veh/h	1117	300	1342	1409	953	497
Grp Volume(v), veh/h	53	0	25	233	0	534
Grp Sat Flow(s),veh/h/ln	1444	0	1342	1409	0	1450
Q Serve(g_s), s	1.2	0.0	0.3	2.3	0.0	10.2
Cycle Q Clear(g_c), s	1.2	0.0	0.3	2.3	0.0	10.2
Prop In Lane	0.77	0.21	1.00			0.34
Lane Grp Cap(c), veh/h	122	0	394	909	0	686
V/C Ratio(X)	0.43	0.00	0.06	0.26	0.00	0.78
Avail Cap(c_a), veh/h	1106	0	969	2349	0	1546
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.5	0.0	5.5	2.5	0.0	7.3
Incr Delay (d2), s/veh	1.8	0.0	0.1	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	0.1	0.4	0.0	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.3	0.0	5.5	2.6	0.0	8.8
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	53			258	534	
Approach Delay, s/veh	16.3			2.9	8.8	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		26.0		7.3	5.7	20.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		55.5		25.5	15.5	35.5
Max Q Clear Time (g_c+I1), s		4.3		3.2	2.3	12.2
Green Ext Time (p_c), s		1.3		0.1	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	310	0	0	182	38	0	1	2	82	5	483
Future Volume (veh/h)	540	310	0	0	182	38	0	1	2	82	5	483
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	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	1585	1585	1585	0	1522	1522	1610	1610	1610	1547	1547	1547
Adj Flow Rate, veh/h	562	323	0	0	190	40	0	1	2	85	5	503
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	7	7	0	0	0	5	5	5
Cap, veh/h	740	738	0	0	212	176	0	12	24	285	17	910
Arrive On Green	0.49	0.49	0.00	0.00	0.14	0.14	0.00	0.03	0.03	0.20	0.20	0.20
Sat Flow, veh/h	1509	1585	0	0	1522	1262	0	473	947	1395	82	1308
Grp Volume(v), veh/h	562	323	0	0	190	40	0	0	3	90	0	503
Grp Sat Flow(s),veh/h/ln	1509	1506	0	0	1522	1262	0	0	1420	1477	0	1308
Q Serve(g_s), s	42.9	19.8	0.0	0.0	17.4	4.0	0.0	0.0	0.3	7.3	0.0	27.1
Cycle Q Clear(g_c), s	42.9	19.8	0.0	0.0	17.4	4.0	0.0	0.0	0.3	7.3	0.0	27.1
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.67	0.94		1.00
Lane Grp Cap(c), veh/h	740	738	0	0	212	176	0	0	36	302	0	910
V/C Ratio(X)	0.76	0.44	0.00	0.00	0.90	0.23	0.00	0.00	0.08	0.30	0.00	0.55
Avail Cap(c_a), veh/h	740	738	0	0	225	187	0	0	320	302	0	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.86	0.00	0.86
Uniform Delay (d), s/veh	29.4	23.5	0.0	0.0	60.1	54.3	0.0	0.0	67.6	47.9	0.0	10.8
Incr Delay (d2), s/veh	5.4	0.9	0.0	0.0	39.5	3.0	0.0	0.0	1.4	1.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.4	11.8	0.0	0.0	14.1	2.6	0.0	0.0	0.2	5.1	0.0	25.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	24.3	0.0	0.0	99.6	57.3	0.0	0.0	69.0	49.2	0.0	12.1
LnGrp LOS	C	C	A	A	F	E	A	A	E	D	A	B
Approach Vol, veh/h		885			230			3			593	
Approach Delay, s/veh		31.0			92.2			69.0			17.7	
Approach LOS		C			F			E			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		8.6		74.6		34.0		24.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		32.0		40.0		29.0		21.0				
Max Q Clear Time (g_c+I1), s		2.3		44.9		29.1		19.4				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			34.7									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	452	240	23	0	203	42	13	548	11	101	673	431
Future Volume (veh/h)	452	240	23	0	203	42	13	548	11	101	673	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	0	1560	1560	1572	1572	1572	1572	1572	1572
Adj Flow Rate, veh/h	508	270	26	0	228	47	15	616	12	113	756	484
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	0	4	4	3	3	3	3	3	3
Cap, veh/h	499	502	48	0	320	65	276	1241	24	332	1356	832
Arrive On Green	0.30	0.61	0.61	0.00	0.13	0.13	0.01	0.14	0.14	0.12	0.91	0.91
Sat Flow, veh/h	2812	1367	132	0	2529	496	1497	2997	58	1497	2987	1313
Grp Volume(v), veh/h	508	0	296	0	136	139	15	307	321	113	756	484
Grp Sat Flow(s),veh/h/ln	1406	0	1498	0	1482	1465	1497	1494	1562	1497	1494	1313
Q Serve(g_s), s	19.5	0.0	12.6	0.0	9.7	10.0	0.6	20.9	20.9	4.7	5.2	9.6
Cycle Q Clear(g_c), s	19.5	0.0	12.6	0.0	9.7	10.0	0.6	20.9	20.9	4.7	5.2	9.6
Prop In Lane	1.00		0.09	0.00		0.34	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	499	0	550	0	194	192	276	618	647	332	1356	832
V/C Ratio(X)	1.02	0.00	0.54	0.00	0.70	0.73	0.05	0.50	0.50	0.34	0.56	0.58
Avail Cap(c_a), veh/h	499	0	742	0	397	393	348	618	647	358	1356	832
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.99	0.99	0.95	0.95	0.95	0.63	0.63	0.63
Uniform Delay (d), s/veh	38.7	0.0	15.9	0.0	45.8	45.9	18.0	36.9	36.9	17.3	3.0	1.6
Incr Delay (d2), s/veh	45.2	0.0	0.8	0.0	4.5	5.1	0.1	2.7	2.6	0.5	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.1	0.0	6.3	0.0	6.8	7.0	0.4	13.6	14.1	2.7	2.0	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	0.0	16.7	0.0	50.3	51.0	18.1	39.6	39.4	17.8	4.1	3.4
LnGrp LOS	F	A	B	A	D	D	B	D	D	B	A	A
Approach Vol, veh/h		804			275			643			1353	
Approach Delay, s/veh		59.2			50.7			39.0			5.0	
Approach LOS		E			D			D			A	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	51.0		46.9	7.7	55.4	26.0	20.9
Change Period (Y+Rc), s	5.5	5.5		6.5	5.5	5.5	6.5	* 6.5
Max Green Setting (Gmax), s	8.5	29.5		54.5	7.5	30.5	19.5	* 30
Max Q Clear Time (g_c+I1), s	6.7	22.9		14.6	2.6	11.6	21.5	12.0
Green Ext Time (p_c), s	0.1	2.4		2.0	0.0	8.5	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	30.4
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)	170	14	20	6	7	1	0	985	3	0	1131	177
Future Volume (veh/h)	170	14	20	6	7	1	0	985	3	0	1131	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	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	1535	1535	1535	1610	1610	1610	0	1547	1547	0	1572	1572
Adj Flow Rate, veh/h	179	15	21	6	7	1	0	1037	3	0	1191	186
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, %	6	6	6	0	0	0	0	5	5	0	3	3
Cap, veh/h	266	17	24	148	154	20	0	2208	6	0	1902	296
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.00	1.00	1.00	0.00	0.24	0.24
Sat Flow, veh/h	1122	94	132	552	838	107	0	3084	9	0	2668	403
Grp Volume(v), veh/h	215	0	0	14	0	0	0	507	533	0	685	692
Grp Sat Flow(s),veh/h/ln	1347	0	0	1498	0	0	0	1470	1546	0	1494	1499
Q Serve(g_s), s	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	45.4
Cycle Q Clear(g_c), s	17.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	45.0	45.4
Prop In Lane	0.83		0.10	0.43		0.07	0.00		0.01	0.00		0.27
Lane Grp Cap(c), veh/h	308	0	0	322	0	0	0	1079	1135	0	1097	1101
V/C Ratio(X)	0.70	0.00	0.00	0.04	0.00	0.00	0.00	0.47	0.47	0.00	0.62	0.63
Avail Cap(c_a), veh/h	458	0	0	488	0	0	0	1079	1135	0	1097	1101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.54	0.54	0.00	0.62	0.62
Uniform Delay (d), s/veh	43.6	0.0	0.0	37.0	0.0	0.0	0.0	0.0	0.0	0.0	28.1	28.3
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.1	0.0	0.0	0.0	0.8	0.8	0.0	1.7	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(95%),veh/ln	10.0	0.0	0.0	0.6	0.0	0.0	0.0	0.4	0.4	0.0	24.0	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	0.0	37.0	0.0	0.0	0.0	0.8	0.8	0.0	29.8	30.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	C	C
Approach Vol, veh/h		215			14			1040			1377	
Approach Delay, s/veh		47.0			37.0			0.8			29.9	
Approach LOS		D			D			A			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	85.3	24.7	85.3	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	68.5	32.5	68.5	32.5
Max Q Clear Time (g_c+I1), s	2.0	19.0	47.4	2.8
Green Ext Time (p_c), s	14.1	1.2	17.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	11	104	1064	1305	172
Future Volume (veh/h)	15	11	104	1064	1305	172
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	1422	1422	1547	1547	1572	1572
Adj Flow Rate, veh/h	14	15	118	1209	1483	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	15	15	5	5	3	3
Cap, veh/h	43	39	140	2605	2241	
Arrive On Green	0.03	0.03	0.13	1.00	0.75	0.00
Sat Flow, veh/h	1354	1205	1474	3017	3066	1332
Grp Volume(v), veh/h	14	15	118	1209	1483	0
Grp Sat Flow(s),veh/h/ln	1354	1205	1474	1470	1494	1332
Q Serve(g_s), s	1.1	1.3	8.6	0.0	27.1	0.0
Cycle Q Clear(g_c), s	1.1	1.3	8.6	0.0	27.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	43	39	140	2605	2241	
V/C Ratio(X)	0.32	0.39	0.84	0.46	0.66	
Avail Cap(c_a), veh/h	326	290	208	2605	2241	
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.82	0.82	1.00	0.00
Uniform Delay (d), s/veh	52.1	52.2	47.2	0.0	6.8	0.0
Incr Delay (d2), s/veh	5.1	7.5	16.5	0.5	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.9	6.6	0.3	11.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.1	59.7	63.8	0.5	8.4	0.0
LnGrp LOS	E	E	E	A	A	
Approach Vol, veh/h	29			1327	1483	
Approach Delay, s/veh	58.5			6.1	8.4	
Approach LOS	E			A	A	

Timer - Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		8.0	15.0	87.0				102.0
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		26.5	15.5	54.5				74.5
Max Q Clear Time (g_c+I1), s		3.3	10.6	29.1				2.0
Green Ext Time (p_c), s		0.1	0.1	16.9				20.4

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] 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)	22	31	152	134	25	95	71	797	100	89	1016	19
Future Volume (veh/h)	22	31	152	134	25	95	71	797	100	89	1016	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.99	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	1585	1585	1585	1585	1585	1585	1535	1535	1535	1572	1572	1572
Adj Flow Rate, veh/h	24	34	22	146	27	30	77	866	45	97	1104	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	3	3	3
Cap, veh/h	187	85	72	253	182	152	469	992	438	538	1241	22
Arrive On Green	0.04	0.05	0.05	0.10	0.11	0.11	0.29	0.34	0.34	0.36	0.41	0.41
Sat Flow, veh/h	1509	1585	1336	1509	1585	1326	1462	2916	1287	1497	3002	54
Grp Volume(v), veh/h	24	34	22	146	27	30	77	866	45	97	549	575
Grp Sat Flow(s),veh/h/ln	1509	1585	1336	1509	1585	1326	1462	1458	1287	1497	1494	1562
Q Serve(g_s), s	2.0	2.9	1.4	12.4	2.1	1.5	0.4	39.0	2.5	6.2	47.8	47.8
Cycle Q Clear(g_c), s	2.0	2.9	1.4	12.4	2.1	1.5	0.4	39.0	2.5	6.2	47.8	47.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	187	85	72	253	182	152	469	992	438	538	617	646
V/C Ratio(X)	0.13	0.40	0.31	0.58	0.15	0.20	0.16	0.87	0.10	0.18	0.89	0.89
Avail Cap(c_a), veh/h	305	249	210	301	272	227	469	1312	579	538	768	804
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	0.78	0.78	0.78
Uniform Delay (d), s/veh	58.0	64.0	24.7	53.2	55.8	14.8	35.7	43.3	17.0	30.7	38.1	38.1
Incr Delay (d2), s/veh	0.3	3.0	2.4	2.1	0.4	0.6	0.2	10.5	0.5	0.1	14.3	13.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	2.3	1.4	8.5	1.6	1.8	3.5	21.9	2.0	4.1	26.2	27.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.3	67.0	27.0	55.3	56.1	15.4	35.9	53.9	17.5	30.9	52.4	51.9
LnGrp LOS	E	E	C	E	E	B	D	D	B	C	D	D
Approach Vol, veh/h		80			203			988			1221	
Approach Delay, s/veh		53.4			49.5			50.8			50.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	55.3	52.6	19.6	12.5	45.0	62.9	11.0	21.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	16.0	63.0	19.0	22.0	7.0	72.0	17.0	24.0
Max Q Clear Time (g_c+I1), s	8.2	41.0	14.4	4.9	2.4	49.8	4.0	4.1
Green Ext Time (p_c), s	0.1	6.6	0.1	0.2	0.1	8.1	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	50.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	53	118	86	50	86	42	828	71	55	921	23
Future Volume (veh/h)	72	53	118	86	50	86	42	828	71	55	921	23
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		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	1547	1547	1547	1585	1585	1585	1560	1560	1560	1572	1572	1572
Adj Flow Rate, veh/h	79	58	130	95	55	95	46	910	78	60	1012	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	2	2	2	4	4	4	3	3	3
Cap, veh/h	95	185	155	97	190	159	395	1880	837	468	1899	47
Arrive On Green	0.06	0.12	0.12	0.06	0.12	0.12	0.07	1.00	1.00	0.05	0.85	0.85
Sat Flow, veh/h	1474	1547	1298	1509	1585	1330	1485	2964	1320	1497	2979	74
Grp Volume(v), veh/h	79	58	130	95	55	95	46	910	78	60	507	530
Grp Sat Flow(s),veh/h/ln	1474	1547	1298	1509	1585	1330	1485	1482	1320	1497	1494	1559
Q Serve(g_s), s	7.4	4.8	13.7	8.8	4.4	9.5	1.5	0.0	0.0	1.9	13.2	13.2
Cycle Q Clear(g_c), s	7.4	4.8	13.7	8.8	4.4	9.5	1.5	0.0	0.0	1.9	13.2	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	95	185	155	97	190	159	395	1880	837	468	952	994
V/C Ratio(X)	0.84	0.31	0.84	0.98	0.29	0.60	0.12	0.48	0.09	0.13	0.53	0.53
Avail Cap(c_a), veh/h	95	365	306	97	374	313	438	1880	837	506	952	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	0.87	0.87	0.87
Uniform Delay (d), s/veh	64.8	56.4	60.3	65.4	56.2	58.4	8.2	0.0	0.0	7.7	4.9	4.9
Incr Delay (d2), s/veh	44.6	1.0	11.1	84.3	0.8	3.5	0.1	0.8	0.2	0.1	1.9	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.2	3.5	8.7	9.6	3.3	6.1	0.8	0.4	0.1	1.1	5.9	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.4	57.3	71.4	149.7	57.0	61.9	8.3	0.8	0.2	7.8	6.7	6.7
LnGrp LOS	F	E	E	F	E	E	A	A	A	A	A	A
Approach Vol, veh/h		267			245			1034			1097	
Approach Delay, s/veh		79.6			94.9			1.1			6.7	
Approach LOS		E			F			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	93.8	14.0	21.8	10.0	94.2	14.0	21.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	69.0	9.0	33.0	9.0	69.0	9.0	33.0
Max Q Clear Time (g_c+I1), s	3.9	2.0	10.8	15.7	3.5	15.2	9.4	11.5
Green Ext Time (p_c), s	0.0	8.8	0.0	0.7	0.0	8.8	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	11	0	12	0	915	20	11	998	0
Future Volume (veh/h)	0	0	0	11	0	12	0	915	20	11	998	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.97		0.99	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	1610	1610	1610	1572	1572	1572	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	0	0	0	11	0	12	0	943	21	11	1029	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	3	3	1	1	1	1	1	1
Cap, veh/h	0	52	0	99	0	43	518	2566	57	571	2720	0
Arrive On Green	0.00	0.00	0.00	0.03	0.00	0.03	0.00	1.00	1.00	0.01	0.90	0.00
Sat Flow, veh/h	0	1610	0	1456	0	1314	1521	3035	68	1521	3115	0
Grp Volume(v), veh/h	0	0	0	11	0	12	0	471	493	11	1029	0
Grp Sat Flow(s),veh/h/ln	0	1610	0	1456	0	1314	1521	1518	1585	1521	1518	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	1.2	0.0	0.0	0.0	0.1	7.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.0	0.0	1.2	0.0	0.0	0.0	0.1	7.5	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	52	0	99	0	43	518	1283	1340	571	2720	0
V/C Ratio(X)	0.00	0.00	0.00	0.11	0.00	0.28	0.00	0.37	0.37	0.02	0.38	0.00
Avail Cap(c_a), veh/h	0	288	0	311	0	235	615	1283	1340	646	2720	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.90	0.90	0.83	0.83	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	66.0	0.0	66.1	0.0	0.0	0.0	1.1	1.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.0	5.0	0.0	0.7	0.7	0.0	0.3	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(95%),veh/ln	0.0	0.0	0.0	0.7	0.0	0.9	0.0	0.5	0.5	0.0	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	66.7	0.0	71.2	0.0	0.7	0.7	1.1	1.5	0.0
LnGrp LOS	A	A	A	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		0			23			964			1040	
Approach Delay, s/veh		0.0			69.1			0.7			1.5	
Approach LOS					E			A			A	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	7.1	123.4	9.5	0.0	130.5	9.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	91.0	25.0	9.0	91.0	25.0
Max Q Clear Time (g_c+I1), s	2.1	2.0	0.0	0.0	9.5	3.2
Green Ext Time (p_c), s	0.0	12.6	0.0	0.0	15.6	0.1

Intersection Summary	
HCM 6th Ctrl Delay	1.9
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
28: Wheaton Way (SR 303) & Riddell Rd

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	39	128	34	53	162	67	754	58	84	799	57
Future Volume (veh/h)	98	39	128	34	53	162	67	754	58	84	799	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1585	1585	1560	1560	1560	1560	1560	1560
Adj Flow Rate, veh/h	105	42	138	37	57	174	72	802	62	90	859	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	4	4	4
Cap, veh/h	181	233	197	150	202	171	527	1493	115	180	930	414
Arrive On Green	0.06	0.15	0.15	0.04	0.13	0.13	0.29	0.54	0.54	0.13	0.63	0.63
Sat Flow, veh/h	1509	1585	1340	1509	1585	1343	1485	2787	215	1485	2964	1318
Grp Volume(v), veh/h	105	42	138	37	57	174	72	426	438	90	859	61
Grp Sat Flow(s),veh/h/ln	1509	1585	1340	1509	1585	1343	1485	1482	1521	1485	1482	1318
Q Serve(g_s), s	0.5	2.2	5.0	2.2	3.1	9.7	0.0	17.8	17.8	4.4	24.4	1.8
Cycle Q Clear(g_c), s	0.5	2.2	5.0	2.2	3.1	9.7	0.0	17.8	17.8	4.4	24.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	181	233	197	150	202	171	527	794	815	180	930	414
V/C Ratio(X)	0.58	0.18	0.70	0.25	0.28	1.02	0.14	0.54	0.54	0.50	0.92	0.15
Avail Cap(c_a), veh/h	235	334	282	201	300	254	527	794	815	252	1092	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	0.94	0.94	0.94	0.66	0.66	0.66
Uniform Delay (d), s/veh	42.0	35.5	11.1	39.9	37.5	26.7	23.5	14.4	14.4	26.2	16.7	12.5
Incr Delay (d2), s/veh	1.8	0.2	2.8	0.6	0.6	52.1	0.1	2.4	2.4	1.1	11.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	1.6	5.5	1.5	2.2	9.5	2.1	10.1	10.3	2.6	8.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	35.7	13.9	40.6	38.1	78.7	23.6	16.8	16.8	27.2	28.2	13.0
LnGrp LOS	D	D	B	D	D	F	C	B	B	C	C	B
Approach Vol, veh/h		285			268			936			1010	
Approach Delay, s/veh		28.1			64.8			17.3			27.2	
Approach LOS		C			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.5	34.8	10.6	17.1	11.4	55.9	8.7	19.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	13.0	35.0	9.0	18.0	11.0	37.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	12.0	26.4	2.5	11.7	6.4	19.8	4.2	7.0
Green Ext Time (p_c), s	0.1	3.4	0.1	0.4	0.1	4.4	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	573	18	113	562	22	13	31	73	34	48	15
Future Volume (veh/h)	8	573	18	113	562	22	13	31	73	34	48	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	0.96		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	8	597	19	118	585	23	14	32	76	35	50	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	42	1907	60	600	2206	87	29	272	222	203	126	40
Arrive On Green	0.65	0.65	0.65	0.11	1.00	1.00	0.02	0.17	0.17	0.11	0.11	0.11
Sat Flow, veh/h	13	2917	92	1509	2950	116	1521	1597	1301	1240	1137	364
Grp Volume(v), veh/h	327	0	297	118	298	310	14	32	76	35	0	66
Grp Sat Flow(s),veh/h/ln	1585	0	1437	1509	1506	1560	1521	1597	1301	1240	0	1501
Q Serve(g_s), s	0.0	0.0	9.9	2.6	0.0	0.0	1.0	1.9	5.7	2.8	0.0	4.5
Cycle Q Clear(g_c), s	9.8	0.0	9.9	2.6	0.0	0.0	1.0	1.9	5.7	2.8	0.0	4.5
Prop In Lane	0.02		0.06	1.00		0.07	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	1070	0	940	600	1126	1167	29	272	222	203	0	166
V/C Ratio(X)	0.31	0.00	0.32	0.20	0.26	0.27	0.48	0.12	0.34	0.17	0.00	0.40
Avail Cap(c_a), veh/h	1070	0	940	650	1126	1167	118	574	467	364	0	362
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	0.96	0.96	0.96	0.95	0.95	0.95	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.3	0.0	8.3	5.0	0.0	0.0	53.4	38.6	40.2	44.8	0.0	45.5
Incr Delay (d2), s/veh	0.7	0.0	0.9	0.2	0.6	0.5	11.5	0.2	0.9	0.4	0.0	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(95%),veh/ln	6.1	0.0	5.6	1.2	0.3	0.3	0.9	1.4	3.4	1.6	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	9.2	5.1	0.6	0.5	64.9	38.8	41.1	45.2	0.0	47.1
LnGrp LOS	A	A	A	A	A	A	E	D	D	D	A	D
Approach Vol, veh/h		624			726			122			101	
Approach Delay, s/veh		9.1			1.3			43.2			46.4	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		23.2		86.8	6.6	16.7	10.3	76.4				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s		39.5		61.5	8.5	26.5	9.5	47.5				
Max Q Clear Time (g_c+I1), s		7.7		2.0	3.0	6.5	4.6	11.9				
Green Ext Time (p_c), s		0.4		4.3	0.0	0.4	0.1	4.3				
Intersection Summary												
HCM 6th Ctrl Delay			10.5									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	636	10	30	666	9	11	21	140	15	44	27
Future Volume (veh/h)	5	636	10	30	666	9	11	21	140	15	44	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1547	1547	1547	1560	1560	1560	1572	1572	1572	1547	1547	1547
Adj Flow Rate, veh/h	5	669	11	32	701	9	12	22	147	16	46	28
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, %	5	5	5	4	4	4	3	3	3	5	5	5
Cap, veh/h	11	2013	33	51	2116	27	25	29	193	49	75	39
Arrive On Green	0.00	0.22	0.22	0.07	1.00	1.00	0.02	0.16	0.16	0.11	0.11	0.11
Sat Flow, veh/h	1474	2960	49	1485	2995	38	1497	177	1181	104	706	366
Grp Volume(v), veh/h	5	332	348	32	347	363	12	0	169	90	0	0
Grp Sat Flow(s),veh/h/ln	1474	1470	1538	1485	1482	1552	1497	0	1357	1176	0	0
Q Serve(g_s), s	0.4	20.8	20.8	2.3	0.0	0.0	0.9	0.0	13.1	2.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	20.8	20.8	2.3	0.0	0.0	0.9	0.0	13.1	8.7	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	1.00		0.87	0.18		0.31
Lane Grp Cap(c), veh/h	11	1000	1046	51	1047	1096	25	0	222	163	0	0
V/C Ratio(X)	0.44	0.33	0.33	0.63	0.33	0.33	0.48	0.00	0.76	0.55	0.00	0.00
Avail Cap(c_a), veh/h	141	1000	1046	115	1047	1096	116	0	512	376	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.90	0.90	0.90	0.99	0.00	0.99	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.6	21.7	21.7	50.6	0.0	0.0	53.6	0.0	44.0	47.4	0.0	0.0
Incr Delay (d2), s/veh	23.3	0.8	0.8	11.2	0.8	0.7	13.3	0.0	5.3	2.9	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(95%),veh/ln	0.4	13.0	13.5	1.8	0.4	0.4	0.8	0.0	8.3	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.9	22.6	22.5	61.8	0.8	0.7	66.9	0.0	49.3	50.4	0.0	0.0
LnGrp LOS	E	C	C	E	A	A	E	A	D	D	A	A
Approach Vol, veh/h		685			742			181			90	
Approach Delay, s/veh		23.0			3.4			50.5			50.4	
Approach LOS		C			A			D			D	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	79.3	6.3	16.1	5.4	82.2		22.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	46.5	8.5	28.5	10.5	44.5		41.5				
Max Q Clear Time (g_c+I1), s	4.3	22.8	2.9	10.7	2.4	2.0		15.1				
Green Ext Time (p_c), s	0.0	4.4	0.0	0.4	0.0	5.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			18.8									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	700	1	6	622	8	19	32	10	39	10	55
Future Volume (veh/h)	83	700	1	6	622	8	19	32	10	39	10	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1522	1522	1522	1560	1560	1560	1610	1610	1610	1572	1572	1572
Adj Flow Rate, veh/h	99	833	1	7	740	10	23	38	12	46	12	65
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	7	7	7	4	4	4	0	0	0	3	3	3
Cap, veh/h	417	1955	2	482	1851	25	42	103	33	62	21	116
Arrive On Green	0.10	1.00	1.00	0.00	0.20	0.20	0.03	0.09	0.09	0.04	0.10	0.10
Sat Flow, veh/h	1450	2964	4	1485	2994	40	1533	1162	367	1497	210	1138
Grp Volume(v), veh/h	99	406	428	7	366	384	23	0	50	46	0	77
Grp Sat Flow(s),veh/h/ln	1450	1446	1521	1485	1482	1552	1533	0	1529	1497	0	1348
Q Serve(g_s), s	2.6	0.0	0.0	0.2	23.6	23.6	1.6	0.0	3.4	3.3	0.0	6.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.2	23.6	23.6	1.6	0.0	3.4	3.3	0.0	6.0
Prop In Lane	1.00		0.00	1.00		0.03	1.00		0.24	1.00		0.84
Lane Grp Cap(c), veh/h	417	954	1004	482	916	960	42	0	135	62	0	138
V/C Ratio(X)	0.24	0.43	0.43	0.01	0.40	0.40	0.54	0.00	0.37	0.75	0.00	0.56
Avail Cap(c_a), veh/h	454	954	1004	567	916	960	105	0	368	102	0	325
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.7	0.0	0.0	7.7	26.1	26.1	52.8	0.0	47.2	52.2	0.0	47.0
Incr Delay (d2), s/veh	0.3	1.3	1.3	0.0	1.3	1.2	10.5	0.0	1.7	16.2	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.6	0.6	0.1	14.7	15.3	1.4	0.0	2.5	2.8	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	1.3	1.3	7.7	27.4	27.3	63.3	0.0	48.9	68.4	0.0	50.5
LnGrp LOS	A	A	A	A	C	C	E	A	D	E	A	D
Approach Vol, veh/h		933			757			73			123	
Approach Delay, s/veh		2.1			27.2			53.4			57.2	
Approach LOS		A			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	15.2	6.7	78.1	8.5	16.7	11.2	73.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	7.5	26.5	7.5	46.5	7.5	26.5	8.5	45.5
Max Q Clear Time (g_c+I1), s	5.3	5.4	2.2	2.0	3.6	8.0	4.6	25.6
Green Ext Time (p_c), s	0.0	0.2	0.0	6.3	0.0	0.3	0.1	4.7

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	251	71	12	205	8	18	18	7	8	32	12
Future Volume (veh/h)	23	251	71	12	205	8	18	18	7	8	32	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.98	0.97		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	1560	1560	1560	1547	1547	1547	1547	1547	1547	1585	1585	1585
Adj Flow Rate, veh/h	27	292	83	14	238	9	21	21	8	9	37	14
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	4	5	5	5	5	5	5	2	2	2
Cap, veh/h	60	496	420	33	444	17	275	169	218	184	237	226
Arrive On Green	0.04	0.32	0.32	0.02	0.30	0.30	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1485	1560	1320	1474	1481	56	465	994	1281	164	1392	1325
Grp Volume(v), veh/h	27	292	83	14	0	247	42	0	8	46	0	14
Grp Sat Flow(s),veh/h/ln	1485	1560	1320	1474	0	1537	1459	0	1281	1556	0	1325
Q Serve(g_s), s	0.5	4.3	1.3	0.3	0.0	3.7	0.0	0.0	0.1	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.5	4.3	1.3	0.3	0.0	3.7	0.6	0.0	0.1	0.7	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.04	0.50		1.00	0.20		1.00
Lane Grp Cap(c), veh/h	60	496	420	33	0	461	444	0	218	421	0	226
V/C Ratio(X)	0.45	0.59	0.20	0.43	0.00	0.54	0.09	0.00	0.04	0.11	0.00	0.06
Avail Cap(c_a), veh/h	1104	2007	1698	1095	0	1977	1254	0	952	1298	0	984
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	7.9	6.8	13.3	0.0	8.1	9.8	0.0	9.6	9.8	0.0	9.6
Incr Delay (d2), s/veh	5.1	1.1	0.2	8.7	0.0	1.0	0.1	0.0	0.1	0.1	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(95%),veh/ln	0.4	1.8	0.4	0.3	0.0	1.5	0.3	0.0	0.1	0.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	9.0	7.1	22.0	0.0	9.0	9.9	0.0	9.6	9.9	0.0	9.7
LnGrp LOS	B	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		402			261			50			60	
Approach Delay, s/veh		9.2			9.7			9.8			9.9	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.2	5.1	13.3		9.2	5.6	12.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		20.5	20.5	35.5		20.5	20.5	35.5
Max Q Clear Time (g_c+I1), s		2.6	2.3	6.3		2.7	2.5	5.7
Green Ext Time (p_c), s		0.2	0.0	2.1		0.2	0.0	1.5

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

MOVEMENT SUMMARY

Site: 34 [Washington Ave & Manette Bridge (Site Folder: 2030 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total	HV]	Arrival Flows [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: Washington Ave (NB)															
8	T1	All MCs	85	9.0	85	9.0	0.294	3.4	LOS A	1.5	41.1	0.43	0.47	0.43	23.8
18	R2	All MCs	216	9.0	216	9.0	0.294	3.8	LOS A	1.5	41.1	0.43	0.47	0.43	25.4
Approach			301	9.0	301	9.0	0.294	3.7	LOS A	1.5	41.1	0.43	0.47	0.43	24.9
East: Manette Bridge (WB)															
1	L2	All MCs	422	3.0	422	3.0	0.491	7.2	LOS A	2.9	73.6	0.29	0.55	0.29	24.9
16	R2	All MCs	185	3.0	185	3.0	0.491	3.9	LOS A	2.9	73.6	0.29	0.55	0.29	25.0
Approach			607	3.0	607	3.0	0.491	6.2	LOS A	2.9	73.6	0.29	0.55	0.29	24.9
North: Washington Ave (SB)															
7	L2	All MCs	226	5.0	226	5.0	0.290	7.9	LOS A	1.5	39.2	0.55	0.64	0.55	24.5
4	T1	All MCs	46	5.0	46	5.0	0.290	4.3	LOS A	1.5	39.2	0.55	0.64	0.55	23.0
Approach			272	5.0	272	5.0	0.290	7.3	LOS A	1.5	39.2	0.55	0.64	0.55	24.2
All Vehicles			1180	5.0	1180	5.0	0.491	5.8	LOS A	2.9	73.6	0.38	0.55	0.38	24.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	47	4	663	0	16	1	119	879	16	249	0
Future Volume (veh/h)	3	47	4	663	0	16	1	119	879	16	249	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1572	1572	1572	1560	1560	1560	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	3	51	4	737	0	0	1	129	955	17	271	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	4	4	4	2	2	2	2	2	2
Cap, veh/h	30	513	40	851	447	0	39	308	1137	56	533	0
Arrive On Green	0.38	0.38	0.38	0.29	0.00	0.00	0.19	0.19	0.19	0.19	0.19	0.00
Sat Flow, veh/h	80	1362	107	2971	1560	0	2	1582	2364	72	2807	0
Grp Volume(v), veh/h	58	0	0	737	0	0	130	0	955	152	136	0
Grp Sat Flow(s),veh/h/ln	1549	0	0	1485	1560	0	1584	0	1182	1437	1370	0
Q Serve(g_s), s	2.3	0.0	0.0	22.4	0.0	0.0	0.0	0.0	18.5	0.0	8.4	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	22.4	0.0	0.0	6.8	0.0	18.5	8.1	8.4	0.0
Prop In Lane	0.05		0.07	1.00		0.00	0.01		1.00	0.11		0.00
Lane Grp Cap(c), veh/h	583	0	0	851	447	0	347	0	1137	322	267	0
V/C Ratio(X)	0.10	0.00	0.00	0.87	0.00	0.00	0.38	0.00	0.84	0.47	0.51	0.00
Avail Cap(c_a), veh/h	583	0	0	1345	706	0	347	0	1137	322	267	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	0.00	0.96	0.00	0.00	1.00	0.00	1.00	0.76	0.76	0.00
Uniform Delay (d), s/veh	19.2	0.0	0.0	32.2	0.0	0.0	33.6	0.0	17.6	34.1	34.2	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	11.1	0.0	0.0	1.0	0.0	6.0	1.2	1.7	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(95%),veh/ln	1.5	0.0	0.0	14.1	0.0	0.0	4.8	0.0	17.9	5.8	5.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	0.0	43.3	0.0	0.0	34.5	0.0	23.5	35.2	35.9	0.0
LnGrp LOS	B	A	A	D	A	A	C	A	C	D	D	A
Approach Vol, veh/h		58			737			1085			288	
Approach Delay, s/veh		19.2			43.3			24.9			35.5	
Approach LOS		B			D			C			D	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.0		40.3		23.0		31.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.5		20.0		18.5		43.0
Max Q Clear Time (g_c+I1), s		20.5		4.3		10.4		24.4
Green Ext Time (p_c), s		0.0		0.2		1.4		2.8

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	919	2	0	613	7	9	4	35	78	4	50
Future Volume (veh/h)	27	919	2	0	613	7	9	4	35	78	4	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		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	1585	1585	1585	1560	1560	1560	1447	1447	1447	1535	1535	1535
Adj Flow Rate, veh/h	29	978	2	0	652	7	10	4	37	83	4	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	4	4	4	13	13	13	6	6	6
Cap, veh/h	79	2263	5	0	2329	25	63	29	123	156	14	67
Arrive On Green	1.00	1.00	1.00	0.00	0.78	0.78	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	50	2919	6	0	3081	32	134	225	948	734	109	513
Grp Volume(v), veh/h	521	0	488	0	322	337	51	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1533	0	1441	0	1482	1554	1307	0	0	1356	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	5.9	5.9	0.0	0.0	0.0	6.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	5.9	5.9	3.4	0.0	0.0	9.4	0.0	0.0
Prop In Lane	0.06		0.00	0.00		0.02	0.20		0.73	0.59		0.38
Lane Grp Cap(c), veh/h	1228	0	1117	0	1149	1205	215	0	0	237	0	0
V/C Ratio(X)	0.42	0.00	0.44	0.00	0.28	0.28	0.24	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	1228	0	1117	0	1149	1205	347	0	0	377	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)	0.86	0.00	0.86	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	3.1	3.1	37.5	0.0	0.0	39.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	1.1	0.0	0.6	0.6	0.7	0.0	0.0	2.8	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(95%),veh/ln	0.6	0.0	0.6	0.0	2.8	2.9	2.0	0.0	0.0	6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.9	0.0	1.1	0.0	3.7	3.6	38.1	0.0	0.0	42.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1009			659			51			140	
Approach Delay, s/veh		1.0			3.7			38.1			42.8	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.8		78.2		16.8		78.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		63.5		22.5		63.5				
Max Q Clear Time (g_c+I1), s		5.4		2.0		11.4		7.9				
Green Ext Time (p_c), s		0.2		20.3		0.6		10.5				
Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	825	79	104	576	19	21	30	9	28	202	94
Future Volume (veh/h)	85	825	79	104	576	19	21	30	9	28	202	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	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	1572	1572	1572	1572	1572	1572	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	88	851	81	107	594	20	22	31	9	29	208	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	1	1	1
Cap, veh/h	111	1181	112	137	1315	44	45	294	242	56	308	257
Arrive On Green	0.07	0.43	0.43	0.09	0.45	0.45	0.03	0.19	0.19	0.04	0.19	0.19
Sat Flow, veh/h	1497	2755	262	1497	2949	99	1509	1585	1304	1521	1597	1332
Grp Volume(v), veh/h	88	461	471	107	301	313	22	31	9	29	208	97
Grp Sat Flow(s),veh/h/ln	1497	1494	1523	1497	1494	1554	1509	1585	1304	1521	1597	1332
Q Serve(g_s), s	4.0	17.9	17.9	4.9	9.8	9.8	1.0	1.1	0.4	1.3	8.5	4.4
Cycle Q Clear(g_c), s	4.0	17.9	17.9	4.9	9.8	9.8	1.0	1.1	0.4	1.3	8.5	4.4
Prop In Lane	1.00		0.17	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	641	653	137	666	693	45	294	242	56	308	257
V/C Ratio(X)	0.79	0.72	0.72	0.78	0.45	0.45	0.49	0.11	0.04	0.52	0.68	0.38
Avail Cap(c_a), veh/h	760	1612	1644	974	1612	1678	982	1031	848	555	1039	866
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	31.8	16.5	16.5	31.1	13.4	13.5	33.4	23.7	23.4	33.1	26.2	24.6
Incr Delay (d2), s/veh	14.0	1.9	1.8	11.1	0.6	0.6	9.6	0.2	0.1	8.6	3.1	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(95%),veh/ln	3.4	10.0	10.1	3.9	5.7	5.9	0.9	0.8	0.2	1.1	6.1	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	18.4	18.3	42.2	14.0	14.0	43.0	23.8	23.4	41.6	29.3	25.7
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1020			721			62			334	
Approach Delay, s/veh		20.7			18.2			30.6			29.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	17.5	10.9	34.5	6.6	18.0	9.7	35.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	45.5	45.5	75.5	45.5	45.5	35.5	75.5
Max Q Clear Time (g_c+I1), s	3.3	3.1	6.9	19.9	3.0	10.5	6.0	11.8
Green Ext Time (p_c), s	0.1	0.2	0.4	10.1	0.1	2.1	0.3	5.7

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	797	21	7	618	0	44	5	8	9	14	3
Future Volume (veh/h)	8	797	21	7	618	0	44	5	8	9	14	3
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		1.00	0.87		0.91	0.93		0.83
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	1560	1560	1560	1535	1535	1535	1560	1560	1560	1610	1610	1610
Adj Flow Rate, veh/h	9	848	22	7	657	0	47	5	9	10	15	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	0	0	0
Cap, veh/h	39	2252	58	34	1195	0	180	20	25	98	126	22
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	11	2868	74	5	1522	0	910	142	182	408	901	157
Grp Volume(v), veh/h	461	0	418	664	0	0	61	0	0	28	0	0
Grp Sat Flow(s),veh/h/ln	1549	0	1404	1527	0	0	1234	0	0	1466	0	0
Q Serve(g_s), s	0.0	0.0	10.9	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.8	0.0	10.9	19.7	0.0	0.0	5.2	0.0	0.0	1.9	0.0	0.0
Prop In Lane	0.02		0.05	0.01		0.00	0.77		0.15	0.36		0.11
Lane Grp Cap(c), veh/h	1247	0	1103	1230	0	0	225	0	0	246	0	0
V/C Ratio(X)	0.37	0.00	0.38	0.54	0.00	0.00	0.27	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	1247	0	1103	1230	0	0	314	0	0	350	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)	0.72	0.00	0.72	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	3.9	4.9	0.0	0.0	46.5	0.0	0.0	45.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.7	1.7	0.0	0.0	0.2	0.0	0.0	0.1	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(95%),veh/ln	5.6	0.0	5.2	9.8	0.0	0.0	3.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	0.0	4.7	6.6	0.0	0.0	46.8	0.0	0.0	45.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		879			664			61			28	
Approach Delay, s/veh		4.6			6.6			46.8			45.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		98.7		21.3		98.7		21.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		85.5		25.5		85.5		25.5
Max Q Clear Time (g_c+I1), s		12.9		3.9		21.7		7.2
Green Ext Time (p_c), s		11.6		0.1		9.1		0.2

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	355	173	6	19	22
Future Volume (veh/h)	60	355	173	6	19	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1497	1497	1572	1572	1522	1522
Adj Flow Rate, veh/h	61	362	177	6	19	22
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	9	9	3	3	7	7
Cap, veh/h	350	969	1141	39	52	60
Arrive On Green	0.39	0.39	0.39	0.39	0.08	0.08
Sat Flow, veh/h	217	2571	3026	99	614	711
Grp Volume(v), veh/h	235	188	89	94	42	0
Grp Sat Flow(s),veh/h/ln	1425	1294	1494	1553	1358	0
Q Serve(g_s), s	0.0	1.8	0.7	0.7	0.5	0.0
Cycle Q Clear(g_c), s	1.9	1.8	0.7	0.7	0.5	0.0
Prop In Lane	0.26			0.06	0.45	0.52
Lane Grp Cap(c), veh/h	818	501	578	601	115	0
V/C Ratio(X)	0.29	0.37	0.15	0.16	0.37	0.00
Avail Cap(c_a), veh/h	3966	3456	3989	4147	2032	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.8	3.7	3.4	3.4	7.4	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.1	0.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.2	0.1	0.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	4.1	3.5	3.5	8.8	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		423	183		42	
Approach Delay, s/veh		4.0	3.5		8.8	
Approach LOS		A	A		A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		11.1		5.9		11.1
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		45.5		25.5		45.5
Max Q Clear Time (g_c+I1), s		3.9		2.5		2.7
Green Ext Time (p_c), s		2.4		0.1		0.9
Intersection Summary						
HCM 6th Ctrl Delay			4.2			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	131	240	88	149	12	0	0	0	14	142	7
Future Volume (veh/h)	15	131	240	88	149	12	0	0	0	14	142	7
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.88	0.95		0.99				1.00		0.75
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	1472	1472	1472	1497	1497	1497				1547	1547	1547
Adj Flow Rate, veh/h	17	149	273	100	169	14				16	161	8
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	11	11	11	9	9	9				5	5	5
Cap, veh/h	135	610	480	278	377	27				44	443	22
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43				0.34	0.34	0.34
Sat Flow, veh/h	52	1403	1104	321	867	62				130	1309	65
Grp Volume(v), veh/h	166	0	273	283	0	0				185	0	0
Grp Sat Flow(s),veh/h/ln	1455	0	1104	1250	0	0				1504	0	0
Q Serve(g_s), s	0.0	0.0	6.5	1.6	0.0	0.0				3.3	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	6.5	5.1	0.0	0.0				3.3	0.0	0.0
Prop In Lane	0.10		1.00	0.35		0.05				0.09		0.04
Lane Grp Cap(c), veh/h	745	0	480	682	0	0				509	0	0
V/C Ratio(X)	0.22	0.00	0.57	0.42	0.00	0.00				0.36	0.00	0.00
Avail Cap(c_a), veh/h	1985	0	1440	1708	0	0				1323	0	0
HCM Platoon Ratio	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	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	6.3	0.0	7.5	7.0	0.0	0.0				8.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.4	0.0	0.0				0.4	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
%ile BackOfQ(95%),veh/ln	1.0	0.0	2.1	1.9	0.0	0.0				1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	8.5	7.4	0.0	0.0				9.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		439			283						185	
Approach Delay, s/veh		7.8			7.4						9.2	
Approach LOS		A			A						A	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		19.3		15.9		19.3						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		46.0		31.0		46.0						
Max Q Clear Time (g_c+I1), s		8.5		5.3		7.1						
Green Ext Time (p_c), s		2.4		1.1		2.4						

Intersection Summary		
HCM 6th Ctrl Delay		8.0
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1	0	0	3	1	79	123	0	0	0	201
Future Volume (veh/h)	66	1	0	0	3	1	79	123	0	0	0	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.97		1.00	1.00		0.95
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	1585	1585	0	0	1610	1610	1434	1434	1434	1459	1459	1459
Adj Flow Rate, veh/h	73	1	0	0	3	1	87	135	0	0	0	221
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	0	0	0	0	14	14	14	12	12	12
Cap, veh/h	139	2	0	0	8	3	452	659	0	0	0	501
Arrive On Green	0.09	0.09	0.00	0.00	0.01	0.01	0.43	0.43	0.00	0.00	0.00	0.43
Sat Flow, veh/h	1490	20	0	0	1155	385	550	1605	0	0	0	1169
Grp Volume(v), veh/h	74	0	0	0	0	4	120	102	0	0	0	221
Grp Sat Flow(s),veh/h/ln	1510	0	0	0	0	1539	849	1240	0	0	0	1169
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	0.1	1.4	1.5	0.0	0.0	0.0	3.8
Cycle Q Clear(g_c), s	1.3	0.0	0.0	0.0	0.0	0.1	5.2	1.5	0.0	0.0	0.0	3.8
Prop In Lane	0.99		0.00	0.00		0.25	0.72		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	141	0	0	0	0	10	581	531	0	0	0	501
V/C Ratio(X)	0.53	0.00	0.00	0.00	0.00	0.40	0.21	0.19	0.00	0.00	0.00	0.44
Avail Cap(c_a), veh/h	1346	0	0	0	0	834	2249	2405	0	0	0	2268
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	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	0.0	0.0	14.2	6.3	5.1	0.0	0.0	0.0	5.8
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.0	0.0	9.0	0.2	0.2	0.0	0.0	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	0.0	0.0	0.0	0.1	0.5	0.4	0.0	0.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	0.0	0.0	0.0	23.2	6.5	5.3	0.0	0.0	0.0	6.5
LnGrp LOS	B	A	A	A	A	C	A	A	A	A	A	A
Approach Vol, veh/h		74			4			222			221	
Approach Delay, s/veh		14.6			23.2			5.9			6.5	
Approach LOS		B			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.8		7.2		16.8		4.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		25.5		55.5		15.5				
Max Q Clear Time (g_c+I1), s		7.2		3.3		5.8		2.1				
Green Ext Time (p_c), s		2.0		0.3		2.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			7.5									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	170	19	83	13	29	3	923	0	85	666	1
Future Volume (veh/h)	39	170	19	83	13	29	3	923	0	85	666	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1522	1522	1522	1585	1585	0	1585	1585	1585
Adj Flow Rate, veh/h	41	177	20	86	14	0	3	961	0	89	694	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	4	7	7	7	2	2	0	2	2	2
Cap, veh/h	72	271	226	208	303		7	1256	0	113	1503	2
Arrive On Green	0.05	0.17	0.17	0.07	0.20	0.00	0.00	0.42	0.00	0.07	0.49	0.49
Sat Flow, veh/h	1485	1560	1303	2812	1522	1290	1509	3091	0	1509	3085	4
Grp Volume(v), veh/h	41	177	20	86	14	0	3	961	0	89	339	356
Grp Sat Flow(s),veh/h/ln	1485	1560	1303	1406	1522	1290	1509	1506	0	1509	1506	1584
Q Serve(g_s), s	1.7	6.7	0.8	1.9	0.5	0.0	0.1	17.3	0.0	3.7	9.4	9.4
Cycle Q Clear(g_c), s	1.7	6.7	0.8	1.9	0.5	0.0	0.1	17.3	0.0	3.7	9.4	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	72	271	226	208	303		7	1256	0	113	733	772
V/C Ratio(X)	0.57	0.65	0.09	0.41	0.05		0.41	0.77	0.00	0.79	0.46	0.46
Avail Cap(c_a), veh/h	1313	689	576	710	384		381	4064	0	381	2032	2138
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	24.4	22.0	28.0	20.5	0.0	31.4	15.8	0.0	28.8	10.8	10.8
Incr Delay (d2), s/veh	6.8	2.7	0.2	1.3	0.1	0.0	12.9	0.7	0.0	4.5	0.3	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(95%),veh/ln	1.3	4.6	0.5	1.2	0.3	0.0	0.1	9.1	0.0	2.5	4.9	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	27.0	22.1	29.3	20.6	0.0	44.3	16.6	0.0	33.3	11.1	11.1
LnGrp LOS	D	C	C	C	C		D	B	A	C	B	B
Approach Vol, veh/h		238			100			964			784	
Approach Delay, s/veh		28.2			28.1			16.6			13.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	35.4	8.7	15.0	8.7	30.9	7.1	16.6
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	85.5	16.0	28.0	16.0	85.5	56.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	11.4	3.9	8.7	5.7	19.3	3.7	2.5
Green Ext Time (p_c), s	0.0	3.9	0.2	1.0	0.1	7.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR] 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)	23	22	14	8	1	7	12	1179	67	19	795	17
Future Volume (veh/h)	23	22	14	8	1	7	12	1179	67	19	795	17
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		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	1572	1572	1572	1447	1447	1447	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	24	23	15	8	1	7	13	1241	71	20	837	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, %	3	3	3	13	13	13	2	2	2	2	2	2
Cap, veh/h	36	34	22	41	5	33	29	1816	810	42	2458	53
Arrive On Green	0.06	0.06	0.06	0.03	0.03	0.03	0.02	0.60	0.60	0.03	0.61	0.61
Sat Flow, veh/h	572	548	357	1378	155	1087	1509	3011	1343	1509	4019	86
Grp Volume(v), veh/h	62	0	0	8	0	8	13	1241	71	20	528	327
Grp Sat Flow(s),veh/h/ln	1477	0	0	1378	0	1243	1509	1506	1343	1509	1268	1569
Q Serve(g_s), s	2.7	0.0	0.0	0.4	0.0	0.4	0.6	18.1	1.4	0.8	6.6	6.7
Cycle Q Clear(g_c), s	2.7	0.0	0.0	0.4	0.0	0.4	0.6	18.1	1.4	0.8	6.6	6.7
Prop In Lane	0.39		0.24	1.00		0.88	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	92	0	0	41	0	37	29	1816	810	42	1551	960
V/C Ratio(X)	0.68	0.00	0.00	0.19	0.00	0.21	0.45	0.68	0.09	0.47	0.34	0.34
Avail Cap(c_a), veh/h	363	0	0	1388	0	1252	360	3937	1756	360	3315	2052
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	0.0	30.8	0.0	30.8	31.5	8.7	5.4	31.1	6.2	6.2
Incr Delay (d2), s/veh	8.3	0.0	0.0	1.7	0.0	2.1	3.9	0.7	0.1	3.0	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.0	0.0	0.2	0.0	0.3	0.4	7.2	0.5	0.6	2.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	0.0	0.0	32.4	0.0	32.9	35.5	9.4	5.5	34.2	6.4	6.5
LnGrp LOS	D	A	A	C	A	C	D	A	A	C	A	A
Approach Vol, veh/h		62			16			1325			875	
Approach Delay, s/veh		38.2			32.7			9.4			7.1	
Approach LOS		D			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	44.8		6.5	6.3	44.2		8.0
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.0
Max Green Setting (Gmax), s	15.5	85.0		65.5	15.5	85.0		16.0
Max Q Clear Time (g_c+I1), s	2.6	8.7		2.4	2.8	20.1		4.7
Green Ext Time (p_c), s	0.0	10.5		0.0	0.0	19.1		0.2

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

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	155	3	67	115	105	8	41	118	35	20	4
Future Volume (veh/h)	4	155	3	67	115	105	8	41	118	35	20	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1409	1409	1409	1510	1510	1510	1560	1560	1560	1497	1497	1497
Adj Flow Rate, veh/h	5	180	3	78	134	122	9	48	0	41	23	5
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	16	16	16	8	8	8	4	4	4	9	9	9
Cap, veh/h	11	382	6	141	227	207	422	210		399	161	35
Arrive On Green	0.01	0.28	0.28	0.10	0.31	0.31	0.13	0.13	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1342	1382	23	1438	728	663	1360	1560	1322	1282	1191	259
Grp Volume(v), veh/h	5	0	183	78	0	256	9	48	0	41	0	28
Grp Sat Flow(s),veh/h/ln	1342	0	1405	1438	0	1390	1360	1560	1322	1282	0	1450
Q Serve(g_s), s	0.1	0.0	3.0	1.4	0.0	4.3	0.2	0.8	0.0	0.8	0.0	0.5
Cycle Q Clear(g_c), s	0.1	0.0	3.0	1.4	0.0	4.3	0.6	0.8	0.0	1.6	0.0	0.5
Prop In Lane	1.00		0.02	1.00		0.48	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	11	0	388	141	0	433	422	210		399	0	196
V/C Ratio(X)	0.46	0.00	0.47	0.55	0.00	0.59	0.02	0.23		0.10	0.00	0.14
Avail Cap(c_a), veh/h	1195	0	2273	1620	0	1820	1524	1474		1671	0	1635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	8.3	11.8	0.0	8.0	10.8	10.6	0.0	11.3	0.0	10.5
Incr Delay (d2), s/veh	36.8	0.0	1.3	4.8	0.0	1.8	0.0	0.8	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	1.2	0.9	0.0	1.6	0.1	0.4	0.0	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	9.5	16.6	0.0	9.8	10.8	11.4	0.0	11.5	0.0	11.1
LnGrp LOS	D	A	A	B	A	A	B	B		B	A	B
Approach Vol, veh/h		188			334			57			69	
Approach Delay, s/veh		10.6			11.4			11.3			11.3	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	14.1		7.7	6.7	13.1		7.7				
Change Period (Y+Rc), s	5.5	* 5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	24.5	* 36		26.0	31.0	44.5		31.0				
Max Q Clear Time (g_c+I1), s	2.1	6.3		2.8	3.4	5.0		3.6				
Green Ext Time (p_c), s	0.0	2.3		0.3	0.3	1.6		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			11.2
HCM 6th LOS			B

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	305	11	69	398	150	10	6	113	67	8	30
Future Volume (veh/h)	7	305	11	69	398	150	10	6	113	67	8	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	1510	1510	1510	1522	1522	1522	1346	1346	1346
Adj Flow Rate, veh/h	8	332	12	75	433	0	11	7	0	73	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	7	8	8	8	7	7	7	21	21	21
Cap, veh/h	19	808	29	137	1051		423	186		407	165	
Arrive On Green	0.01	0.28	0.28	0.10	0.37	0.00	0.12	0.12	0.00	0.12	0.12	0.00
Sat Flow, veh/h	1450	2847	103	1438	2868	1279	1347	1522	0	1194	1346	0
Grp Volume(v), veh/h	8	168	176	75	433	0	11	7	0	73	9	0
Grp Sat Flow(s),veh/h/ln	1450	1446	1503	1438	1434	1279	1347	1522	0	1194	1346	0
Q Serve(g_s), s	0.1	2.6	2.6	1.3	3.1	0.0	0.2	0.1	0.0	1.6	0.2	0.0
Cycle Q Clear(g_c), s	0.1	2.6	2.6	1.3	3.1	0.0	0.4	0.1	0.0	1.7	0.2	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	19	410	427	137	1051		423	186		407	165	
V/C Ratio(X)	0.43	0.41	0.41	0.55	0.41		0.03	0.04		0.18	0.05	
Avail Cap(c_a), veh/h	562	2162	2247	1618	6405		1774	1714		1605	1516	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	7.9	7.9	11.7	6.4	0.0	10.7	10.5	0.0	11.2	10.5	0.0
Incr Delay (d2), s/veh	20.4	0.9	0.9	4.7	0.3	0.0	0.1	0.2	0.0	0.4	0.3	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(95%),veh/ln	0.3	1.0	1.0	0.9	0.8	0.0	0.1	0.1	0.0	0.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	8.8	8.8	16.4	6.7	0.0	10.7	10.7	0.0	11.7	10.8	0.0
LnGrp LOS	C	A	A	B	A		B	B		B	B	
Approach Vol, veh/h		352			508			18			82	
Approach Delay, s/veh		9.4			8.2			10.7			11.6	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	14.4		7.8	7.1	12.2		7.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.5	60.5		30.5	30.5	40.5		30.5
Max Q Clear Time (g_c+I1), s	2.1	5.1		2.4	3.3	4.6		3.7
Green Ext Time (p_c), s	0.0	3.8		0.1	0.3	3.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, WBR, SBR] 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)	253	223	82	6	107	2	108	55	9	10	29	188
Future Volume (veh/h)	253	223	82	6	107	2	108	55	9	10	29	188
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1535	1535	1535	1560	1560	1560	1547	1547	1547
Adj Flow Rate, veh/h	253	225	83	6	108	2	109	56	9	10	29	190
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	5	5	5
Cap, veh/h	298	662	236	14	353	7	144	74	190	71	207	238
Arrive On Green	0.20	0.31	0.31	0.01	0.12	0.12	0.14	0.14	0.14	0.18	0.18	0.18
Sat Flow, veh/h	1485	2125	758	1462	2929	54	997	512	1319	392	1136	1309
Grp Volume(v), veh/h	253	155	153	6	54	56	165	0	9	39	0	190
Grp Sat Flow(s),veh/h/ln	1485	1482	1401	1462	1458	1525	1510	0	1319	1528	0	1309
Q Serve(g_s), s	8.4	4.1	4.3	0.2	1.7	1.7	5.4	0.0	0.3	1.1	0.0	7.1
Cycle Q Clear(g_c), s	8.4	4.1	4.3	0.2	1.7	1.7	5.4	0.0	0.3	1.1	0.0	7.1
Prop In Lane	1.00		0.54	1.00		0.04	0.66		1.00	0.26		1.00
Lane Grp Cap(c), veh/h	298	462	437	14	176	184	217	0	190	278	0	238
V/C Ratio(X)	0.85	0.33	0.35	0.43	0.31	0.31	0.76	0.00	0.05	0.14	0.00	0.80
Avail Cap(c_a), veh/h	364	1220	1154	172	1015	1061	503	0	440	509	0	436
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	19.6	13.5	13.6	25.1	20.5	20.5	21.0	0.0	18.8	17.5	0.0	20.0
Incr Delay (d2), s/veh	14.5	0.4	0.5	19.3	1.0	0.9	5.4	0.0	0.1	0.2	0.0	6.1
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(95%),veh/ln	6.7	2.2	2.2	0.3	1.0	1.1	3.7	0.0	0.2	0.7	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	13.9	14.1	44.4	21.4	21.4	26.3	0.0	18.9	17.7	0.0	26.0
LnGrp LOS	C	B	B	D	C	C	C	A	B	B	A	C
Approach Vol, veh/h		561			116			174			229	
Approach Delay, s/veh		23.1			22.6			25.9			24.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	20.4		13.8	14.7	10.6		11.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.0	42.0		17.0	12.5	35.5		17.0				
Max Q Clear Time (g_c+I1), s	2.2	6.3		9.1	10.4	3.7		7.4				
Green Ext Time (p_c), s	0.0	1.9		0.5	0.2	0.6		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	5	115	0	0	96
Future Vol, veh/h	67	5	115	0	0	96
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	10	10	24	24
Mvmt Flow	88	7	151	0	0	126
Number of Lanes	1	0	1	0	0	1

Approach	WB		NB			SB
Opposing Approach			SB			NB
Opposing Lanes	0		1			1
Conflicting Approach Left	NB					WB
Conflicting Lanes Left	1		0			1
Conflicting Approach Right	SB		WB			
Conflicting Lanes Right	1		1			0
HCM Control Delay	8.4		8.5			8.7
HCM LOS	A		A			A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	93%	0%
Vol Thru, %	100%	0%	100%
Vol Right, %	0%	7%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	115	72	96
LT Vol	0	67	0
Through Vol	115	0	96
RT Vol	0	5	0
Lane Flow Rate	151	95	126
Geometry Grp	1	1	1
Degree of Util (X)	0.187	0.125	0.165
Departure Headway (Hd)	4.45	4.746	4.707
Convergence, Y/N	Yes	Yes	Yes
Cap	810	757	764
Service Time	2.463	2.763	2.722
HCM Lane V/C Ratio	0.186	0.125	0.165
HCM Control Delay	8.5	8.4	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.4	0.6

Intersection						
Int Delay, s/veh	3.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	73	58	134	146	98
Future Vol, veh/h	37	73	58	134	146	98
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	7	7	5	5	4	4
Mvmt Flow	55	109	87	200	218	146

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	669	295	366	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.15	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.245	-	-	-
Pot Cap-1 Maneuver	415	733	1176	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	379	731	1174	-	-	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1174	-	557	-	-
HCM Lane V/C Ratio	0.074	-	0.295	-	-
HCM Control Delay (s)	8.3	0	14.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	14	67	1	0	94	10	0	9	1	0	2	59
Future Vol, veh/h	14	67	1	0	94	10	0	9	1	0	2	59
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	8	8	8
Mvmt Flow	19	92	1	0	129	14	0	12	1	0	3	81
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	8	7.6	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	17%	0%	0%
Vol Thru, %	90%	82%	90%	3%
Vol Right, %	10%	1%	10%	97%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	82	104	61
LT Vol	0	14	0	0
Through Vol	9	67	94	2
RT Vol	1	1	10	59
Lane Flow Rate	14	112	142	84
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.133	0.163	0.094
Departure Headway (Hd)	4.494	4.257	4.114	4.035
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	801	831	860	893
Service Time	2.497	2.338	2.193	2.035
HCM Lane V/C Ratio	0.017	0.135	0.165	0.094
HCM Control Delay	7.6	8	8	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.6	0.3

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	21	102	13	17	0	87	46	17	4	29	7
Future Vol, veh/h	5	21	102	13	17	0	87	46	17	4	29	7
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	5	5	5	5	5	5	2	2	2	19	19	19
Mvmt Flow	7	28	134	17	22	0	114	61	22	5	38	9
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	8.7	8.9	9.1	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	43%	100%	0%
Vol Thru, %	0%	73%	0%	17%	57%	0%	81%
Vol Right, %	0%	27%	0%	83%	0%	0%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	63	5	123	30	4	36
LT Vol	87	0	5	0	13	4	0
Through Vol	0	46	0	21	17	0	29
RT Vol	0	17	0	102	0	0	7
Lane Flow Rate	114	83	7	162	39	5	47
Geometry Grp	5	5	5	5	4b	5	5
Degree of Util (X)	0.178	0.113	0.011	0.211	0.061	0.009	0.071
Departure Headway (Hd)	5.604	4.912	5.783	4.698	5.522	6.05	5.41
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	640	729	620	764	649	591	661
Service Time	3.338	2.646	3.509	2.424	3.557	3.79	3.149
HCM Lane V/C Ratio	0.178	0.114	0.011	0.212	0.06	0.008	0.071
HCM Control Delay	9.6	8.3	8.6	8.7	8.9	8.8	8.6
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.6	0.4	0	0.8	0.2	0	0.2

MOVEMENT SUMMARY

Site: 74 [Wheaton Way & Manette Bridge (Site Folder: 2030 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Harkins St (WB)															
6	T1	All MCs	212	1.7	212	1.7	0.209	6.0	LOS A	1.0	25.8	0.41	0.53	0.41	34.6
16	R2	All MCs	17	1.7	17	1.7	0.209	5.8	LOS A	1.0	25.8	0.41	0.53	0.41	34.3
Approach			229	1.7	229	1.7	0.209	6.0	LOS A	1.0	25.8	0.41	0.53	0.41	34.6
North: Wheaton Way (SB)															
7u	U	All MCs	1	3.1	1	3.1	0.291	12.1	LOS B	1.6	42.0	0.43	0.56	0.43	34.2
7	L2	All MCs	15	3.1	15	3.1	0.291	10.1	LOS B	1.6	42.0	0.43	0.56	0.43	34.2
14	R2	All MCs	309	3.1	309	3.1	0.291	5.6	LOS A	1.6	42.0	0.43	0.56	0.43	34.5
Approach			324	3.1	324	3.1	0.291	5.9	LOS A	1.6	42.0	0.43	0.56	0.43	34.5
West: Manette Bridge (EB)															
5	L2	All MCs	260	6.2	260	6.2	0.295	9.1	LOS A	1.8	46.3	0.11	0.59	0.11	33.3
2	T1	All MCs	117	6.2	117	6.2	0.295	4.8	LOS A	1.8	46.3	0.11	0.59	0.11	33.9
Approach			377	6.2	377	6.2	0.295	7.8	LOS A	1.8	46.3	0.11	0.59	0.11	33.5
All Vehicles			930	4.0	930	4.0	0.295	6.7	LOS A	1.8	46.3	0.30	0.57	0.30	34.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	105	3	0	0	0	0	0	0	43
Future Vol, veh/h	0	0	0	105	3	0	0	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	4	0	0	0	0	0	0	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	9	9	9
Mvmt Flow	0	0	0	118	3	0	0	0	0	0	0	48

Major/Minor	Major2			Minor2		
Conflicting Flow All	4	0	0	-	-	8
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.227	-	-	-	-	3.381
Pot Cap-1 Maneuver	1611	-	0	0	0	1054
Stage 1	-	-	0	0	0	-
Stage 2	-	-	0	0	0	-
Platoon blocked, %		-				
Mov Cap-1 Maneuver	1611	-	-	-	0	1054
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB	SB
HCM Control Delay, s	7.2	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBL	WBT	SBLn1
Capacity (veh/h)	1611	-	1054
HCM Lane V/C Ratio	0.073	-	0.046
HCM Control Delay (s)	7.4	0	8.6
HCM Lane LOS	A	A	A
HCM 95th %tile Q(veh)	0.2	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	22	80	13	9	165
Future Vol, veh/h	20	22	80	13	9	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	5	3	3	1	1
Mvmt Flow	25	27	99	16	11	204

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	333	107	0	0	115	0
Stage 1	107	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.11	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.209	-
Pot Cap-1 Maneuver	656	939	-	-	1480	-
Stage 1	910	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	651	939	-	-	1480	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	776	1480	-
HCM Lane V/C Ratio	-	-	0.067	0.008	-
HCM Control Delay (s)	-	-	10	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	210	46	17	202	8	10	3	10	10	21	10
Future Vol, veh/h	3	210	46	17	202	8	10	3	10	10	21	10
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	4	4	4	6	6	6	10	10	10	0	0	0
Mvmt Flow	4	250	55	20	240	10	12	4	12	12	25	12
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	11	10.3	8.6	8.7
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	43%	100%	0%	100%	0%	24%
Vol Thru, %	13%	0%	82%	0%	96%	51%
Vol Right, %	43%	0%	18%	0%	4%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	3	256	17	210	41
LT Vol	10	3	0	17	0	10
Through Vol	3	0	210	0	202	21
RT Vol	10	0	46	0	8	10
Lane Flow Rate	27	4	305	20	250	49
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.041	0.005	0.412	0.031	0.349	0.071
Departure Headway (Hd)	5.346	5.497	4.869	5.549	5.02	5.214
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	668	651	741	645	718	685
Service Time	3.396	3.227	2.598	3.28	2.75	3.261
HCM Lane V/C Ratio	0.04	0.006	0.412	0.031	0.348	0.072
HCM Control Delay	8.6	8.3	11	8.5	10.4	8.7
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.1	0	2	0.1	1.6	0.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	72	1	285	31	103	0	0	114	210
Future Vol, veh/h	0	0	0	72	1	285	31	103	0	0	114	210
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	3	3	3	5	5	5	4	4	4
Mvmt Flow	0	0	0	79	1	313	34	113	0	0	125	231

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	306	306	113	125	0	-	-	-	0
Stage 1	181	181	-	-	-	-	-	-	-
Stage 2	125	125	-	-	-	-	-	-	-
Critical Hdwy	6.43	6.53	6.23	4.15	-	-	-	-	-
Critical Hdwy Stg 1	5.43	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	2.245	-	-	-	-	-
Pot Cap-1 Maneuver	684	606	937	1443	-	0	0	-	-
Stage 1	848	748	-	-	-	0	0	-	-
Stage 2	898	791	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	667	0	937	1443	-	-	-	-	-
Mov Cap-2 Maneuver	667	0	-	-	-	-	-	-	-
Stage 1	827	0	-	-	-	-	-	-	-
Stage 2	898	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1443	-	667	937	-	-
HCM Lane V/C Ratio	0.024	-	0.12	0.334	-	-
HCM Control Delay (s)	7.6	0	11.1	10.8	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	1.5	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	0	13	0	0	0	0	73	72	163	101	0
Future Vol, veh/h	94	0	13	0	0	0	0	73	72	163	101	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	0	0	0	3	3	3	4	4	4
Mvmt Flow	108	0	15	0	0	0	0	84	83	187	116	0

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	616	657	116				-	0	0	167	0	0
Stage 1	490	490	-				-	-	-	-	-	-
Stage 2	126	167	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.236	-	-
Pot Cap-1 Maneuver	454	385	936				0	-	-	1399	-	0
Stage 1	616	549	-				0	-	-	-	-	0
Stage 2	900	760	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	389	0	936				-	-	-	1399	-	-
Mov Cap-2 Maneuver	389	0	-				-	-	-	-	-	-
Stage 1	616	0	-				-	-	-	-	-	-
Stage 2	771	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0	4.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	419	1399	-
HCM Lane V/C Ratio	-	-	0.294	0.134	-
HCM Control Delay (s)	-	-	17.1	8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.5	-

Intersection	
Int Delay, s/veh	13.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	387	114	148	452	0	0	0	0	154	0	137
Future Vol, veh/h	0	387	114	148	452	0	0	0	0	154	0	137
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	175	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	421	124	161	491	0	0	0	0	167	0	149

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	-	421	0	0	1024	1234	246
Stage 1	-	-	-	-	-	-	813	813	-
Stage 2	-	-	-	-	-	-	211	421	-
Critical Hdwy	-	-	-	4.14	-	-	6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	0	1135	-	0	231	175	754
Stage 1	0	-	0	-	-	0	396	390	-
Stage 2	0	-	0	-	-	0	804	587	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	1135	-	-	186	0	754
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	0	-
Stage 1	-	-	-	-	-	-	396	0	-
Stage 2	-	-	-	-	-	-	647	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	54.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	1135	-	186	754
HCM Lane V/C Ratio	-	0.142	-	0.9	0.197
HCM Control Delay (s)	-	8.7	0.5	93.2	10.9
HCM Lane LOS	-	A	A	F	B
HCM 95th %tile Q(veh)	-	0.5	-	6.8	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	338	0	0	303	115	351	1	198	0	0	0
Future Volume (veh/h)	170	338	0	0	303	115	351	1	198	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1535	1535	0	0	1547	1547	1522	1522	1522			
Adj Flow Rate, veh/h	175	348	0	0	312	0	362	1	204			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	6	6	0	0	5	5	7	7	7			
Cap, veh/h	0	957	0	0	965		534	1	477			
Arrive On Green	0.00	0.33	0.00	0.00	0.33	0.00	0.37	0.37	0.37			
Sat Flow, veh/h	0	2993	0	0	3094	0	1446	4	1290			
Grp Volume(v), veh/h	0	348	0	0	312	0	363	0	204			
Grp Sat Flow(s),veh/h/ln	0	1458	0	0	1470	0	1450	0	1290			
Q Serve(g_s), s	0.0	2.8	0.0	0.0	2.4	0.0	6.4	0.0	3.6			
Cycle Q Clear(g_c), s	0.0	2.8	0.0	0.0	2.4	0.0	6.4	0.0	3.6			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	957	0	0	965		536	0	477			
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.32		0.68	0.00	0.43			
Avail Cap(c_a), veh/h	0	6165	0	0	3841		1438	0	1279			
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	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.8	0.0	0.0	7.7	0.0	8.1	0.0	7.2			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	1.5	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	1.0	0.0	0.0	0.9	0.0	2.3	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	0.0	0.0	7.9	0.0	9.6	0.0	7.8			
LnGrp LOS	A	A	A	A	A		A	A	A			
Approach Vol, veh/h		348			312			567				
Approach Delay, s/veh		8.0			7.9			8.9				
Approach LOS		A			A			A				
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	0.0	14.6		15.9		14.6						
Change Period (Y+Rc), s	4.6	4.6		4.6		4.6						
Max Green Setting (Gmax), s	20.0	39.8		30.2		64.4						
Max Q Clear Time (g_c+I1), s	0.0	4.4		8.4		4.8						
Green Ext Time (p_c), s	0.0	2.1		2.9		2.5						

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] 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)	33	0	31	6	0	0	24	936	13	5	982	19
Future Volume (veh/h)	33	0	31	6	0	0	24	936	13	5	982	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		1.00	1.00		0.98	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	1447	1447	1447	1610	1610	1610	1560	1560	1560	1560	1560	1560
Adj Flow Rate, veh/h	38	0	36	7	0	0	28	1076	15	6	1129	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	13	13	13	0	0	0	4	4	4	4	4	4
Cap, veh/h	128	0	73	95	97	0	436	2532	35	449	2468	48
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.00	0.02	0.85	0.85	0.01	0.83	0.83
Sat Flow, veh/h	1268	0	1202	1374	1610	0	1485	2991	42	1485	2973	58
Grp Volume(v), veh/h	38	0	36	7	0	0	28	533	558	6	563	588
Grp Sat Flow(s),veh/h/ln	1268	0	1202	1374	1610	0	1485	1482	1551	1485	1482	1549
Q Serve(g_s), s	4.1	0.0	4.1	0.7	0.0	0.0	0.4	12.1	12.1	0.1	14.6	14.6
Cycle Q Clear(g_c), s	4.1	0.0	4.1	4.8	0.0	0.0	0.4	12.1	12.1	0.1	14.6	14.6
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	128	0	73	95	97	0	436	1254	1313	449	1230	1286
V/C Ratio(X)	0.30	0.00	0.50	0.07	0.00	0.00	0.06	0.42	0.42	0.01	0.46	0.46
Avail Cap(c_a), veh/h	323	0	258	306	345	0	507	1254	1313	544	1230	1286
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	0.00	0.85	0.85	0.85	0.93	0.93	0.93
Uniform Delay (d), s/veh	63.7	0.0	63.7	66.0	0.0	0.0	2.3	2.6	2.6	2.2	3.3	3.3
Incr Delay (d2), s/veh	1.3	0.0	5.2	0.3	0.0	0.0	0.1	0.9	0.9	0.0	1.1	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(95%),veh/ln	2.5	0.0	2.4	0.5	0.0	0.0	0.1	5.2	5.4	0.0	6.8	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	0.0	68.9	66.3	0.0	0.0	2.4	3.5	3.4	2.2	4.4	4.3
LnGrp LOS	E	A	E	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		74			7			1119			1157	
Approach Delay, s/veh		66.9			66.3			3.4			4.4	
Approach LOS		E			E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	122.5		12.5	7.3	120.2		12.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	88.0		30.0	10.0	88.0		30.0				
Max Q Clear Time (g_c+I1), s	2.1	14.1		6.1	2.4	16.6		6.8				
Green Ext Time (p_c), s	0.0	9.7		0.3	0.0	10.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	682	338	14	363	8	291	98	67	144	188	27
Future Volume (veh/h)	19	682	338	14	363	8	291	98	67	144	188	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1510	1510	1510	1497	1497	1497	1484	1484	1484	1535	1535	1535
Adj Flow Rate, veh/h	21	766	0	16	408	9	327	110	75	162	211	30
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	10	10	10	6	6	6
Cap, veh/h	23	656		19	630	14	350	225	153	183	234	199
Arrive On Green	0.02	0.43	0.00	0.01	0.43	0.43	0.25	0.27	0.27	0.12	0.15	0.15
Sat Flow, veh/h	1438	1510	1279	1426	1459	32	1414	823	561	1462	1535	1301
Grp Volume(v), veh/h	21	766	0	16	0	417	327	0	185	162	211	30
Grp Sat Flow(s),veh/h/ln	1438	1510	1279	1426	0	1491	1414	0	1383	1462	1535	1301
Q Serve(g_s), s	1.9	57.9	0.0	1.5	0.0	29.4	30.2	0.0	14.9	14.5	18.0	2.7
Cycle Q Clear(g_c), s	1.9	57.9	0.0	1.5	0.0	29.4	30.2	0.0	14.9	14.5	18.0	2.7
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	23	656		19	0	644	350	0	378	183	234	199
V/C Ratio(X)	0.90	1.17		0.84	0.00	0.65	0.93	0.00	0.49	0.89	0.90	0.15
Avail Cap(c_a), veh/h	43	656		43	0	654	413	0	431	234	276	234
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.4	37.7	0.0	65.6	0.0	29.9	49.1	0.0	40.6	57.4	55.4	48.9
Incr Delay (d2), s/veh	51.9	91.2	0.0	47.1	0.0	2.9	27.0	0.0	0.7	26.0	26.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	52.4	0.0	1.4	0.0	16.1	19.0	0.0	8.8	10.9	13.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.3	128.9	0.0	112.6	0.0	32.8	76.0	0.0	41.4	83.3	81.7	49.2
LnGrp LOS	F	F		F	A	C	E	A	D	F	F	D
Approach Vol, veh/h		787			433			512			403	
Approach Delay, s/veh		128.6			35.7			63.5			79.9	
Approach LOS		F			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	63.3	38.1	25.5	6.8	62.9	22.0	41.5
Change Period (Y+Rc), s	4.6	5.4	5.1	5.1	4.6	* 5.4	5.4	* 5.1
Max Green Setting (Gmax), s	4.0	57.9	38.9	24.0	4.0	* 58	21.3	* 42
Max Q Clear Time (g_c+I1), s	3.5	59.9	32.2	20.0	3.9	31.4	16.5	16.9
Green Ext Time (p_c), s	0.0	0.0	0.8	0.4	0.0	4.7	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	84.9
HCM 6th LOS	F

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)	49	1	11	1	2	4	41	791	6	18	422	8
Future Volume (veh/h)	49	1	11	1	2	4	41	791	6	18	422	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1020	1020	1020	1610	1610	1610	1547	1547	1547	1510	1510	1510
Adj Flow Rate, veh/h	52	1	12	1	2	0	43	833	6	19	444	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, %	47	47	47	0	0	0	5	5	5	8	8	8
Cap, veh/h	193	5	64	152	38		537	904	766	218	846	717
Arrive On Green	0.06	0.08	0.08	0.00	0.02	0.00	0.05	0.58	0.58	0.03	0.56	0.56
Sat Flow, veh/h	971	67	807	1533	1610	1364	1474	1547	1311	1438	1510	1279
Grp Volume(v), veh/h	52	0	13	1	2	0	43	833	6	19	444	8
Grp Sat Flow(s),veh/h/ln	971	0	874	1533	1610	1364	1474	1547	1311	1438	1510	1279
Q Serve(g_s), s	3.1	0.0	0.9	0.0	0.1	0.0	0.7	29.9	0.1	0.3	11.3	0.2
Cycle Q Clear(g_c), s	3.1	0.0	0.9	0.0	0.1	0.0	0.7	29.9	0.1	0.3	11.3	0.2
Prop In Lane	1.00		0.92	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	0	69	152	38		537	904	766	218	846	717
V/C Ratio(X)	0.27	0.00	0.19	0.01	0.05		0.08	0.92	0.01	0.09	0.52	0.01
Avail Cap(c_a), veh/h	357	0	383	299	496		804	1041	882	796	1314	1113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	26.6	29.3	29.5	0.0	5.9	11.5	5.4	12.1	8.4	6.0
Incr Delay (d2), s/veh	0.7	0.0	1.3	0.0	0.6	0.0	0.1	11.9	0.0	0.2	0.5	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(95%),veh/ln	1.3	0.0	0.4	0.0	0.1	0.0	0.3	16.5	0.0	0.2	5.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	27.9	29.4	30.0	0.0	5.9	23.4	5.4	12.2	8.9	6.0
LnGrp LOS	C	A	C	C	C		A	C	A	B	A	A
Approach Vol, veh/h		65			3			882			471	
Approach Delay, s/veh		27.1			29.8			22.4			9.0	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	42.1	4.1	9.4	7.6	40.6	7.5	5.9
Change Period (Y+Rc), s	4.5	6.0	4.0	4.5	4.5	6.0	4.0	4.5
Max Green Setting (Gmax), s	26.5	41.5	6.0	27.0	14.3	53.7	14.0	19.0
Max Q Clear Time (g_c+I1), s	2.3	31.9	2.0	2.9	2.7	13.3	5.1	2.1
Green Ext Time (p_c), s	0.0	4.1	0.0	0.0	0.0	3.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR] 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)	2	135	28	6	72	13	24	6	7	14	21	11
Future Volume (veh/h)	2	135	28	6	72	13	24	6	7	14	21	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	1484	1484	1484	1472	1472	1472	1547	1547	1547
Adj Flow Rate, veh/h	3	178	37	8	95	17	32	8	9	18	28	14
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	7	7	7	10	10	10	11	11	11	5	5	5
Cap, veh/h	191	325	67	211	316	54	531	117	77	311	286	108
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	9	1215	250	47	1181	203	702	369	241	216	899	339
Grp Volume(v), veh/h	218	0	0	120	0	0	49	0	0	60	0	0
Grp Sat Flow(s),veh/h/ln	1474	0	0	1430	0	0	1312	0	0	1455	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	1.3	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.01		0.17	0.07		0.14	0.65		0.18	0.30		0.23
Lane Grp Cap(c), veh/h	584	0	0	582	0	0	725	0	0	705	0	0
V/C Ratio(X)	0.37	0.00	0.00	0.21	0.00	0.00	0.07	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	2551	0	0	2472	0	0	2385	0	0	2541	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	5.6	0.0	0.0	4.7	0.0	0.0	4.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	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(95%),veh/ln	0.7	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	5.8	0.0	0.0	4.7	0.0	0.0	4.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		218			120			49			60	
Approach Delay, s/veh		6.5			5.8			4.7			4.7	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.1		9.2		10.1		9.2				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		31.0		31.0		31.0		31.0				
Max Q Clear Time (g_c+I1), s		2.5		4.5		2.6		3.3				
Green Ext Time (p_c), s		0.2		1.4		0.3		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			5.9									
HCM 6th LOS			A									

MOVEMENT SUMMARY

Site: 328 [SR 3 & Ariport Rd (Site Folder: 2030 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SR 3															
8	T1	All MCs	801	8.0	801	8.0	0.670	5.6	LOS A	5.7	151.0	0.31	0.44	0.31	37.1
18	R2	All MCs	26	8.0	26	8.0	0.670	5.4	LOS A	5.7	151.0	0.31	0.44	0.31	29.5
Approach			827	8.0	827	8.0	0.670	5.6	LOS A	5.7	151.0	0.31	0.44	0.31	36.8
East: Ariport Rd															
1	L2	All MCs	20	7.0	20	7.0	0.087	9.4	LOS A	0.4	11.1	0.64	0.66	0.64	27.3
16	R2	All MCs	42	7.0	42	7.0	0.087	5.5	LOS A	0.4	11.1	0.64	0.66	0.64	27.5
Approach			62	7.0	62	7.0	0.087	6.8	LOS A	0.4	11.1	0.64	0.66	0.64	27.4
North: SR 3															
7	L2	All MCs	51	8.0	51	8.0	0.452	10.8	LOS B	2.9	76.7	0.14	0.45	0.14	29.6
4	T1	All MCs	521	8.0	521	8.0	0.452	5.1	LOS A	2.9	76.7	0.14	0.45	0.14	37.7
Approach			572	8.0	572	8.0	0.452	5.6	LOS A	2.9	76.7	0.14	0.45	0.14	36.8
All Vehicles			1461	8.0	1461	8.0	0.670	5.7	LOS A	5.7	151.0	0.26	0.45	0.26	36.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

HCM 6th Signalized Intersection Summary
2: Auto Center Way/SR 3 SB Off-Ramp & Kitsap Way/Kitsap Way (SR 310)

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	604	465	392	525	0	71	0	290	564	308	8
Future Volume (veh/h)	0	604	465	392	525	0	71	0	290	564	308	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1560	1560	1560	1560	0	1535	0	1535	1560	1560	1560
Adj Flow Rate, veh/h	0	616	474	400	536	0	72	0	0	445	497	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	4	4	4	4	0	6	0	6	4	4	4
Cap, veh/h	0	1190	527	454	1746	0	0	0		521	547	
Arrive On Green	0.00	0.40	0.40	0.16	0.59	0.00	0.00	0.00	0.00	0.35	0.35	0.00
Sat Flow, veh/h	0	3042	1314	2882	3042	0		0		1485	1560	1322
Grp Volume(v), veh/h	0	616	474	400	536	0		0.0		445	497	0
Grp Sat Flow(s),veh/h/ln	0	1482	1314	1441	1482	0				1485	1560	1322
Q Serve(g_s), s	0.0	23.6	50.7	20.4	13.6	0.0				41.6	45.5	0.0
Cycle Q Clear(g_c), s	0.0	23.6	50.7	20.4	13.6	0.0				41.6	45.5	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1190	527	454	1746	0				521	547	
V/C Ratio(X)	0.00	0.52	0.90	0.88	0.31	0.00				0.85	0.91	
Avail Cap(c_a), veh/h	0	1190	527	567	1746	0				629	660	
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	0.90	0.90	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	33.9	42.0	61.8	15.5	0.0				45.1	46.4	0.0
Incr Delay (d2), s/veh	0.0	1.6	20.8	12.7	0.4	0.0				9.9	15.1	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
%ile BackOfQ(95%),veh/ln	0.0	13.6	26.4	12.7	8.1	0.0				23.3	27.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	35.5	62.8	74.5	15.9	0.0				55.0	61.4	0.0
LnGrp LOS	A	D	E	E	B	A				E	E	
Approach Vol, veh/h		1090			936						942	
Approach Delay, s/veh		47.4			40.9						58.4	
Approach LOS		D			D						E	

Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			28.1	64.7		57.2		92.8				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			29.5	25.5		63.5		59.5				
Max Q Clear Time (g_c+I1), s			22.4	52.7		47.5		15.6				
Green Ext Time (p_c), s			1.3	0.0		5.1		4.8				

Intersection Summary			
HCM 6th Ctrl Delay			48.8
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] 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)	85	1325	0	0	803	803	187	1	147	0	0	0
Future Volume (veh/h)	85	1325	0	0	803	803	187	1	147	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1585	1585	0	0	1572	1572	1597	1597	1597			
Adj Flow Rate, veh/h	89	1380	0	0	836	0	195	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	3	3	1	1	1			
Cap, veh/h	755	2389	0	0	931		212	1				
Arrive On Green	0.90	1.00	0.00	0.00	0.52	0.00	0.14	0.14	0.00			
Sat Flow, veh/h	1509	3091	0	0	3066	1332	1514	8	1354			
Grp Volume(v), veh/h	89	1380	0	0	836	0	196	0	0			
Grp Sat Flow(s),veh/h/ln	1509	1506	0	0	1494	1332	1522	0	1354			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	37.8	0.0	19.1	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	37.8	0.0	19.1	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	755	2389	0	0	931		213	0				
V/C Ratio(X)	0.12	0.58	0.00	0.00	0.90		0.92	0.00				
Avail Cap(c_a), veh/h	755	2389	0	0	2012		213	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00			
Upstream Filter(I)	0.41	0.41	0.00	0.00	0.66	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	3.7	0.0	0.0	0.0	33.8	0.0	63.7	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	9.3	0.0	40.2	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			
%ile BackOfQ(95%),veh/ln	0.6	0.3	0.0	0.0	17.6	0.0	14.9	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.7	0.4	0.0	0.0	43.1	0.0	103.8	0.0	0.0			
LnGrp LOS	A	A	A	A	D		F	A				
Approach Vol, veh/h		1469			836			196				
Approach Delay, s/veh		0.6			43.1			103.8				
Approach LOS		A			D			F				

Timer - Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				124.0		26.0	72.2	51.8				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				119.0		21.0	13.0	101.0				
Max Q Clear Time (g_c+I1), s				2.0		21.1	2.0	39.8				
Green Ext Time (p_c), s				16.0		0.0	0.1	7.0				

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

Notes

Unsignalized Delay for [NBR, WBR] 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)	63	1261	145	5	1475	50	61	4	23	42	3	37
Future Volume (veh/h)	63	1261	145	5	1475	50	61	4	23	42	3	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.98		0.98	0.99		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	1585	1585	1585	1585	1585	1585	1547	1547	1547	1560	1560	1560
Adj Flow Rate, veh/h	66	1314	0	5	1536	52	64	4	24	44	3	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	4	4	4
Cap, veh/h	502	2325		236	1484	644	112	11	29	170	10	152
Arrive On Green	0.57	1.00	0.00	0.02	0.99	0.99	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1509	3011	1343	1509	3011	1307	609	92	248	1056	84	1295
Grp Volume(v), veh/h	66	1314	0	5	1536	52	92	0	0	47	0	39
Grp Sat Flow(s),veh/h/ln	1509	1506	1343	1509	1506	1307	949	0	0	1140	0	1295
Q Serve(g_s), s	0.0	0.0	0.0	0.3	73.9	0.1	9.4	0.0	0.0	0.0	0.0	4.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.3	73.9	0.1	15.2	0.0	0.0	5.8	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	0.70		0.26	0.94		1.00
Lane Grp Cap(c), veh/h	502	2325		236	1484	644	152	0	0	180	0	152
V/C Ratio(X)	0.13	0.57		0.02	1.03	0.08	0.61	0.00	0.00	0.26	0.00	0.26
Avail Cap(c_a), veh/h	502	2325		325	1857	806	278	0	0	311	0	276
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.00	0.70	0.70	0.70	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	0.0	20.9	1.1	0.5	67.1	0.0	0.0	61.0	0.0	60.3
Incr Delay (d2), s/veh	0.1	0.8	0.0	0.0	29.2	0.2	3.9	0.0	0.0	0.8	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.4	0.0	0.2	10.1	0.1	6.6	0.0	0.0	3.1	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	0.8	0.0	20.9	30.3	0.7	71.0	0.0	0.0	61.8	0.0	61.2
LnGrp LOS	C	A		C	F	A	E	A	A	E	A	E
Approach Vol, veh/h		1380			1593			92			86	
Approach Delay, s/veh		1.7			29.3			71.0			61.5	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	22.6	6.1	121.3	22.6	41.2	86.2
Change Period (Y+Rc), s	5.0	5.0	5.5	5.0	5.5	* 5.5
Max Green Setting (Gmax), s	32.0	10.0	92.5	32.0	10.0	* 93
Max Q Clear Time (g_c+I1), s	17.2	2.3	2.0	7.8	2.0	75.9
Green Ext Time (p_c), s	0.4	0.0	18.6	0.3	0.1	11.5

Intersection Summary	
HCM 6th Ctrl Delay	19.3
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)	1	1215	74	109	1462	0	114	0	90	2	0	0
Future Volume (veh/h)	1	1215	74	109	1462	0	114	0	90	2	0	0
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		1.00	0.99		0.99	0.99		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	1585	1585	1585	1585	1585	1585	1572	1572	1572	1610	1610	1610
Adj Flow Rate, veh/h	1	1253	76	112	1507	0	118	0	93	2	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	0	0	0
Cap, veh/h	433	2221	970	306	1666	0	195	0	210	77	0	0
Arrive On Green	0.48	1.00	1.00	0.12	1.00	0.00	0.10	0.00	0.10	0.10	0.00	0.00
Sat Flow, veh/h	1509	3011	1315	1509	3091	0	1468	0	1316	293	0	0
Grp Volume(v), veh/h	1	1253	76	112	1507	0	118	0	93	2	0	0
Grp Sat Flow(s),veh/h/ln	1509	1506	1315	1509	1506	0	1468	0	1316	293	0	0
Q Serve(g_s), s	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	9.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.7	0.0	0.0	11.6	0.0	9.6	11.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	433	2221	970	306	1666	0	195	0	210	77	0	0
V/C Ratio(X)	0.00	0.56	0.08	0.37	0.90	0.00	0.61	0.00	0.44	0.03	0.00	0.00
Avail Cap(c_a), veh/h	433	2221	970	328	2098	0	279	0	289	156	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	0.77	0.77	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	16.9	0.0	0.0	66.0	0.0	57.1	71.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.1	0.6	6.8	0.0	3.0	0.0	1.5	0.1	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(95%),veh/ln	0.0	0.5	0.1	3.4	2.8	0.0	8.2	0.0	5.9	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.8	0.1	17.5	6.8	0.0	69.0	0.0	58.5	71.9	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	E	A	E	E	A	A
Approach Vol, veh/h		1330			1619			211			2	
Approach Delay, s/veh		0.8			7.5			64.4			71.9	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	69.5	60.5		20.0	13.3	116.7
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		24.0	6.0	* 1E2		24.0	11.0	99.5
Max Q Clear Time (g_c+I1), s		13.6	2.0	2.0		13.9	7.7	2.0
Green Ext Time (p_c), s		0.7	0.0	25.0		0.0	0.1	17.9

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Notes
* 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)	1306	53	84	1448	41	84
Future Volume (veh/h)	1306	53	84	1448	41	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1610	1610
Adj Flow Rate, veh/h	1404	57	90	1557	44	90
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	2358	1023	391	2576	119	160
Arrive On Green	1.00	1.00	0.04	0.86	0.08	0.08
Sat Flow, veh/h	3091	1307	1509	3091	1533	1364
Grp Volume(v), veh/h	1404	57	90	1557	44	90
Grp Sat Flow(s),veh/h/ln	1506	1307	1509	1506	1533	1364
Q Serve(g_s), s	0.0	0.0	1.6	23.2	4.1	9.4
Cycle Q Clear(g_c), s	0.0	0.0	1.6	23.2	4.1	9.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2358	1023	391	2576	119	160
V/C Ratio(X)	0.60	0.06	0.23	0.60	0.37	0.56
Avail Cap(c_a), veh/h	2358	1023	443	2576	348	363
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.75	0.75	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	2.2	3.2	65.7	62.6
Incr Delay (d2), s/veh	0.9	0.1	0.2	0.8	1.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	0.7	8.1	3.0	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.9	0.1	2.4	4.0	67.5	65.7
LnGrp LOS	A	A	A	A	E	E
Approach Vol, veh/h	1461			1647	134	
Approach Delay, s/veh	0.8			4.0	66.3	
Approach LOS	A			A	E	

Timer - Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			10.9	122.5		16.7		133.3
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			11.0	90.0		34.0		106.0
Max Q Clear Time (g_c+I1), s			3.6	2.0		11.4		25.2
Green Ext Time (p_c), s			0.1	21.9		0.4		25.9

Intersection Summary	
HCM 6th Ctrl Delay	5.1
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1308	123	301	1406	2	71	1	290	5	4	2
Future Volume (veh/h)	1	1308	123	301	1406	2	71	1	290	5	4	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.99		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1610	1610	1610
Adj Flow Rate, veh/h	1	1377	0	317	1480	2	75	1	13	5	4	2
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, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	2	1557		439	2475	3	139	1	142	43	27	8
Arrive On Green	0.00	0.17	0.00	0.58	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1521	3035	1354	1509	3085	4	856	14	1335	79	253	74
Grp Volume(v), veh/h	1	1377	0	317	722	760	76	0	13	11	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1354	1509	1506	1584	870	0	1335	405	0	0
Q Serve(g_s), s	0.1	66.5	0.0	22.7	0.0	0.0	0.0	0.0	1.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	66.5	0.0	22.7	0.0	0.0	14.1	0.0	1.3	14.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.45		0.18
Lane Grp Cap(c), veh/h	2	1557		439	1208	1271	140	0	142	78	0	0
V/C Ratio(X)	0.40	0.88		0.72	0.60	0.60	0.54	0.00	0.09	0.14	0.00	0.00
Avail Cap(c_a), veh/h	76	1683		439	1208	1271	174	0	174	113	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.00	0.39	0.39	0.39	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.9	58.0	0.0	27.0	0.0	0.0	66.2	0.0	60.5	60.8	0.0	0.0
Incr Delay (d2), s/veh	65.4	6.1	0.0	2.3	0.9	0.8	3.2	0.0	0.3	0.8	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(95%),veh/ln	0.2	36.2	0.0	9.0	0.5	0.5	5.4	0.0	0.8	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	140.3	64.1	0.0	29.3	0.9	0.8	69.4	0.0	60.8	61.6	0.0	0.0
LnGrp LOS	F	E		C	A	A	E	A	E	E	A	A
Approach Vol, veh/h		1378			1799			89			11	
Approach Delay, s/veh		64.1			5.9			68.2			61.6	
Approach LOS		E			A			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	20.4	48.1	81.4	20.4	4.7	124.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.5	33.8	83.2	19.5	7.5	109.5
Max Q Clear Time (g_c+I1), s	16.1	24.7	68.5	16.1	2.1	2.0
Green Ext Time (p_c), s	0.1	0.7	8.5	0.0	0.0	16.4

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

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)	170	1328	60	33	1493	100	75	38	67	99	30	137
Future Volume (veh/h)	170	1328	60	33	1493	100	75	38	67	99	30	137
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		0.99	1.00		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	177	1383	62	34	1555	104	78	40	70	103	31	143
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	233	1372	594	293	1486	659	107	147	123	272	38	174
Arrive On Green	0.31	0.90	0.90	0.19	0.49	0.49	0.04	0.09	0.09	0.10	0.16	0.16
Sat Flow, veh/h	1521	3035	1315	1509	3011	1336	1533	1610	1346	1509	243	1122
Grp Volume(v), veh/h	177	1383	62	34	1555	104	78	40	70	103	0	174
Grp Sat Flow(s),veh/h/ln	1521	1518	1315	1509	1506	1336	1533	1610	1346	1509	0	1365
Q Serve(g_s), s	15.8	67.8	0.8	2.8	74.0	6.4	2.8	3.5	7.5	0.0	0.0	18.5
Cycle Q Clear(g_c), s	15.8	67.8	0.8	2.8	74.0	6.4	2.8	3.5	7.5	0.0	0.0	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	233	1372	594	293	1486	659	107	147	123	272	0	212
V/C Ratio(X)	0.76	1.01	0.10	0.12	1.05	0.16	0.73	0.27	0.57	0.38	0.00	0.82
Avail Cap(c_a), veh/h	233	1578	684	293	1486	659	130	360	301	272	0	287
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)	0.48	0.48	0.48	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.6	7.2	4.0	49.8	38.0	20.9	69.8	63.5	65.4	57.6	0.0	61.3
Incr Delay (d2), s/veh	7.4	18.9	0.2	0.2	36.6	0.5	21.9	1.0	4.1	0.9	0.0	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.4	9.0	0.4	1.9	45.1	3.8	6.5	2.7	4.9	6.6	0.0	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	26.1	4.2	50.0	74.6	21.4	91.8	64.5	69.5	58.5	0.0	74.3
LnGrp LOS	E	F	A	D	F	C	F	E	E	E	A	E
Approach Vol, veh/h		1622			1693			188			277	
Approach Delay, s/veh		28.6			70.9			77.7			68.4	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	20.2	31.9	76.6	11.8	29.8	29.4	79.0
Change Period (Y+Rc), s	6.0	6.5	6.5	* 5	6.0	6.5	6.5	5.0
Max Green Setting (Gmax), s	6.0	33.5	9.0	* 78	8.0	31.5	12.5	74.0
Max Q Clear Time (g_c+I1), s	12.0	9.5	4.8	69.8	4.8	20.5	17.8	76.0
Green Ext Time (p_c), s	0.1	0.4	0.0	5.6	0.1	0.7	0.0	0.0

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.

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	1369	17	36	1598	17	47	0	114	39	0	36
Future Vol, veh/h	63	1369	17	36	1598	17	47	0	114	39	0	36
Conflicting Peds, #/hr	5	0	10	10	0	5	10	0	10	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	2	2	2
Mvmt Flow	65	1411	18	37	1647	18	48	0	118	40	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1670	0	0	1439	0	0	2459	3295	726	2581	3304	848
Stage 1	-	-	-	-	-	-	1551	1551	-	1735	1735	-
Stage 2	-	-	-	-	-	-	908	1744	-	846	1569	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.54	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.52	4.02	3.32
Pot Cap-1 Maneuver	385	-	-	468	-	-	~ 16	9	372	~ 13	8	305
Stage 1	-	-	-	-	-	-	121	177	-	91	140	-
Stage 2	-	-	-	-	-	-	301	142	-	323	170	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	384	-	-	464	-	-	~ 11	7	366	~ 7	6	302
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	44	-	48	55	-
Stage 1	-	-	-	-	-	-	100	146	-	75	128	-
Stage 2	-	-	-	-	-	-	241	130	-	181	140	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	159.2	182.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	152	384	-	-	464	-	-	80
HCM Lane V/C Ratio	1.092	0.169	-	-	0.08	-	-	0.966
HCM Control Delay (s)	159.2	16.3	-	-	13.4	-	-	182.6
HCM Lane LOS	F	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	8.8	0.6	-	-	0.3	-	-	5.2

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

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑	↑↱			↱↱
Traffic Volume (veh/h)	924	0	659	14	0	1021
Future Volume (veh/h)	924	0	659	14	0	1021
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	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	1585	1585	1610	1610	0	1610
Adj Flow Rate, veh/h	962	0	686	15	0	1064
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	0	0	0	0
Cap, veh/h	1623	1516	1119	24	0	0
Arrive On Green	0.55	0.00	0.73	0.73	0.00	0.00
Sat Flow, veh/h	2928	1585	3140	67	0	
Grp Volume(v), veh/h	962	0	343	358	0.0	
Grp Sat Flow(s),veh/h/ln	1464	1585	1530	1597		
Q Serve(g_s), s	32.7	0.0	16.4	16.4		
Cycle Q Clear(g_c), s	32.7	0.0	16.4	16.4		
Prop In Lane	1.00			0.04		
Lane Grp Cap(c), veh/h	1623	1516	559	584		
V/C Ratio(X)	0.59	0.00	0.61	0.61		
Avail Cap(c_a), veh/h	1623	1516	559	584		
HCM Platoon Ratio	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	22.2	0.0	15.0	15.0		
Incr Delay (d2), s/veh	0.6	0.0	2.2	2.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	16.7	0.0	7.3	7.6		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	0.0	17.1	17.1		
LnGrp LOS	C	A	B	B		
Approach Vol, veh/h		962	701			
Approach Delay, s/veh		22.8	17.1			
Approach LOS		C	B			

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	89.6	60.4				150.0
Change Period (Y+Rc), s	6.5	5.5				6.5
Max Green Setting (Gmax), s	44.5	49.5				113.5
Max Q Clear Time (g_c+I1), s	34.7	18.4				0.0
Green Ext Time (p_c), s	3.5	5.6				0.0

Intersection Summary			
HCM 6th Ctrl Delay			20.4
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	384	6	108	771	36	5	24	47	2	24	11
Future Volume (veh/h)	32	384	6	108	771	36	5	24	47	2	24	11
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		0.99	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	1597	1597	1597	1610	1610	1610	1585	1585	1585	1610	1610	1610
Adj Flow Rate, veh/h	34	413	6	116	829	39	5	26	51	2	26	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	0	0	0
Cap, veh/h	613	1269	18	902	1246	59	28	36	63	27	75	33
Arrive On Green	0.06	1.00	1.00	0.08	1.00	1.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1521	1570	23	1533	1523	72	39	495	879	27	1046	460
Grp Volume(v), veh/h	34	0	419	116	0	868	82	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1521	0	1593	1533	0	1595	1413	0	0	1533	0	0
Q Serve(g_s), s	0.5	0.0	0.0	1.9	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.9	0.0	0.0	8.6	0.0	0.0	3.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.06		0.62	0.05		0.30
Lane Grp Cap(c), veh/h	613	0	1288	902	0	1305	127	0	0	135	0	0
V/C Ratio(X)	0.06	0.00	0.33	0.13	0.00	0.67	0.65	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	699	0	1288	1067	0	1305	242	0	0	258	0	0
HCM Platoon Ratio	2.00	2.00	2.00	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	0.27	0.00	0.27	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.9	0.0	0.0	1.8	0.0	0.0	68.6	0.0	0.0	66.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.7	0.0	0.0	0.7	5.4	0.0	0.0	1.2	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(95%),veh/ln	0.3	0.0	0.4	0.8	0.0	0.5	6.0	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.0	0.0	0.7	1.8	0.0	0.7	74.0	0.0	0.0	67.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		453			984			82			40	
Approach Delay, s/veh		0.8			0.9			74.0			67.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	10.0	125.3		14.8	8.5	126.7				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		23.0	22.0	93.0		23.0	13.0	102.0				
Max Q Clear Time (g_c+I1), s		10.6	3.9	2.0		5.8	2.5	2.0				
Green Ext Time (p_c), s		0.3	0.3	3.2		0.1	0.0	9.6				

Intersection Summary			
HCM 6th Ctrl Delay			6.4
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	355	57	113	762	58	188	134	60	43	149	29
Future Volume (veh/h)	25	355	57	113	762	58	188	134	60	43	149	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	27	378	61	120	811	62	200	143	64	46	159	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	502	866	140	728	965	74	172	179	80	147	180	35
Arrive On Green	0.05	1.00	1.00	0.08	1.00	1.00	0.07	0.17	0.17	0.03	0.14	0.14
Sat Flow, veh/h	1521	1341	216	1521	1462	112	1521	1035	463	1521	1290	251
Grp Volume(v), veh/h	27	0	439	120	0	873	200	0	207	46	0	190
Grp Sat Flow(s),veh/h/ln	1521	0	1558	1521	0	1574	1521	0	1498	1521	0	1541
Q Serve(g_s), s	0.9	0.0	0.0	4.2	0.0	0.0	10.0	0.0	19.9	3.9	0.0	18.1
Cycle Q Clear(g_c), s	0.9	0.0	0.0	4.2	0.0	0.0	10.0	0.0	19.9	3.9	0.0	18.1
Prop In Lane	1.00		0.14	1.00		0.07	1.00		0.31	1.00		0.16
Lane Grp Cap(c), veh/h	502	0	1006	728	0	1039	172	0	259	147	0	215
V/C Ratio(X)	0.05	0.00	0.44	0.16	0.00	0.84	1.16	0.00	0.80	0.31	0.00	0.88
Avail Cap(c_a), veh/h	562	0	1006	767	0	1039	172	0	330	248	0	390
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.00	0.95	0.58	0.00	0.58	0.55	0.00	0.55	0.84	0.00	0.84
Uniform Delay (d), s/veh	8.0	0.0	0.0	7.6	0.0	0.0	58.3	0.0	59.5	53.6	0.0	63.3
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.0	0.0	4.9	102.5	0.0	5.4	0.4	0.0	7.4
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(95%),veh/ln	0.5	0.0	0.7	2.3	0.0	2.6	11.3	0.0	11.5	2.7	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	0.0	1.3	7.7	0.0	4.9	160.8	0.0	64.9	54.0	0.0	70.7
LnGrp LOS	A	A	A	A	A	A	F	A	E	D	A	E
Approach Vol, veh/h		466			993			407			236	
Approach Delay, s/veh		1.7			5.3			112.1			67.4	
Approach LOS		A			A			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.9	10.2	100.8	14.0	25.0	8.1	103.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	33.0	10.0	76.0	10.0	38.0	10.0	76.0
Max Q Clear Time (g_c+I1), s	5.9	21.9	6.2	2.0	12.0	20.1	2.9	2.0
Green Ext Time (p_c), s	0.0	0.7	0.1	2.7	0.0	0.8	0.0	7.5

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	425	36	32	916	10	37	19	13	1	2	4
Future Volume (veh/h)	2	425	36	32	916	10	37	19	13	1	2	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.95		0.95	0.97		0.95
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	1597	1597	1597	1610	1610	1610	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	2	452	38	34	974	11	39	20	14	1	2	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	393	1183	99	843	1336	15	86	38	21	33	40	61
Arrive On Green	0.01	1.00	1.00	0.03	0.84	0.84	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1521	1453	122	1533	1588	18	650	500	273	77	527	804
Grp Volume(v), veh/h	2	0	490	34	0	985	73	0	0	7	0	0
Grp Sat Flow(s),veh/h/ln	1521	0	1575	1533	0	1606	1423	0	0	1407	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.5	0.0	37.7	5.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.5	0.0	37.7	7.4	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.01	0.53		0.19	0.14		0.57
Lane Grp Cap(c), veh/h	393	0	1282	843	0	1351	144	0	0	134	0	0
V/C Ratio(X)	0.01	0.00	0.38	0.04	0.00	0.73	0.51	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	479	0	1282	899	0	1351	404	0	0	388	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)	0.88	0.00	0.88	0.40	0.00	0.40	0.98	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.3	0.0	0.0	1.6	0.0	4.9	67.5	0.0	0.0	64.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.8	0.0	0.0	1.4	2.0	0.0	0.0	0.1	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(95%),veh/ln	0.0	0.0	0.5	0.2	0.0	13.9	5.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	0.8	1.6	0.0	6.3	69.5	0.0	0.0	64.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		492			1019			73			7	
Approach Delay, s/veh		0.8			6.1			69.5			64.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.3	8.5	126.1		15.3	4.5	130.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		39.0	10.0	89.0		39.0	9.0	90.0				
Max Q Clear Time (g_c+I1), s		9.4	2.5	2.0		2.7	2.0	39.7				
Green Ext Time (p_c), s		0.3	0.0	3.1		0.0	0.0	9.2				

Intersection Summary			
HCM 6th Ctrl Delay			7.6
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	285	73	247	676	122	207	204	144	14	55	18
Future Volume (veh/h)	148	285	73	247	676	122	207	204	144	14	55	18
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	0.91		0.94	1.00		0.85
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	164	317	81	274	751	136	230	227	160	16	61	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	183	542	139	480	792	664	403	238	168	85	80	26
Arrive On Green	0.06	0.44	0.44	0.11	0.50	0.50	0.22	0.28	0.28	0.02	0.07	0.07
Sat Flow, veh/h	1521	1224	313	1521	1597	1340	1533	854	602	1521	1097	360
Grp Volume(v), veh/h	164	0	398	274	751	136	230	0	387	16	0	81
Grp Sat Flow(s),veh/h/ln	1521	0	1537	1521	1597	1340	1533	0	1455	1521	0	1457
Q Serve(g_s), s	7.4	0.0	23.9	11.5	55.0	5.8	11.1	0.0	32.1	0.0	0.0	6.7
Cycle Q Clear(g_c), s	7.4	0.0	23.9	11.5	55.0	5.8	11.1	0.0	32.1	0.0	0.0	6.7
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.41	1.00		0.25
Lane Grp Cap(c), veh/h	183	0	681	480	792	664	403	0	406	85	0	106
V/C Ratio(X)	0.90	0.00	0.58	0.57	0.95	0.20	0.57	0.00	0.95	0.19	0.00	0.76
Avail Cap(c_a), veh/h	183	0	681	552	838	703	403	0	412	122	0	220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	25.8	17.4	29.5	11.7	39.9	0.0	43.5	59.4	0.0	56.0
Incr Delay (d2), s/veh	39.1	0.0	1.4	1.3	19.3	0.2	2.1	0.0	32.3	1.3	0.0	12.6
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(95%),veh/ln	8.1	0.0	14.0	7.5	33.1	3.9	10.5	0.0	21.6	0.9	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	0.0	27.2	18.7	48.9	11.9	42.1	0.0	75.9	60.7	0.0	68.6
LnGrp LOS	E	A	C	B	D	B	D	A	E	E	A	E
Approach Vol, veh/h		562			1161			617			97	
Approach Delay, s/veh		39.0			37.4			63.3			67.3	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	38.8	18.6	59.0	32.0	13.5	12.1	65.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	34.8	19.9	52.2	21.3	18.6	7.6	64.5
Max Q Clear Time (g_c+I1), s	2.0	34.1	13.5	25.9	13.1	8.7	9.4	57.0
Green Ext Time (p_c), s	0.0	0.2	0.6	3.4	0.5	0.3	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	45.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	453	32	20	738	9	40	15	37	15	4	36
Future Volume (veh/h)	9	453	32	20	738	9	40	15	37	15	4	36
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	0.99		0.99	0.92		0.89	0.93		0.91
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	10	503	36	22	820	10	44	17	41	17	4	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	300	1051	865	544	1036	13	171	69	109	118	44	174
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	666	1597	1314	867	1574	19	451	336	529	232	212	846
Grp Volume(v), veh/h	10	503	36	22	0	830	102	0	0	61	0	0
Grp Sat Flow(s),veh/h/ln	666	1597	1314	867	0	1594	1315	0	0	1290	0	0
Q Serve(g_s), s	0.7	10.4	0.6	0.9	0.0	24.5	1.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.2	10.4	0.6	11.2	0.0	24.5	4.2	0.0	0.0	2.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.43		0.40	0.28		0.66
Lane Grp Cap(c), veh/h	300	1051	865	544	0	1049	348	0	0	335	0	0
V/C Ratio(X)	0.03	0.48	0.04	0.04	0.00	0.79	0.29	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	422	1343	1104	702	0	1340	484	0	0	468	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	1.00	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	17.1	5.6	4.0	8.4	0.0	8.1	22.5	0.0	0.0	21.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.2	0.1	0.1	0.0	5.2	1.7	0.0	0.0	0.9	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(95%),veh/ln	0.2	5.4	0.3	0.3	0.0	12.3	2.6	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	6.9	4.0	8.5	0.0	13.2	24.1	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	C	A	A	C	A	A
Approach Vol, veh/h		549			852			102			61	
Approach Delay, s/veh		6.9			13.1			24.1			22.8	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.9		18.1		47.9		18.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		20.5		55.5		20.5				
Max Q Clear Time (g_c+I1), s		27.2		4.5		26.5		6.2				
Green Ext Time (p_c), s		9.4		0.5		16.9		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			12.0
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	211	16	94	456	100	167	487	14	55	406	110
Future Volume (veh/h)	225	211	16	94	456	100	167	487	14	55	406	110
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	1610	1610	1610	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	239	224	17	100	485	106	178	518	15	59	432	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	3	3	3
Cap, veh/h	269	565	43	466	519	429	317	1084	31	374	719	193
Arrive On Green	0.12	0.38	0.38	0.06	0.32	0.32	0.19	0.73	0.73	0.01	0.10	0.10
Sat Flow, veh/h	1533	1476	112	1521	1597	1322	1509	2988	86	1497	2327	625
Grp Volume(v), veh/h	239	0	241	100	485	106	178	261	272	59	276	273
Grp Sat Flow(s),veh/h/ln	1533	0	1588	1521	1597	1322	1509	1506	1569	1497	1494	1458
Q Serve(g_s), s	11.9	0.0	13.2	5.2	35.3	7.1	9.6	8.7	8.8	3.2	21.2	21.5
Cycle Q Clear(g_c), s	11.9	0.0	13.2	5.2	35.3	7.1	9.6	8.7	8.8	3.2	21.2	21.5
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.06	1.00		0.43
Lane Grp Cap(c), veh/h	269	0	608	466	519	429	317	546	569	374	462	451
V/C Ratio(X)	0.89	0.00	0.40	0.21	0.93	0.25	0.56	0.48	0.48	0.16	0.60	0.61
Avail Cap(c_a), veh/h	328	0	608	614	566	468	329	546	569	391	462	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.91	0.00	0.91	0.55	0.55	0.55	0.98	0.98	0.98	0.70	0.70	0.70
Uniform Delay (d), s/veh	27.5	0.0	26.9	24.4	39.3	29.7	22.9	11.7	11.7	27.0	46.7	46.9
Incr Delay (d2), s/veh	20.7	0.0	0.5	0.1	14.3	0.2	2.3	2.9	2.8	0.2	4.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.7	0.0	8.7	3.5	20.7	4.1	5.6	4.8	5.0	2.2	13.2	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.1	0.0	27.4	24.5	53.5	29.9	25.1	14.6	14.5	27.2	50.7	51.1
LnGrp LOS	D	A	C	C	D	C	C	B	B	C	D	D
Approach Vol, veh/h		480			691			711			608	
Approach Delay, s/veh		37.7			45.7			17.2			48.6	
Approach LOS		D			D			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	48.0	11.9	50.5	16.1	41.6	18.8	43.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	34.0	19.0	42.5	12.5	28.0	19.0	42.5
Max Q Clear Time (g_c+I1), s	5.2	10.8	7.2	15.2	11.6	23.5	13.9	37.3
Green Ext Time (p_c), s	0.0	3.9	0.2	1.8	0.1	1.6	0.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	175	95	7	326	23	238	180	61	13	44	47
Future Volume (veh/h)	27	175	95	7	326	23	238	180	61	13	44	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	0.94		0.99	0.94		0.90	1.00		0.92
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	34	222	120	9	413	29	301	228	77	16	56	48
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	107	518	434	66	528	37	412	260	84	125	360	277
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	105	1433	1200	10	1461	101	660	535	174	114	741	570
Grp Volume(v), veh/h	256	0	120	451	0	0	606	0	0	120	0	0
Grp Sat Flow(s),veh/h/ln	1539	0	1200	1572	0	0	1369	0	0	1425	0	0
Q Serve(g_s), s	0.0	0.0	4.2	0.6	0.0	0.0	21.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	4.2	15.0	0.0	0.0	23.9	0.0	0.0	2.8	0.0	0.0
Prop In Lane	0.13		1.00	0.02		0.06	0.50		0.13	0.13		0.40
Lane Grp Cap(c), veh/h	626	0	434	631	0	0	756	0	0	761	0	0
V/C Ratio(X)	0.41	0.00	0.28	0.71	0.00	0.00	0.80	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	856	0	623	876	0	0	801	0	0	807	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	13.3	16.8	0.0	0.0	13.8	0.0	0.0	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.7	3.3	0.0	0.0	6.6	0.0	0.0	0.2	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(95%),veh/ln	4.5	0.0	2.0	9.3	0.0	0.0	12.1	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	14.0	20.1	0.0	0.0	20.4	0.0	0.0	8.7	0.0	0.0
LnGrp LOS	B	A	B	C	A	A	C	A	A	A	A	A
Approach Vol, veh/h		376			451			606			120	
Approach Delay, s/veh		14.8			20.1			20.4			8.7	
Approach LOS		B			C			C			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.0		25.8		33.0		25.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		30.5		30.5		30.5		30.5				
Max Q Clear Time (g_c+I1), s		25.9		9.2		4.8		17.0				
Green Ext Time (p_c), s		2.6		4.0		1.3		4.2				

Intersection Summary			
HCM 6th Ctrl Delay			18.1
HCM 6th LOS			B

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	190	48	35	250	24	47	58	54	20	34	26
Future Vol, veh/h	30	190	48	35	250	24	47	58	54	20	34	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	6	6	6
Mvmt Flow	35	224	56	41	294	28	55	68	64	24	40	31
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	12.8	14.2	10.8	11.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	45%	0%	100%	0%	100%	0%	25%
Vol Thru, %	55%	0%	0%	80%	0%	91%	43%
Vol Right, %	0%	100%	0%	20%	0%	9%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	54	30	238	35	274	80
LT Vol	47	0	30	0	35	0	20
Through Vol	58	0	0	190	0	250	34
RT Vol	0	54	0	48	0	24	26
Lane Flow Rate	124	64	35	280	41	322	94
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.233	0.103	0.063	0.45	0.073	0.521	0.176
Departure Headway (Hd)	6.792	5.853	6.442	5.792	6.39	5.822	6.722
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	527	611	556	622	560	619	532
Service Time	4.546	3.607	4.187	3.536	4.132	3.563	4.783
HCM Lane V/C Ratio	0.235	0.105	0.063	0.45	0.073	0.52	0.177
HCM Control Delay	11.6	9.3	9.6	13.2	9.6	14.8	11.2
HCM Lane LOS	B	A	A	B	A	B	B
HCM 95th-tile Q	0.9	0.3	0.2	2.3	0.2	3	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	226	20	91	572	165	216
Future Volume (veh/h)	226	20	91	572	165	216
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	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	1597	1597	1547	1547	1585	1585
Adj Flow Rate, veh/h	254	22	102	643	185	243
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	5	5	2	2
Cap, veh/h	274	24	588	1124	397	522
Arrive On Green	0.20	0.20	0.05	0.73	0.64	0.64
Sat Flow, veh/h	1380	120	1474	1547	620	815
Grp Volume(v), veh/h	277	0	102	643	0	428
Grp Sat Flow(s),veh/h/ln	1505	0	1474	1547	0	1435
Q Serve(g_s), s	21.7	0.0	2.6	23.3	0.0	18.3
Cycle Q Clear(g_c), s	21.7	0.0	2.6	23.3	0.0	18.3
Prop In Lane	0.92	0.08	1.00			0.57
Lane Grp Cap(c), veh/h	299	0	588	1124	0	919
V/C Ratio(X)	0.93	0.00	0.17	0.57	0.00	0.47
Avail Cap(c_a), veh/h	320	0	707	1124	0	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.82	0.82	0.00	1.00
Uniform Delay (d), s/veh	47.2	0.0	7.5	7.7	0.0	11.0
Incr Delay (d2), s/veh	30.7	0.0	0.1	1.7	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.1	0.0	1.4	11.8	0.0	10.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	77.9	0.0	7.6	9.4	0.0	12.7
LnGrp LOS	E	A	A	A	A	B
Approach Vol, veh/h	277			745	428	
Approach Delay, s/veh	77.9			9.2	12.7	
Approach LOS	E			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.7		28.3	10.3	81.4
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		85.5		25.5	15.5	65.5
Max Q Clear Time (g_c+I1), s		25.3		23.7	4.6	20.3
Green Ext Time (p_c), s		4.5		0.1	0.2	2.8
Intersection Summary						
HCM 6th Ctrl Delay			23.4			
HCM 6th LOS			C			
Notes						

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	351	2	0	464	113	9	7	2	103	2	351
Future Volume (veh/h)	413	351	2	0	464	113	9	7	2	103	2	351
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		0.93	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	1585	1585	1585	0	1597	1597	1610	1610	1610	1560	1560	1560
Adj Flow Rate, veh/h	439	373	2	0	494	120	10	7	2	110	2	373
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	1	1	0	0	0	4	4	4
Cap, veh/h	493	514	3	0	466	384	19	13	4	280	5	685
Arrive On Green	0.33	0.33	0.33	0.00	0.29	0.29	0.02	0.02	0.02	0.19	0.19	0.19
Sat Flow, veh/h	1509	1575	8	0	1597	1317	803	562	161	1460	27	1322
Grp Volume(v), veh/h	439	0	375	0	494	120	19	0	0	112	0	373
Grp Sat Flow(s),veh/h/ln	1509	0	1583	0	1597	1317	1526	0	0	1487	0	1322
Q Serve(g_s), s	33.1	0.0	25.1	0.0	35.0	8.5	1.5	0.0	0.0	7.9	0.0	22.7
Cycle Q Clear(g_c), s	33.1	0.0	25.1	0.0	35.0	8.5	1.5	0.0	0.0	7.9	0.0	22.7
Prop In Lane	1.00		0.01	0.00		1.00	0.53		0.11	0.98		1.00
Lane Grp Cap(c), veh/h	493	0	517	0	466	384	36	0	0	285	0	685
V/C Ratio(X)	0.89	0.00	0.73	0.00	1.06	0.31	0.53	0.00	0.00	0.39	0.00	0.54
Avail Cap(c_a), veh/h	493	0	517	0	466	384	76	0	0	285	0	685
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	0.00	0.93	0.93	1.00	0.00	0.00	0.68	0.00	0.68
Uniform Delay (d), s/veh	38.4	0.0	35.7	0.0	42.5	33.1	57.9	0.0	0.0	42.4	0.0	19.4
Incr Delay (d2), s/veh	19.0	0.0	6.2	0.0	57.1	2.0	16.3	0.0	0.0	1.6	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.2	0.0	16.0	0.0	29.5	5.4	1.3	0.0	0.0	5.4	0.0	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	0.0	41.8	0.0	99.6	35.1	74.2	0.0	0.0	44.0	0.0	20.7
LnGrp LOS	E	A	D	A	F	D	E	A	A	D	A	C
Approach Vol, veh/h		814			614			19			485	
Approach Delay, s/veh		50.2			87.0			74.2			26.1	
Approach LOS		D			F			E			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		7.8		44.2		28.0		40.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		6.0		36.0		23.0		35.0				
Max Q Clear Time (g_c+I1), s		3.5		35.1		24.7		37.0				
Green Ext Time (p_c), s		0.0		0.6		0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		56.1
HCM 6th LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	664	353	18	0	374	283	40	825	8	77	582	560
Future Volume (veh/h)	664	353	18	0	374	283	40	825	8	77	582	560
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		0.99
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	1585	1585	1585	0	1572	1572	1597	1597	1597	1560	1560	1560
Adj Flow Rate, veh/h	678	360	18	0	382	289	41	842	8	79	594	571
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	0	3	3	1	1	1	4	4	4
Cap, veh/h	598	723	36	0	379	283	154	903	9	193	989	707
Arrive On Green	0.34	0.81	0.81	0.00	0.23	0.23	0.07	0.59	0.59	0.13	0.56	0.56
Sat Flow, veh/h	2928	1496	75	0	1704	1214	1521	3080	29	1485	2964	1311
Grp Volume(v), veh/h	678	0	378	0	351	320	41	415	435	79	594	571
Grp Sat Flow(s),veh/h/ln	1464	0	1571	0	1494	1346	1521	1518	1592	1485	1482	1311
Q Serve(g_s), s	24.5	0.0	9.3	0.0	28.0	28.0	2.4	30.0	30.0	0.0	16.0	10.6
Cycle Q Clear(g_c), s	24.5	0.0	9.3	0.0	28.0	28.0	2.4	30.0	30.0	0.0	16.0	10.6
Prop In Lane	1.00		0.05	0.00		0.90	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	598	0	759	0	349	314	154	445	467	193	989	707
V/C Ratio(X)	1.13	0.00	0.50	0.00	1.01	1.02	0.27	0.93	0.93	0.41	0.60	0.81
Avail Cap(c_a), veh/h	598	0	772	0	349	314	173	487	511	193	989	707
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	2.00	2.00	2.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.58	0.58	0.80	0.80	0.80	0.53	0.53	0.53
Uniform Delay (d), s/veh	39.5	0.0	6.9	0.0	46.0	46.0	33.5	23.8	23.8	47.8	21.3	4.9
Incr Delay (d2), s/veh	79.6	0.0	0.5	0.0	38.2	43.8	0.9	24.7	23.9	0.9	1.4	5.3
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(95%),veh/ln	22.0	0.0	4.2	0.0	18.7	17.8	1.6	15.1	15.6	3.8	7.2	26.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.2	0.0	7.4	0.0	84.2	89.8	34.4	48.5	47.7	48.7	22.7	10.3
LnGrp LOS	F	A	A	A	F	F	C	D	D	D	C	B
Approach Vol, veh/h		1056			671			891			1244	
Approach Delay, s/veh		79.2			86.9			47.4			18.6	
Approach LOS		E			F			D			B	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	40.7		64.5	10.0	45.5	31.0	33.5
Change Period (Y+Rc), s	5.5	5.5		* 6.5	5.5	5.5	6.5	5.5
Max Green Setting (Gmax), s	6.0	38.5		* 59	6.0	38.5	24.5	28.0
Max Q Clear Time (g_c+I1), s	12.0	32.0		11.3	4.4	18.0	26.5	30.0
Green Ext Time (p_c), s	0.1	3.2		2.6	0.0	8.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.7
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)	225	20	25	5	10	10	0	1734	3	0	1120	241
Future Volume (veh/h)	225	20	25	5	10	10	0	1734	3	0	1120	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.98	1.00		0.99	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	1585	1585	1585	1610	1610	1610	0	1597	1597	0	1560	1560
Adj Flow Rate, veh/h	234	21	26	5	10	10	0	1806	3	0	1167	251
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	0	0	0	1	1	0	4	4
Cap, veh/h	313	23	29	85	155	136	0	2180	4	0	1701	363
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.00	1.00	1.00	0.00	1.00	1.00
Sat Flow, veh/h	1154	104	128	220	692	608	0	3189	5	0	2504	518
Grp Volume(v), veh/h	281	0	0	25	0	0	0	881	928	0	709	709
Grp Sat Flow(s),veh/h/ln	1385	0	0	1519	0	0	0	1518	1596	0	1482	1462
Q Serve(g_s), s	22.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	23.7	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.83		0.09	0.20		0.40	0.00		0.00	0.00		0.35
Lane Grp Cap(c), veh/h	365	0	0	376	0	0	0	1064	1119	0	1039	1025
V/C Ratio(X)	0.77	0.00	0.00	0.07	0.00	0.00	0.00	0.83	0.83	0.00	0.68	0.69
Avail Cap(c_a), veh/h	441	0	0	456	0	0	0	1064	1119	0	1039	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.15	0.15	0.00	0.70	0.70
Uniform Delay (d), s/veh	45.3	0.0	0.0	36.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	7.1	0.0	0.0	0.1	0.0	0.0	0.0	1.2	1.1	0.0	2.6	2.7
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(95%),veh/ln	13.8	0.0	0.0	1.1	0.0	0.0	0.0	0.6	0.6	0.0	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	0.0	0.0	36.9	0.0	0.0	0.0	1.2	1.1	0.0	2.6	2.7
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		281			25			1809			1418	
Approach Delay, s/veh		52.4			36.9			1.2			2.6	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	88.6	31.4	88.6	31.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	77.5	33.5	77.5	33.5
Max Q Clear Time (g_c+I1), s	2.0	25.7	2.0	3.6
Green Ext Time (p_c), s	42.6	1.2	48.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	45	76	1916	1298	80
Future Volume (veh/h)	86	45	76	1916	1298	80
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	1547	1547	1585	1585	1547	1547
Adj Flow Rate, veh/h	68	69	78	1975	1338	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	2	2	5	5
Cap, veh/h	105	93	94	2571	2216	
Arrive On Green	0.07	0.07	0.12	1.00	0.75	0.00
Sat Flow, veh/h	1474	1311	1509	3091	3017	1311
Grp Volume(v), veh/h	68	69	78	1975	1338	0
Grp Sat Flow(s),veh/h/ln	1474	1311	1509	1506	1470	1311
Q Serve(g_s), s	5.4	6.2	6.1	0.0	24.7	0.0
Cycle Q Clear(g_c), s	5.4	6.2	6.1	0.0	24.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	105	93	94	2571	2216	
V/C Ratio(X)	0.65	0.74	0.83	0.77	0.60	
Avail Cap(c_a), veh/h	325	290	132	2571	2216	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.23	0.23	1.00	0.00
Uniform Delay (d), s/veh	54.3	54.6	51.9	0.0	6.7	0.0
Incr Delay (d2), s/veh	7.8	12.8	7.6	0.5	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	4.3	3.6	0.3	11.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.1	67.4	59.5	0.5	7.9	0.0
LnGrp LOS	E	E	E	A	A	
Approach Vol, veh/h	137			2053	1338	
Approach Delay, s/veh	64.8			2.8	7.9	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Timer - Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.0	12.0	95.0				107.0
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		26.5	10.5	69.5				84.5
Max Q Clear Time (g_c+I1), s		8.2	8.1	26.7				2.0
Green Ext Time (p_c), s		0.4	0.0	20.3				52.6

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

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] 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)	54	49	147	141	51	84	177	1575	155	154	1010	40
Future Volume (veh/h)	54	49	147	141	51	84	177	1575	155	154	1010	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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	1585	1585	1585	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	56	51	9	145	53	5	182	1624	108	159	1041	39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	145	103	86	152	104	87	607	1588	708	334	1164	44
Arrive On Green	0.04	0.06	0.06	0.04	0.06	0.06	0.35	0.53	0.53	0.22	0.40	0.40
Sat Flow, veh/h	1509	1585	1324	1521	1597	1335	1509	3011	1342	1497	2936	110
Grp Volume(v), veh/h	56	51	9	145	53	5	182	1624	108	159	530	550
Grp Sat Flow(s),veh/h/ln	1509	1585	1324	1521	1597	1335	1509	1506	1342	1497	1494	1552
Q Serve(g_s), s	5.5	5.0	0.6	6.5	5.1	0.4	5.4	84.4	5.0	14.8	53.0	53.1
Cycle Q Clear(g_c), s	5.5	5.0	0.6	6.5	5.1	0.4	5.4	84.4	5.0	14.8	53.0	53.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	145	103	86	152	104	87	607	1588	708	334	592	615
V/C Ratio(X)	0.39	0.50	0.10	0.95	0.51	0.06	0.30	1.02	0.15	0.48	0.89	0.89
Avail Cap(c_a), veh/h	145	308	257	152	311	259	607	1588	708	334	779	809
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	0.69	0.69	0.69
Uniform Delay (d), s/veh	67.0	72.3	20.9	73.4	72.4	32.9	33.4	37.8	11.3	54.0	45.1	45.2
Incr Delay (d2), s/veh	1.7	3.7	0.5	59.1	3.9	0.3	0.3	28.4	0.5	0.9	13.8	13.3
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(95%),veh/ln	4.0	3.9	0.7	9.8	4.0	0.4	8.6	47.5	4.0	9.0	28.3	29.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	76.0	21.4	132.5	76.2	33.2	33.7	66.2	11.7	54.9	58.9	58.5
LnGrp LOS	E	E	C	F	E	C	C	F	B	D	E	E
Approach Vol, veh/h		116			203			1914			1239	
Approach Delay, s/veh		68.2			115.4			60.1			58.2	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.7	90.4	12.0	15.9	62.7	69.4	12.0	15.9
Change Period (Y+Rc), s	6.0	* 6	5.5	5.5	6.0	6.0	6.0	5.5
Max Green Setting (Gmax), s	16.0	* 84	6.5	31.1	16.0	83.4	6.0	31.1
Max Q Clear Time (g_c+I1), s	16.8	86.4	8.5	7.0	7.4	55.1	7.5	7.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.4	8.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	62.9
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	108	116	107	83	152	99	1380	127	160	1083	73
Future Volume (veh/h)	111	108	116	107	83	152	99	1380	127	160	1083	73
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		1.00	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	1585	1585	1585	1572	1572	1572	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	114	111	120	110	86	157	102	1423	131	165	1116	75
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	113	227	187	103	216	176	284	1830	812	330	1784	120
Arrive On Green	0.08	0.14	0.14	0.07	0.14	0.14	0.08	1.00	1.00	0.06	0.62	0.62
Sat Flow, veh/h	1509	1585	1301	1497	1572	1283	1509	3011	1336	1509	2860	192
Grp Volume(v), veh/h	114	111	120	110	86	157	102	1423	131	165	587	604
Grp Sat Flow(s),veh/h/ln	1509	1585	1301	1497	1572	1283	1509	1506	1336	1509	1506	1546
Q Serve(g_s), s	12.0	10.3	13.9	11.0	8.0	19.2	4.2	0.0	0.0	6.6	38.5	38.6
Cycle Q Clear(g_c), s	12.0	10.3	13.9	11.0	8.0	19.2	4.2	0.0	0.0	6.6	38.5	38.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	113	227	187	103	216	176	284	1830	812	330	939	965
V/C Ratio(X)	1.01	0.49	0.64	1.07	0.40	0.89	0.36	0.78	0.16	0.50	0.63	0.63
Avail Cap(c_a), veh/h	113	317	260	103	305	249	319	1830	812	388	939	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.46	0.46	0.46	0.76	0.76	0.76
Uniform Delay (d), s/veh	74.0	63.1	64.7	74.5	63.0	67.9	15.2	0.0	0.0	10.2	18.6	18.6
Incr Delay (d2), s/veh	86.5	1.6	3.7	108.4	1.2	23.9	0.4	1.6	0.2	0.9	2.4	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(95%),veh/ln	11.9	7.7	8.5	12.1	6.0	12.1	2.5	0.7	0.1	4.2	19.3	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	160.5	64.7	68.3	182.9	64.2	91.8	15.6	1.6	0.2	11.1	21.0	20.9
LnGrp LOS	F	E	E	F	E	F	B	A	A	B	C	C
Approach Vol, veh/h		345			353			1656			1356	
Approach Delay, s/veh		97.6			113.4			2.3			19.7	
Approach LOS		F			F			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	102.2	16.0	28.0	11.2	104.8	17.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	82.0	11.0	32.0	10.0	87.0	12.0	31.0
Max Q Clear Time (g_c+I1), s	8.6	2.0	13.0	15.9	6.2	40.6	14.0	21.2
Green Ext Time (p_c), s	0.2	19.2	0.0	0.9	0.1	10.9	0.0	0.7

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	55	0	42	1	1573	41	55	1400	0
Future Volume (veh/h)	0	0	2	55	0	42	1	1573	41	55	1400	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	0.89		0.96	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	1610	1610	1610	1572	1572	1572	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	0	0	2	57	0	43	1	1622	42	57	1443	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	3	3	1	1	1	1	1	1
Cap, veh/h	0	0	93	139	0	97	343	2405	62	265	2515	0
Arrive On Green	0.00	0.00	0.08	0.08	0.00	0.08	0.00	0.80	0.80	0.05	1.00	0.00
Sat Flow, veh/h	0	0	1219	1256	0	1275	1521	3023	78	1521	3115	0
Grp Volume(v), veh/h	0	0	2	57	0	43	1	813	851	57	1443	0
Grp Sat Flow(s),veh/h/ln	0	0	1219	1256	0	1275	1521	1518	1583	1521	1518	0
Q Serve(g_s), s	0.0	0.0	0.2	7.0	0.0	5.2	0.0	37.7	38.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	7.3	0.0	5.2	0.0	37.7	38.0	1.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	93	139	0	97	343	1208	1260	265	2515	0
V/C Ratio(X)	0.00	0.00	0.02	0.41	0.00	0.44	0.00	0.67	0.68	0.21	0.57	0.00
Avail Cap(c_a), veh/h	0	0	190	239	0	199	417	1208	1260	299	2515	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.67	0.67	0.67	0.58	0.58	0.00
Uniform Delay (d), s/veh	0.0	0.0	68.4	71.8	0.0	70.7	3.3	7.2	7.2	8.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	2.8	0.0	4.5	0.0	2.0	2.0	0.3	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(95%),veh/ln	0.0	0.0	0.1	4.3	0.0	3.3	0.0	16.0	16.8	1.1	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	68.6	74.6	0.0	75.2	3.3	9.2	9.2	8.4	0.6	0.0
LnGrp LOS	A	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		2			100			1665			1500	
Approach Delay, s/veh		68.6			74.8			9.2			0.9	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	132.3		17.2	5.3	137.6		17.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	111.0		25.0	8.0	112.0		25.0				
Max Q Clear Time (g_c+I1), s	3.0	40.0		2.2	2.0	2.0		9.3				
Green Ext Time (p_c), s	0.1	35.1		0.0	0.0	30.8		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	93	148	128	107	151	136	1346	43	134	1164	163
Future Volume (veh/h)	121	93	148	128	107	151	136	1346	43	134	1164	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1597	1597	1597	1585	1585	1585	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	126	97	154	133	111	157	142	1402	45	140	1212	170
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	143	180	151	139	190	160	460	1880	60	153	1332	592
Arrive On Green	0.05	0.11	0.11	0.06	0.12	0.12	0.26	0.63	0.63	0.07	0.44	0.44
Sat Flow, veh/h	1521	1597	1343	1509	1585	1336	1509	2977	95	1521	3035	1349
Grp Volume(v), veh/h	126	97	154	133	111	157	142	708	739	140	1212	170
Grp Sat Flow(s),veh/h/ln	1521	1597	1343	1509	1585	1336	1509	1506	1567	1521	1518	1349
Q Serve(g_s), s	6.8	9.2	11.4	10.0	10.6	15.9	4.6	52.4	52.6	9.5	59.7	12.9
Cycle Q Clear(g_c), s	6.8	9.2	11.4	10.0	10.6	15.9	4.6	52.4	52.6	9.5	59.7	12.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	143	180	151	139	190	160	460	951	989	153	1332	592
V/C Ratio(X)	0.88	0.54	1.02	0.95	0.58	0.98	0.31	0.74	0.75	0.91	0.91	0.29
Avail Cap(c_a), veh/h	155	339	285	139	337	284	460	951	989	153	1574	700
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)	0.83	0.83	0.83	1.00	1.00	1.00	0.64	0.64	0.64	0.79	0.79	0.79
Uniform Delay (d), s/veh	72.9	67.1	28.7	72.0	66.6	50.8	43.7	20.5	20.6	39.9	41.9	28.8
Incr Delay (d2), s/veh	32.4	1.6	37.0	62.1	2.1	30.5	0.2	3.4	3.3	40.8	8.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.3	6.8	8.9	6.8	7.9	11.1	7.2	24.7	25.6	8.6	31.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	105.4	68.7	65.7	134.1	68.7	81.3	43.9	24.0	23.9	80.7	50.8	29.8
LnGrp LOS	F	E	F	F	E	F	D	C	C	F	D	C
Approach Vol, veh/h		377			401			1589			1522	
Approach Delay, s/veh		79.7			95.3			25.7			51.2	
Approach LOS		E			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	75.2	13.8	24.2	16.0	106.0	15.0	23.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	13.0	83.0	10.0	34.0	11.0	85.0	10.0	34.0
Max Q Clear Time (g_c+I1), s	16.6	61.7	8.8	17.9	11.5	54.6	12.0	13.4
Green Ext Time (p_c), s	0.2	8.5	0.0	0.8	0.0	10.6	0.0	0.8

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	804	91	167	892	47	54	123	108	33	60	21
Future Volume (veh/h)	37	804	91	167	892	47	54	123	108	33	60	21
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		0.97	1.00		0.96	0.97		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	39	838	95	174	929	49	56	128	112	34	62	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	81	1582	177	415	2115	112	69	314	257	186	126	45
Arrive On Green	0.63	0.63	0.63	0.12	1.00	1.00	0.05	0.20	0.20	0.11	0.11	0.11
Sat Flow, veh/h	78	2504	280	1509	2905	153	1521	1597	1306	1108	1104	392
Grp Volume(v), veh/h	497	0	475	174	482	496	56	128	112	34	0	84
Grp Sat Flow(s),veh/h/ln	1461	0	1401	1509	1506	1552	1521	1597	1306	1108	0	1495
Q Serve(g_s), s	0.0	0.0	22.7	4.9	0.0	0.0	4.4	8.4	9.0	3.4	0.0	6.3
Cycle Q Clear(g_c), s	19.9	0.0	22.7	4.9	0.0	0.0	4.4	8.4	9.0	3.4	0.0	6.3
Prop In Lane	0.08		0.20	1.00		0.10	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	956	0	885	415	1097	1131	69	314	257	186	0	171
V/C Ratio(X)	0.52	0.00	0.54	0.42	0.44	0.44	0.82	0.41	0.44	0.18	0.00	0.49
Avail Cap(c_a), veh/h	956	0	885	458	1097	1131	133	552	452	305	0	330
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	0.61	0.61	0.61	0.69	0.69	0.69	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	12.3	8.8	0.0	0.0	56.8	42.1	42.4	48.6	0.0	49.9
Incr Delay (d2), s/veh	2.0	0.0	2.3	0.4	0.8	0.8	14.7	0.6	0.8	0.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	0.0	11.8	2.3	0.4	0.4	3.6	5.9	5.4	1.7	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	0.0	14.6	9.2	0.8	0.8	71.5	42.7	43.2	49.1	0.0	52.1
LnGrp LOS	B	A	B	A	A	A	E	D	D	D	A	D
Approach Vol, veh/h		972			1152			296			118	
Approach Delay, s/veh		14.2			2.0			48.3			51.2	
Approach LOS		B			A			D			D	

Timer - Assigned Phs		2		4	5	6	7	8
Phs Duration (G+Y+Rc), s		28.1		91.9	9.9	18.2	11.6	80.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		41.5		69.5	10.5	26.5	10.5	54.5
Max Q Clear Time (g_c+I1), s		11.0		2.0	6.4	8.3	6.9	24.7
Green Ext Time (p_c), s		1.2		8.2	0.0	0.5	0.1	7.9

Intersection Summary			
HCM 6th Ctrl Delay			14.4
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	834	19	21	915	18	277	76	87	12	41	22
Future Volume (veh/h)	25	834	19	21	915	18	277	76	87	12	41	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	0.99		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	27	907	21	23	995	20	301	83	95	13	45	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	45	1583	37	40	1568	32	322	228	261	47	81	38
Arrive On Green	0.01	0.17	0.17	0.05	1.00	1.00	0.21	0.34	0.34	0.09	0.09	0.09
Sat Flow, veh/h	1521	3032	70	1509	3019	61	1521	673	770	133	905	429
Grp Volume(v), veh/h	27	454	474	23	496	519	301	0	178	82	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1585	1509	1506	1574	1521	0	1443	1467	0	0
Q Serve(g_s), s	2.1	33.0	33.0	1.8	0.0	0.0	23.3	0.0	11.2	1.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	33.0	33.0	1.8	0.0	0.0	23.3	0.0	11.2	6.4	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.04	1.00		0.53	0.16		0.29
Lane Grp Cap(c), veh/h	45	792	828	40	782	817	322	0	489	166	0	0
V/C Ratio(X)	0.60	0.57	0.57	0.57	0.63	0.63	0.94	0.00	0.36	0.49	0.00	0.00
Avail Cap(c_a), veh/h	77	792	828	77	782	817	326	0	628	301	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.84	0.84	0.84	0.57	0.00	0.57	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.7	37.4	37.4	56.1	0.0	0.0	46.5	0.0	29.9	52.6	0.0	0.0
Incr Delay (d2), s/veh	9.3	2.3	2.2	10.1	3.3	3.2	22.8	0.0	0.3	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(95%),veh/ln	1.7	19.3	20.0	1.4	1.3	1.3	15.0	0.0	6.4	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	39.7	39.6	66.3	3.3	3.2	69.3	0.0	30.2	54.9	0.0	0.0
LnGrp LOS	E	D	D	E	A	A	E	A	C	D	A	A
Approach Vol, veh/h		955			1038			479			82	
Approach Delay, s/veh		40.4			4.6			54.8			54.9	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	67.2	29.9	15.2	8.1	66.8		45.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	6.1	48.2	25.7	22.0	6.1	48.2		52.2
Max Q Clear Time (g_c+I1), s	3.8	35.0	25.3	8.4	4.1	2.0		13.2
Green Ext Time (p_c), s	0.0	5.0	0.0	0.3	0.0	8.4		1.2

Intersection Summary		
HCM 6th Ctrl Delay		29.0
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	943	10	19	1014	15	24	25	14	36	7	56
Future Volume (veh/h)	31	943	10	19	1014	15	24	25	14	36	7	56
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		0.97	1.00		0.94	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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	34	1025	11	21	1102	16	26	27	15	39	8	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	296	1990	21	445	1938	28	44	103	57	55	18	135
Arrive On Green	0.07	1.00	1.00	0.02	0.43	0.43	0.03	0.11	0.11	0.04	0.12	0.12
Sat Flow, veh/h	1521	3076	33	1509	3037	44	1533	950	528	1509	153	1166
Grp Volume(v), veh/h	34	506	530	21	546	572	26	0	42	39	0	69
Grp Sat Flow(s),veh/h/ln	1521	1518	1591	1509	1506	1576	1533	0	1478	1509	0	1319
Q Serve(g_s), s	0.9	0.0	0.0	0.6	32.9	32.9	2.0	0.0	3.1	3.1	0.0	5.9
Cycle Q Clear(g_c), s	0.9	0.0	0.0	0.6	32.9	32.9	2.0	0.0	3.1	3.1	0.0	5.9
Prop In Lane	1.00		0.02	1.00		0.03	1.00		0.36	1.00		0.88
Lane Grp Cap(c), veh/h	296	982	1030	445	961	1006	44	0	160	55	0	152
V/C Ratio(X)	0.11	0.52	0.52	0.05	0.57	0.57	0.59	0.00	0.26	0.71	0.00	0.45
Avail Cap(c_a), veh/h	353	982	1030	514	961	1006	96	0	339	94	0	302
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	7.0	21.8	21.8	57.5	0.0	49.1	57.2	0.0	49.5
Incr Delay (d2), s/veh	0.1	1.5	1.4	0.0	2.4	2.3	11.6	0.0	0.9	15.5	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.7	0.7	0.3	19.0	19.7	1.7	0.0	2.2	2.5	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	1.5	1.4	7.0	24.3	24.2	69.2	0.0	50.0	72.7	0.0	51.6
LnGrp LOS	B	A	A	A	C	C	E	A	D	E	A	D
Approach Vol, veh/h		1070			1139			68			108	
Approach Delay, s/veh		1.7			23.9			57.3			59.2	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	18.5	8.5	83.1	9.0	19.4	9.6	82.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	7.5	27.5	8.5	54.5	7.5	27.5	8.5	54.5
Max Q Clear Time (g_c+I1), s	5.1	5.1	2.6	2.0	4.0	7.9	2.9	34.9
Green Ext Time (p_c), s	0.0	0.2	0.0	8.7	0.0	0.3	0.0	7.6

Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	354	55	6	449	23	149	103	29	8	28	34
Future Volume (veh/h)	19	354	55	6	449	23	149	103	29	8	28	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.95	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	1572	1572	1572	1560	1560	1560	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	21	393	61	7	499	26	166	114	32	9	31	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	2	2	2
Cap, veh/h	44	671	545	16	599	31	222	121	441	73	167	441
Arrive On Green	0.03	0.43	0.43	0.01	0.41	0.41	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1497	1572	1277	1485	1467	76	376	357	1300	0	494	1302
Grp Volume(v), veh/h	21	393	61	7	0	525	280	0	32	40	0	38
Grp Sat Flow(s),veh/h/ln	1497	1572	1277	1485	0	1544	733	0	1300	494	0	1302
Q Serve(g_s), s	0.8	11.6	1.7	0.3	0.0	18.4	0.0	0.0	1.0	0.0	0.0	1.2
Cycle Q Clear(g_c), s	0.8	11.6	1.7	0.3	0.0	18.4	20.5	0.0	1.0	20.5	0.0	1.2
Prop In Lane	1.00		1.00	1.00		0.05	0.59		1.00	0.22		1.00
Lane Grp Cap(c), veh/h	44	671	545	16	0	630	343	0	441	240	0	441
V/C Ratio(X)	0.48	0.59	0.11	0.43	0.00	0.83	0.82	0.00	0.07	0.17	0.00	0.09
Avail Cap(c_a), veh/h	508	1703	1383	504	0	1672	343	0	441	240	0	441
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.9	13.2	10.4	29.7	0.0	16.0	20.5	0.0	13.5	15.2	0.0	13.6
Incr Delay (d2), s/veh	7.7	0.8	0.1	16.7	0.0	3.0	14.1	0.0	0.1	0.3	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(95%),veh/ln	0.7	6.6	0.8	0.3	0.0	10.2	8.9	0.0	0.5	0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	14.1	10.5	46.4	0.0	19.0	34.6	0.0	13.6	15.5	0.0	13.7
LnGrp LOS	D	B	B	D	A	B	C	A	B	B	A	B
Approach Vol, veh/h		475			532			312			78	
Approach Delay, s/veh		14.6			19.4			32.5			14.6	
Approach LOS		B			B			C			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.0	5.2	30.3		25.0	6.3	29.2
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		20.5	20.5	65.5		20.5	20.5	65.5
Max Q Clear Time (g_c+I1), s		22.5	2.3	13.6		22.5	2.8	20.4
Green Ext Time (p_c), s		0.0	0.0	3.0		0.0	0.0	4.0

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

MOVEMENT SUMMARY

Site: 34 [Washington Ave & Manette Bridge (Site Folder: 2030 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total	HV]	Arrival Flows [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: Washington Ave (NB)															
8	T1	All MCs	328	4.0	328	4.0	0.957	19.5	LOS E	23.2	597.4	1.00	1.48	1.86	20.4
18	R2	All MCs	586	4.0	586	4.0	0.957	19.8	LOS E	23.2	597.4	1.00	1.48	1.86	21.6
Approach			914	4.0	914	4.0	0.957	19.7	LOS B	23.2	597.4	1.00	1.48	1.86	21.2
East: Manette Bridge (WB)															
1	L2	All MCs	400	3.0	400	3.0	0.573	8.9	LOS A	4.3	110.8	0.66	0.68	0.69	24.5
16	R2	All MCs	179	3.0	179	3.0	0.573	5.6	LOS A	4.3	110.8	0.66	0.68	0.69	24.6
Approach			579	3.0	579	3.0	0.573	7.9	LOS A	4.3	110.8	0.66	0.68	0.69	24.6
North: Washington Ave (SB)															
7	L2	All MCs	381	2.0	381	2.0	0.429	7.8	LOS A	2.7	69.5	0.64	0.66	0.64	24.4
4	T1	All MCs	28	2.0	28	2.0	0.429	4.3	LOS A	2.7	69.5	0.64	0.66	0.64	22.9
Approach			409	2.0	409	2.0	0.429	7.6	LOS A	2.7	69.5	0.64	0.66	0.64	24.3
All Vehicles			1901	3.3	1901	3.3	0.957	13.5	LOS B	23.2	597.4	0.82	1.06	1.24	22.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	21	9	1023	4	47	2	262	741	24	255	0
Future Volume (veh/h)	41	21	9	1023	4	47	2	262	741	24	255	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.96	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	1610	1610	1610	1597	1597	1597	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	42	21	9	1092	0	0	2	267	756	24	260	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	217	109	47	1105	580	0	39	398	1427	65	584	0
Arrive On Green	0.24	0.24	0.24	0.36	0.00	0.00	0.25	0.25	0.25	0.25	0.25	0.00
Sat Flow, veh/h	892	446	191	3043	1597	0	2	1582	2259	81	2397	0
Grp Volume(v), veh/h	72	0	0	1092	0	0	269	0	756	138	146	0
Grp Sat Flow(s),veh/h/ln	1530	0	0	1521	1597	0	1584	0	1130	1035	1370	0
Q Serve(g_s), s	3.6	0.0	0.0	33.9	0.0	0.0	0.0	0.0	18.4	0.8	8.5	0.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0	33.9	0.0	0.0	14.5	0.0	18.4	15.3	8.5	0.0
Prop In Lane	0.58		0.12	1.00		0.00	0.01		1.00	0.17		0.00
Lane Grp Cap(c), veh/h	372	0	0	1105	580	0	436	0	1427	305	345	0
V/C Ratio(X)	0.19	0.00	0.00	0.99	0.00	0.00	0.62	0.00	0.53	0.45	0.42	0.00
Avail Cap(c_a), veh/h	372	0	0	1105	580	0	480	0	1489	338	382	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	0.00	0.81	0.00	0.00	1.00	0.00	1.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	28.5	0.0	0.0	30.0	0.0	0.0	32.1	0.0	10.6	29.4	29.8	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	21.7	0.0	0.0	2.6	0.0	0.5	1.2	0.9	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(95%),veh/ln	2.4	0.0	0.0	21.1	0.0	0.0	9.7	0.0	13.9	4.8	5.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	0.0	51.8	0.0	0.0	34.6	0.0	11.1	30.6	30.7	0.0
LnGrp LOS	C	A	A	D	A	A	C	A	B	C	C	A
Approach Vol, veh/h		72			1092			1025			284	
Approach Delay, s/veh		28.8			51.8			17.2			30.7	
Approach LOS		C			D			B			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.4		27.6		28.4		39.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		26.5		20.5		26.5		34.5
Max Q Clear Time (g_c+I1), s		20.4		5.6		17.3		35.9
Green Ext Time (p_c), s		3.5		0.2		1.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	736	6	14	1163	11	6	22	9	17	6	52
Future Volume (veh/h)	24	736	6	14	1163	11	6	22	9	17	6	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.98	0.98		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	1585	1585	1585	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	26	791	6	15	1251	12	6	24	10	18	6	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	0	0	0
Cap, veh/h	86	2260	17	52	2404	23	56	98	36	68	21	92
Arrive On Green	0.80	0.80	0.80	0.80	0.80	0.80	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	54	2808	21	13	2987	28	104	1034	379	196	218	966
Grp Volume(v), veh/h	413	0	410	667	0	611	40	0	0	80	0	0
Grp Sat Flow(s),veh/h/ln	1445	0	1438	1580	0	1449	1517	0	0	1380	0	0
Q Serve(g_s), s	0.0	0.0	7.0	0.0	0.0	12.8	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	7.0	12.6	0.0	12.8	2.2	0.0	0.0	5.0	0.0	0.0
Prop In Lane	0.06		0.01	0.02		0.02	0.15		0.25	0.22		0.70
Lane Grp Cap(c), veh/h	1205	0	1158	1313	0	1166	190	0	0	180	0	0
V/C Ratio(X)	0.34	0.00	0.35	0.51	0.00	0.52	0.21	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1205	0	1158	1313	0	1166	703	0	0	649	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)	0.90	0.00	0.90	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.3	0.0	2.4	2.9	0.0	3.0	37.8	0.0	0.0	39.1	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.8	1.4	0.0	1.7	0.7	0.0	0.0	2.1	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(95%),veh/ln	2.7	0.0	2.7	5.5	0.0	5.2	1.5	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	0.0	3.2	4.3	0.0	4.6	38.5	0.0	0.0	41.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		823			1278			40			80	
Approach Delay, s/veh		3.1			4.5			38.5			41.1	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.1		76.9		13.1		76.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		39.5		41.5		39.5		41.5				
Max Q Clear Time (g_c+I1), s		4.2		9.0		7.0		14.8				
Green Ext Time (p_c), s		0.2		12.6		0.6		18.0				

Intersection Summary			
HCM 6th Ctrl Delay			5.9
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	633	6	25	822	23	228	365	107	39	57	151
Future Volume (veh/h)	130	633	6	25	822	23	228	365	107	39	57	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	143	696	7	27	903	25	251	401	118	43	63	166
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	171	1259	13	49	993	27	291	514	422	66	276	231
Arrive On Green	0.11	0.41	0.41	0.03	0.33	0.33	0.19	0.32	0.32	0.04	0.17	0.17
Sat Flow, veh/h	1521	3078	31	1521	3016	84	1533	1610	1322	1521	1597	1333
Grp Volume(v), veh/h	143	343	360	27	454	474	251	401	118	43	63	166
Grp Sat Flow(s),veh/h/ln	1521	1518	1592	1521	1518	1582	1533	1610	1322	1521	1597	1333
Q Serve(g_s), s	8.5	15.9	15.9	1.6	26.4	26.4	14.6	20.8	6.1	2.6	3.1	10.8
Cycle Q Clear(g_c), s	8.5	15.9	15.9	1.6	26.4	26.4	14.6	20.8	6.1	2.6	3.1	10.8
Prop In Lane	1.00		0.02	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	621	651	49	500	521	291	514	422	66	276	231
V/C Ratio(X)	0.84	0.55	0.55	0.55	0.91	0.91	0.86	0.78	0.28	0.65	0.23	0.72
Avail Cap(c_a), veh/h	223	642	673	101	520	542	575	849	697	141	391	326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	20.7	20.7	43.8	29.5	29.5	36.1	28.4	23.4	43.3	32.7	35.9
Incr Delay (d2), s/veh	20.0	1.1	1.1	10.8	19.8	19.2	8.9	3.1	0.4	12.2	0.5	5.3
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(95%),veh/ln	7.4	9.6	10.0	1.4	17.8	18.4	10.2	13.0	3.5	2.1	2.2	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	21.9	21.8	54.6	49.3	48.7	45.0	31.5	23.8	55.5	33.2	41.2
LnGrp LOS	E	C	C	D	D	D	D	C	C	E	C	D
Approach Vol, veh/h		846			955			770			272	
Approach Delay, s/veh		28.3			49.1			34.7			41.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	33.8	7.5	42.1	21.9	20.4	14.8	34.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	48.5	6.1	38.9	34.5	22.5	13.5	31.5
Max Q Clear Time (g_c+I1), s	4.6	22.8	3.6	17.9	16.6	12.8	10.5	28.4
Green Ext Time (p_c), s	0.0	3.9	0.0	5.5	0.9	0.7	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	744	16	8	757	5	35	28	17	0	20	6
Future Volume (veh/h)	31	744	16	8	757	5	35	28	17	0	20	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.55		0.68	1.00		0.49
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	1585	1585	1585	1572	1572	1572	1585	1585	1585	1560	1560	1560
Adj Flow Rate, veh/h	33	791	17	9	805	5	37	30	18	0	21	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	4	4	4
Cap, veh/h	99	2263	48	28	1275	8	74	51	25	0	112	32
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.12	0.12	0.12	0.00	0.12	0.12
Sat Flow, veh/h	92	2742	59	7	1545	10	354	427	210	0	927	265
Grp Volume(v), veh/h	425	0	416	819	0	0	85	0	0	0	0	27
Grp Sat Flow(s),veh/h/ln	1461	0	1431	1561	0	0	991	0	0	0	0	1192
Q Serve(g_s), s	0.0	0.0	11.9	0.0	0.0	0.0	10.2	0.0	0.0	0.0	0.0	3.4
Cycle Q Clear(g_c), s	10.6	0.0	11.9	31.6	0.0	0.0	13.6	0.0	0.0	0.0	0.0	3.4
Prop In Lane	0.08		0.04	0.01		0.01	0.44		0.21	0.00		0.22
Lane Grp Cap(c), veh/h	1230	0	1181	1311	0	0	151	0	0	0	0	144
V/C Ratio(X)	0.35	0.00	0.35	0.62	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.19
Avail Cap(c_a), veh/h	1230	0	1181	1311	0	0	218	0	0	0	0	226
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)	0.86	0.00	0.86	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	3.5	0.0	3.6	5.3	0.0	0.0	70.0	0.0	0.0	0.0	0.0	65.7
Incr Delay (d2), s/veh	0.7	0.0	0.7	2.3	0.0	0.0	1.2	0.0	0.0	0.0	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(95%),veh/ln	6.0	0.0	6.1	15.2	0.0	0.0	6.4	0.0	0.0	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.1	0.0	4.3	7.5	0.0	0.0	71.2	0.0	0.0	0.0	0.0	65.9
LnGrp LOS	A	A	A	A	A	A	E	A	A	A	A	E
Approach Vol, veh/h		841			819			85			27	
Approach Delay, s/veh		4.2			7.5			71.2			65.9	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		141.5		24.5		141.5		24.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		125.5		31.5		125.5		31.5
Max Q Clear Time (g_c+I1), s		13.9		5.4		33.6		15.6
Green Ext Time (p_c), s		11.3		0.1		13.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	409	395	48	15	128
Future Volume (veh/h)	58	409	395	48	15	128
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.98	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1572	1572	1597	1597	1610	1610
Adj Flow Rate, veh/h	78	553	534	65	20	173
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	1	1	0	0
Cap, veh/h	268	1082	1147	139	28	240
Arrive On Green	0.42	0.42	0.42	0.42	0.20	0.20
Sat Flow, veh/h	187	2639	2799	330	141	1224
Grp Volume(v), veh/h	333	298	297	302	194	0
Grp Sat Flow(s),veh/h/ln	1395	1359	1518	1532	1372	0
Q Serve(g_s), s	0.0	3.8	3.3	3.3	3.1	0.0
Cycle Q Clear(g_c), s	3.7	3.8	3.3	3.3	3.1	0.0
Prop In Lane	0.23			0.22	0.10	0.89
Lane Grp Cap(c), veh/h	777	573	640	646	269	0
V/C Ratio(X)	0.43	0.52	0.46	0.47	0.72	0.00
Avail Cap(c_a), veh/h	2721	2626	2931	2959	1486	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.0	5.0	4.9	4.9	8.9	0.0
Incr Delay (d2), s/veh	0.3	0.5	0.4	0.4	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.9	0.9	0.9	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.3	5.6	5.3	5.3	11.6	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		631	599		194	
Approach Delay, s/veh		5.4	5.3		11.6	
Approach LOS		A	A		B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	14.4	9.1	14.4
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	45.5	25.5	45.5
Max Q Clear Time (g_c+I1), s	5.8	5.1	5.3
Green Ext Time (p_c), s	4.1	0.5	3.5

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	185	185	110	249	33	0	0	0	29	80	39
Future Volume (veh/h)	22	185	185	110	249	33	0	0	0	29	80	39
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.85	0.93		0.96				1.00		0.70
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	1572	1572	1572	1572	1572	1572				1597	1597	1597
Adj Flow Rate, veh/h	25	208	208	124	280	37				33	90	44
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3				1	1	1
Cap, veh/h	129	666	514	239	432	51				92	252	123
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45				0.35	0.35	0.35
Sat Flow, veh/h	66	1474	1137	274	955	112				265	723	354
Grp Volume(v), veh/h	233	0	208	441	0	0				167	0	0
Grp Sat Flow(s),veh/h/ln	1539	0	1137	1341	0	0				1342	0	0
Q Serve(g_s), s	0.0	0.0	4.9	5.9	0.0	0.0				3.7	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	4.9	10.2	0.0	0.0				3.7	0.0	0.0
Prop In Lane	0.11		1.00	0.28		0.08				0.20		0.26
Lane Grp Cap(c), veh/h	796	0	514	721	0	0				468	0	0
V/C Ratio(X)	0.29	0.00	0.40	0.61	0.00	0.00				0.36	0.00	0.00
Avail Cap(c_a), veh/h	1830	0	1303	1607	0	0				1036	0	0
HCM Platoon Ratio	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	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	0.0	7.4	8.6	0.0	0.0				9.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.5	0.8	0.0	0.0				0.5	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
%ile BackOfQ(95%),veh/ln	1.8	0.0	1.7	4.2	0.0	0.0				1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	0.0	7.9	9.5	0.0	0.0				10.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				B	A	A
Approach Vol, veh/h		441			441						167	
Approach Delay, s/veh		7.6			9.5						10.2	
Approach LOS		A			A						B	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		22.2		18.0		22.2						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		46.0		31.0		46.0						
Max Q Clear Time (g_c+I1), s		6.9		5.7		12.2						
Green Ext Time (p_c), s		2.6		1.1		3.8						
Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	6	0	0	3	3	135	303	0	6	0	148
Future Volume (veh/h)	212	6	0	0	3	3	135	303	0	6	0	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.95		1.00	0.97		0.93
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	1610	1610	0	0	1610	1610	1535	1535	1535	1547	1547	1547
Adj Flow Rate, veh/h	259	7	0	0	4	4	165	370	0	7	0	180
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	0	0	0	0	6	6	6	5	5	5
Cap, veh/h	360	10	0	0	9	9	413	795	0	100	13	475
Arrive On Green	0.24	0.24	0.00	0.00	0.01	0.01	0.40	0.40	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1495	40	0	0	731	731	669	2048	0	13	33	1181
Grp Volume(v), veh/h	266	0	0	0	0	8	289	246	0	187	0	0
Grp Sat Flow(s),veh/h/ln	1535	0	0	0	0	1463	1320	1327	0	1226	0	0
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.0	0.2	1.8	5.3	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.0	0.0	0.0	0.2	6.0	5.3	0.0	4.2	0.0	0.0
Prop In Lane	0.97		0.00	0.00		0.50	0.57		0.00	0.04		0.96
Lane Grp Cap(c), veh/h	370	0	0	0	0	19	675	533	0	588	0	0
V/C Ratio(X)	0.72	0.00	0.00	0.00	0.00	0.43	0.43	0.46	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	999	0	0	0	0	578	1955	1879	0	1816	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	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	0.0	0.0	19.2	8.7	8.6	0.0	8.3	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.0	0.0	5.7	0.5	0.7	0.0	0.4	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(95%),veh/ln	3.6	0.0	0.0	0.0	0.0	0.2	2.7	2.3	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	0.0	0.0	0.0	0.0	24.9	9.2	9.4	0.0	8.6	0.0	0.0
LnGrp LOS	B	A	A	A	A	C	A	A	A	A	A	A
Approach Vol, veh/h		266			8			535			187	
Approach Delay, s/veh		15.6			24.9			9.3			8.6	
Approach LOS		B			C			A			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.3		13.9		20.3		5.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		55.5		25.5		55.5		15.5
Max Q Clear Time (g_c+I1), s		8.0		8.2		6.2		2.2
Green Ext Time (p_c), s		5.1		1.2		1.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	35	38	545	173	117	26	726	0	40	1114	6
Future Volume (veh/h)	40	35	38	545	173	117	26	726	0	40	1114	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1547	1547	1547	1597	1597	1597	1597	1597	0	1585	1585	1585
Adj Flow Rate, veh/h	43	37	40	580	184	0	28	772	0	43	1185	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	1	1	1	1	1	0	2	2	2
Cap, veh/h	69	120	101	609	378		53	1387	0	71	1439	7
Arrive On Green	0.05	0.08	0.08	0.21	0.24	0.00	0.04	0.46	0.00	0.05	0.47	0.47
Sat Flow, veh/h	1474	1547	1311	2951	1597	1354	1521	3115	0	1509	3072	16
Grp Volume(v), veh/h	43	37	40	580	184	0	28	772	0	43	581	610
Grp Sat Flow(s),veh/h/ln	1474	1547	1311	1476	1597	1354	1521	1518	0	1509	1506	1582
Q Serve(g_s), s	2.2	1.8	2.3	15.1	7.7	0.0	1.4	14.4	0.0	2.2	25.9	25.9
Cycle Q Clear(g_c), s	2.2	1.8	2.3	15.1	7.7	0.0	1.4	14.4	0.0	2.2	25.9	25.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.01
Lane Grp Cap(c), veh/h	69	120	101	609	378		53	1387	0	71	706	741
V/C Ratio(X)	0.62	0.31	0.39	0.95	0.49		0.53	0.56	0.00	0.61	0.82	0.82
Avail Cap(c_a), veh/h	532	559	473	609	378		314	3346	0	311	1660	1744
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	33.8	34.1	30.4	25.5	0.0	36.8	15.3	0.0	36.3	17.8	17.8
Incr Delay (d2), s/veh	8.9	1.5	2.5	25.2	1.0	0.0	3.0	0.3	0.0	3.1	1.9	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	1.3	1.4	11.8	5.3	0.0	1.0	8.1	0.0	1.5	13.3	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	35.3	36.5	55.6	26.5	0.0	39.7	15.6	0.0	39.4	19.7	19.6
LnGrp LOS	D	D	D	E	C		D	B	A	D	B	B
Approach Vol, veh/h		120			764			800			1234	
Approach Delay, s/veh		39.3			48.6			16.4			20.3	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	40.8	20.0	10.0	7.6	39.9	7.6	22.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	85.5	16.0	28.0	16.0	85.5	28.0	16.0
Max Q Clear Time (g_c+I1), s	3.4	27.9	17.1	4.3	4.2	16.4	4.2	9.7
Green Ext Time (p_c), s	0.0	8.5	0.0	0.3	0.0	5.3	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] 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)	29	2	36	406	16	49	10	701	5	8	1580	35
Future Volume (veh/h)	29	2	36	406	16	49	10	701	5	8	1580	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1610	1610	1610	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	30	2	37	478	0	0	10	723	5	8	1629	36
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	1	1	1
Cap, veh/h	36	2	45	581	305	0	22	1716	765	18	2296	51
Arrive On Green	0.06	0.06	0.06	0.19	0.00	0.00	0.01	0.57	0.57	0.01	0.57	0.57
Sat Flow, veh/h	600	40	740	3067	1610	0	1509	3011	1343	1521	4048	89
Grp Volume(v), veh/h	69	0	0	478	0	0	10	723	5	8	1029	636
Grp Sat Flow(s),veh/h/ln	1381	0	0	1533	1610	0	1509	1506	1343	1521	1278	1581
Q Serve(g_s), s	5.3	0.0	0.0	16.0	0.0	0.0	0.7	14.5	0.2	0.6	31.2	31.2
Cycle Q Clear(g_c), s	5.3	0.0	0.0	16.0	0.0	0.0	0.7	14.5	0.2	0.6	31.2	31.2
Prop In Lane	0.43		0.54	1.00		0.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	84	0	0	581	305	0	22	1716	765	18	1450	897
V/C Ratio(X)	0.82	0.00	0.00	0.82	0.00	0.00	0.46	0.42	0.01	0.44	0.71	0.71
Avail Cap(c_a), veh/h	207	0	0	1879	986	0	219	2394	1068	221	2032	1257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	0.0	0.0	41.6	0.0	0.0	52.3	13.0	9.9	52.5	16.8	16.8
Incr Delay (d2), s/veh	17.7	0.0	0.0	2.3	0.0	0.0	5.5	0.2	0.0	6.2	1.0	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(95%),veh/ln	4.0	0.0	0.0	10.3	0.0	0.0	0.5	7.9	0.1	0.4	13.6	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	0.0	0.0	43.9	0.0	0.0	57.8	13.3	9.9	58.7	17.7	18.3
LnGrp LOS	E	A	A	D	A	A	E	B	A	E	B	B
Approach Vol, veh/h		69			478			738			1673	
Approach Delay, s/veh		67.3			43.9			13.8			18.1	
Approach LOS		E			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	65.7		24.7	5.8	65.9		10.5
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.0
Max Green Setting (Gmax), s	15.5	85.0		65.5	15.5	85.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	33.2		18.0	2.6	16.5		7.3
Green Ext Time (p_c), s	0.0	27.5		1.4	0.0	8.0		0.2

Intersection Summary		
HCM 6th Ctrl Delay		22.4
HCM 6th LOS		C

Notes
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	148	69	469	105	82	6	45	125	145	437	13
Future Volume (veh/h)	5	148	69	469	105	82	6	45	125	145	437	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1547	1547	1547	1572	1572	1572	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	5	156	73	494	111	86	6	47	0	153	460	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, %	5	5	5	3	3	3	2	2	2	3	3	3
Cap, veh/h	12	192	90	502	414	321	107	516		488	494	15
Arrive On Green	0.01	0.19	0.19	0.34	0.50	0.50	0.33	0.33	0.00	0.33	0.33	0.33
Sat Flow, veh/h	1474	996	466	1497	821	636	920	1585	1343	1345	1518	46
Grp Volume(v), veh/h	5	0	229	494	0	197	6	47	0	153	0	474
Grp Sat Flow(s),veh/h/ln	1474	0	1462	1497	0	1458	920	1585	1343	1345	0	1564
Q Serve(g_s), s	0.3	0.0	13.9	30.2	0.0	7.2	0.6	1.9	0.0	8.2	0.0	27.1
Cycle Q Clear(g_c), s	0.3	0.0	13.9	30.2	0.0	7.2	27.7	1.9	0.0	10.2	0.0	27.1
Prop In Lane	1.00		0.32	1.00		0.44	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	12	0	282	502	0	735	107	516		488	0	509
V/C Ratio(X)	0.43	0.00	0.81	0.98	0.00	0.27	0.06	0.09		0.31	0.00	0.93
Avail Cap(c_a), veh/h	391	0	704	502	0	735	107	516		501	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.6	0.0	35.7	30.5	0.0	13.1	43.6	21.7	0.0	25.2	0.0	30.2
Incr Delay (d2), s/veh	32.7	0.0	7.7	35.9	0.0	0.3	0.3	0.1	0.0	0.6	0.0	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	9.2	21.7	0.0	4.1	0.3	1.3	0.0	4.9	0.0	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.3	0.0	43.4	66.3	0.0	13.4	43.9	21.8	0.0	25.8	0.0	54.0
LnGrp LOS	E	A	D	E	A	B	D	C		C	A	D
Approach Vol, veh/h		234			691			53			627	
Approach Delay, s/veh		44.2			51.2			24.3			47.1	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	52.1		34.1	35.0	23.3		34.1				
Change Period (Y+Rc), s	5.5	* 5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	24.5	* 36		26.0	31.0	44.5		31.0				
Max Q Clear Time (g_c+I1), s	2.3	9.2		29.7	32.2	15.9		29.1				
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	1.9		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			47.7									
HCM 6th LOS			D									

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	439	27	146	664	114	17	15	89	211	64	121
Future Volume (veh/h)	19	439	27	146	664	114	17	15	89	211	64	121
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1560	1560	1560	1547	1547	1547	1547	1547	1547
Adj Flow Rate, veh/h	20	457	28	152	692	0	18	16	0	220	67	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	45	852	52	200	1188		451	385		500	385	
Arrive On Green	0.03	0.30	0.30	0.13	0.40	0.00	0.25	0.25	0.00	0.25	0.25	0.00
Sat Flow, veh/h	1509	2877	176	1485	2964	1322	1303	1547	0	1364	1547	0
Grp Volume(v), veh/h	20	238	247	152	692	0	18	16	0	220	67	0
Grp Sat Flow(s),veh/h/ln	1509	1506	1547	1485	1482	1322	1303	1547	0	1364	1547	0
Q Serve(g_s), s	0.5	5.6	5.6	4.2	7.7	0.0	0.5	0.3	0.0	6.1	1.4	0.0
Cycle Q Clear(g_c), s	0.5	5.6	5.6	4.2	7.7	0.0	1.9	0.3	0.0	6.5	1.4	0.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	45	446	458	200	1188		451	385		500	385	
V/C Ratio(X)	0.45	0.53	0.54	0.76	0.58		0.04	0.04		0.44	0.17	
Avail Cap(c_a), veh/h	376	1447	1487	1075	4255		1069	1120		1147	1120	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.1	12.4	12.4	17.6	9.9	0.0	13.2	12.0	0.0	14.5	12.4	0.0
Incr Delay (d2), s/veh	9.6	1.4	1.4	8.2	0.5	0.0	0.1	0.1	0.0	1.3	0.5	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(95%),veh/ln	0.5	2.9	3.0	3.0	3.3	0.0	0.2	0.2	0.0	3.3	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	13.8	13.8	25.8	10.4	0.0	13.2	12.1	0.0	15.8	12.9	0.0
LnGrp LOS	C	B	B	C	B		B	B		B	B	
Approach Vol, veh/h		505			844			34			287	
Approach Delay, s/veh		14.4			13.2			12.7			15.1	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	21.4		15.0	10.2	17.0		15.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	60.5		30.5	30.5	40.5		30.5				
Max Q Clear Time (g_c+I1), s	2.5	9.7		3.9	6.2	7.6		8.5				
Green Ext Time (p_c), s	0.0	6.6		0.2	0.7	4.4		2.3				

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

Notes

Unsignalized Delay for [NBR, WBR, SBR] 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)	228	186	127	27	514	10	167	87	27	6	89	329
Future Volume (veh/h)	228	186	127	27	514	10	167	87	27	6	89	329
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1572	1572	1572	1597	1597	1597	1585	1585	1585	1560	1560	1560
Adj Flow Rate, veh/h	248	202	138	29	559	11	182	95	29	7	97	358
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	2	2	2	4	4	4
Cap, veh/h	223	602	391	53	712	14	202	105	260	21	294	267
Arrive On Green	0.15	0.35	0.35	0.04	0.23	0.23	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1497	1732	1126	1521	3044	60	1008	526	1297	105	1450	1318
Grp Volume(v), veh/h	248	173	167	29	279	291	277	0	29	104	0	358
Grp Sat Flow(s),veh/h/ln	1497	1494	1364	1521	1518	1587	1534	0	1297	1555	0	1318
Q Serve(g_s), s	12.5	7.2	7.7	1.6	14.5	14.5	14.8	0.0	1.5	4.8	0.0	17.0
Cycle Q Clear(g_c), s	12.5	7.2	7.7	1.6	14.5	14.5	14.8	0.0	1.5	4.8	0.0	17.0
Prop In Lane	1.00		0.83	1.00		0.04	0.66		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	223	519	474	53	355	371	307	0	260	315	0	267
V/C Ratio(X)	1.11	0.33	0.35	0.54	0.78	0.79	0.90	0.00	0.11	0.33	0.00	1.34
Avail Cap(c_a), veh/h	223	747	682	109	642	671	311	0	263	315	0	267
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	35.7	20.2	20.4	39.8	30.2	30.2	32.8	0.0	27.5	28.6	0.0	33.5
Incr Delay (d2), s/veh	93.7	0.4	0.4	8.3	3.8	3.7	27.4	0.0	0.2	0.6	0.0	176.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.2	4.4	4.3	1.3	9.2	9.6	12.3	0.0	0.9	3.3	0.0	29.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	129.4	20.6	20.8	48.1	34.0	33.9	60.2	0.0	27.6	29.2	0.0	210.2
LnGrp LOS	F	C	C	D	C	C	E	A	C	C	A	F
Approach Vol, veh/h		588			599			306			462	
Approach Delay, s/veh		66.6			34.6			57.1			169.5	
Approach LOS		E			C			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	33.7		21.5	17.0	24.1		21.3
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	6.0	42.0		17.0	12.5	35.5		17.0
Max Q Clear Time (g_c+I1), s	3.6	9.7		19.0	14.5	16.5		16.8
Green Ext Time (p_c), s	0.0	2.1		0.0	0.0	3.2		0.0

Intersection Summary		
HCM 6th Ctrl Delay		79.6
HCM 6th LOS		E

Intersection	
Intersection Delay, s/veh	65.6
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	97	0	69	0	0	827
Future Vol, veh/h	97	0	69	0	0	827
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.92
Heavy Vehicles, %	4	4	3	3	1	1
Mvmt Flow	107	0	76	0	0	899
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	10.9	8.9	76.9
HCM LOS	B	A	F

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	100%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	69	97	827
LT Vol	0	97	0
Through Vol	69	0	827
RT Vol	0	0	0
Lane Flow Rate	76	107	899
Geometry Grp	1	1	1
Degree of Util (X)	0.108	0.183	1.086
Departure Headway (Hd)	5.301	6.425	4.351
Convergence, Y/N	Yes	Yes	Yes
Cap	680	562	836
Service Time	3.301	4.425	2.376
HCM Lane V/C Ratio	0.112	0.19	1.075
HCM Control Delay	8.9	10.9	76.9
HCM Lane LOS	A	B	F
HCM 95th-tile Q	0.4	0.7	23.3

Intersection						
Int Delay, s/veh	6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	142	72	81	208	200	85
Future Vol, veh/h	142	72	81	208	200	85
Conflicting Peds, #/hr	3	1	1	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	1	1	4	4
Mvmt Flow	148	75	84	217	208	89

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	644	257	300	0	-	0
Stage 1	256	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.209	-	-	-
Pot Cap-1 Maneuver	436	779	1267	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	401	777	1264	-	-	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	2.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1264	-	479	-	-
HCM Lane V/C Ratio	0.067	-	0.465	-	-
HCM Control Delay (s)	8.1	0	18.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.4	-	-

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	76	170	3	2	118	9	4	10	1	5	15	69
Future Vol, veh/h	76	170	3	2	118	9	4	10	1	5	15	69
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	6	6	6
Mvmt Flow	95	213	4	3	148	11	5	13	1	6	19	86
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.3	8.7	8.3	8.5
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	31%	2%	6%
Vol Thru, %	67%	68%	91%	17%
Vol Right, %	7%	1%	7%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	249	129	89
LT Vol	4	76	2	5
Through Vol	10	170	118	15
RT Vol	1	3	9	69
Lane Flow Rate	19	311	161	111
Geometry Grp	1	1	1	1
Degree of Util (X)	0.027	0.387	0.204	0.143
Departure Headway (Hd)	5.137	4.477	4.546	4.642
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	695	803	789	771
Service Time	3.184	2.504	2.578	2.68
HCM Lane V/C Ratio	0.027	0.387	0.204	0.144
HCM Control Delay	8.3	10.3	8.7	8.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	1.8	0.8	0.5

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	25	203	17	26	4	243	58	33	3	60	17
Future Vol, veh/h	16	25	203	17	26	4	243	58	33	3	60	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	0	0	0	3	3	3	6	6	6
Mvmt Flow	17	27	218	18	28	4	261	62	35	3	65	18
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	10.7	9.8	12.1	9.4
HCM LOS	B	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	1%	36%	100%	0%
Vol Thru, %	0%	64%	0%	11%	55%	0%	78%
Vol Right, %	0%	36%	0%	88%	9%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	91	14	230	47	3	77
LT Vol	243	0	14	2	17	3	0
Through Vol	0	58	0	25	26	0	60
RT Vol	0	33	0	203	4	0	17
Lane Flow Rate	261	98	15	247	51	3	83
Geometry Grp	5	5	5	5	4b	5	5
Degree of Util (X)	0.432	0.141	0.027	0.353	0.087	0.005	0.134
Departure Headway (Hd)	5.958	5.198	6.274	5.151	6.171	6.482	5.822
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	598	681	567	691	584	555	619
Service Time	3.758	2.998	4.055	2.931	4.175	4.187	3.526
HCM Lane V/C Ratio	0.436	0.144	0.026	0.357	0.087	0.005	0.134
HCM Control Delay	13.3	8.9	9.2	10.8	9.8	9.2	9.4
HCM Lane LOS	B	A	A	B	A	A	A
HCM 95th-tile Q	2.2	0.5	0.1	1.6	0.3	0	0.5

MOVEMENT SUMMARY

Site: 74 [Wheaton Way & Manette Bridge (Site Folder: 2030 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Harkins St (WB)															
6	T1	All MCs	239	1.8	239	1.8	0.317	7.9	LOS A	1.9	47.4	0.66	0.66	0.66	33.9
16	R2	All MCs	38	1.8	38	1.8	0.317	7.6	LOS A	1.9	47.4	0.66	0.66	0.66	33.6
Approach			277	1.8	277	1.8	0.317	7.8	LOS A	1.9	47.4	0.66	0.66	0.66	33.9
North: Wheaton Way (SB)															
7u	U	All MCs	1	2.4	1	2.4	0.313	12.3	LOS B	1.9	48.4	0.48	0.59	0.48	33.9
7	L2	All MCs	44	2.4	44	2.4	0.313	10.3	LOS B	1.9	48.4	0.48	0.59	0.48	33.9
14	R2	All MCs	294	2.4	294	2.4	0.313	5.8	LOS A	1.9	48.4	0.48	0.59	0.48	34.2
Approach			339	2.4	339	2.4	0.313	6.4	LOS A	1.9	48.4	0.48	0.59	0.48	34.2
West: Manette Bridge (EB)															
5	L2	All MCs	542	2.1	542	2.1	0.682	9.5	LOS A	7.7	196.2	0.37	0.53	0.37	33.0
2	T1	All MCs	335	2.1	335	2.1	0.682	5.2	LOS A	7.7	196.2	0.37	0.53	0.37	33.6
Approach			877	2.1	877	2.1	0.682	7.9	LOS A	7.7	196.2	0.37	0.53	0.37	33.3
All Vehicles			1493	2.1	1493	2.1	0.682	7.5	LOS A	7.7	196.2	0.45	0.57	0.45	33.6

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	96	17	0	0	0	0	0	1	74
Future Vol, veh/h	0	0	0	96	17	0	0	0	0	0	1	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	6	6	6	0	0	0	1	1	1
Mvmt Flow	0	0	0	108	19	0	0	0	0	0	1	83

Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	235	22
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.16	-	-	-	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.254	-	-	-	4.009	3.309
Pot Cap-1 Maneuver	-	-	0	0	667	1058
Stage 1	-	-	0	0	712	-
Stage 2	-	-	0	0	-	-
Platoon blocked, %		-				
Mov Cap-1 Maneuver	-	-	-	-	0	1058
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB	SB
HCM Control Delay, s		8.7
HCM LOS		A

Minor Lane/Major Mvmt	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1058
HCM Lane V/C Ratio	-	-	0.079
HCM Control Delay (s)	-	-	8.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

Intersection						
Int Delay, s/veh	1.9					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	38	328	44	50	202
Future Vol, veh/h	30	38	328	44	50	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	31	40	342	46	52	210

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	679	365	0	0	388	0
Stage 1	365	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	420	685	-	-	1182	-
Stage 1	707	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	402	685	-	-	1182	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	523	1182	-
HCM Lane V/C Ratio	-	-	0.135	0.044	-
HCM Control Delay (s)	-	-	13	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	316	53	12	406	10	87	15	46	18	5	7
Future Vol, veh/h	8	316	53	12	406	10	87	15	46	18	5	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	5	5	5	2	2	2	0	0	0
Mvmt Flow	9	367	62	14	472	12	101	17	53	21	6	8
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	20.1	25.9	12.3	10.5
HCM LOS	C	D	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	59%	100%	0%	100%	0%	60%
Vol Thru, %	10%	0%	86%	0%	98%	17%
Vol Right, %	31%	0%	14%	0%	2%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	148	8	369	12	416	30
LT Vol	87	8	0	12	0	18
Through Vol	15	0	316	0	406	5
RT Vol	46	0	53	0	10	7
Lane Flow Rate	172	9	429	14	484	35
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.307	0.016	0.687	0.025	0.782	0.067
Departure Headway (Hd)	6.422	6.372	5.763	6.342	5.818	6.899
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	558	561	626	563	619	515
Service Time	4.495	4.124	3.515	4.091	3.567	4.998
HCM Lane V/C Ratio	0.308	0.016	0.685	0.025	0.782	0.068
HCM Control Delay	12.3	9.2	20.3	9.3	26.4	10.5
HCM Lane LOS	B	A	C	A	D	B
HCM 95th-tile Q	1.3	0	5.4	0.1	7.4	0.2

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	111	4	227	53	110	0	0	103	283
Future Vol, veh/h	0	0	0	111	4	227	53	110	0	0	103	283
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	2	2	2	2	2	4	4	4
Mvmt Flow	0	0	0	116	4	236	55	115	0	0	107	295

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	332	332	115	107	0	-	-	-	0
Stage 1	225	225	-	-	-	-	-	-	-
Stage 2	107	107	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	663	588	937	1484	-	0	0	-	-
Stage 1	812	718	-	-	-	0	0	-	-
Stage 2	917	807	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	636	0	937	1484	-	-	-	-	-
Mov Cap-2 Maneuver	636	0	-	-	-	-	-	-	-
Stage 1	780	0	-	-	-	-	-	-	-
Stage 2	917	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	2.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1484	-	636	937	-	-
HCM Lane V/C Ratio	0.037	-	0.188	0.252	-	-
HCM Control Delay (s)	7.5	0	12	10.1	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	1	-	-

Intersection												
Int Delay, s/veh	16.4											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	94	0	387	0	0	0	0	81	23	204	200	0
Future Vol, veh/h	94	0	387	0	0	0	0	81	23	204	200	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	0	0	0	7	7	7	2	2	2
Mvmt Flow	100	0	412	0	0	0	0	86	24	217	213	0

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	745	757	213				-	0	0	110	0	0
Stage 1	647	647	-				-	-	-	-	-	-
Stage 2	98	110	-				-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.21				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.41	5.51	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-				-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	383	338	830				0	-	-	1480	-	0
Stage 1	523	468	-				0	-	-	-	-	0
Stage 2	928	806	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	319	0	830				-	-	-	1480	-	-
Mov Cap-2 Maneuver	319	0	-				-	-	-	-	-	-
Stage 1	523	0	-				-	-	-	-	-	-
Stage 2	774	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.4	0	4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	632	1480	-
HCM Lane V/C Ratio	-	-	0.81	0.147	-
HCM Control Delay (s)	-	-	30.4	7.8	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	8.2	0.5	-

Intersection	
Int Delay, s/veh	20.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	433	358	363	676	0	0	0	0	46	0	119
Future Vol, veh/h	0	433	358	363	676	0	0	0	0	46	0	119
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	175	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	0	0	0	4	4	4
Mvmt Flow	0	466	385	390	727	0	0	0	0	49	0	128

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	-	469	0	0				1742	1976	366
Stage 1	-	-	-	-	-	-				1507	1507	-
Stage 2	-	-	-	-	-	-				235	469	-
Critical Hdwy	-	-	-	4.16	-	-				6.88	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-				5.88	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.88	5.58	-
Follow-up Hdwy	-	-	-	2.23	-	-				3.54	4.04	3.34
Pot Cap-1 Maneuver	0	-	0	1082	-	0				76	60	625
Stage 1	0	-	0	-	-	0				166	179	-
Stage 2	0	-	0	-	-	0				776	554	-
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	1082	-	-				~ 30	0	624
Mov Cap-2 Maneuver	-	-	-	-	-	-				~ 30	0	-
Stage 1	-	-	-	-	-	-				166	0	-
Stage 2	-	-	-	-	-	-				307	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.5	177
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	1082	-	30	624
HCM Lane V/C Ratio	-	0.361	-	1.649	0.205
HCM Control Delay (s)	-	10.2	1.5	$ 603.1	12.3
HCM Lane LOS	-	B	A	F	B
HCM 95th %tile Q(veh)	-	1.7	-	5.7	0.8

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	316	0	0	802	278	417	0	193	0	0	0
Future Volume (veh/h)	179	316	0	0	802	278	417	0	193	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1585	1585	0	0	1585	1585	1560	1560	1560			
Adj Flow Rate, veh/h	190	336	0	0	853	0	444	0	205			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	4	4	4			
Cap, veh/h	0	1272	0	0	1272		567	0	502			
Arrive On Green	0.00	0.42	0.00	0.00	0.42	0.00	0.38	0.00	0.38			
Sat Flow, veh/h	0	3091	0	0	3170	0	1485	0	1315			
Grp Volume(v), veh/h	0	336	0	0	853	0	444	0	205			
Grp Sat Flow(s),veh/h/ln	0	1506	0	0	1506	0	1485	0	1315			
Q Serve(g_s), s	0.0	3.4	0.0	0.0	10.7	0.0	12.4	0.0	5.4			
Cycle Q Clear(g_c), s	0.0	3.4	0.0	0.0	10.7	0.0	12.4	0.0	5.4			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1272	0	0	1272		567	0	502			
V/C Ratio(X)	0.00	0.26	0.00	0.00	0.67		0.78	0.00	0.41			
Avail Cap(c_a), veh/h	0	4710	0	0	4132		956	0	846			
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	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	8.8	0.0	0.0	10.9	0.0	12.8	0.0	10.6			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.6	0.0	2.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	1.5	0.0	0.0	5.0	0.0	6.3	0.0	2.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.9	0.0	0.0	11.5	0.0	15.2	0.0	11.2			
LnGrp LOS	A	A	A	A	B		B	A	B			
Approach Vol, veh/h		336			853			649				
Approach Delay, s/veh		8.9			11.5			13.9				
Approach LOS		A			B			B				
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	0.0	24.4		22.5		24.4						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	5.0	64.4		30.2		73.4						
Max Q Clear Time (g_c+I1), s	0.0	12.7		14.4		5.4						
Green Ext Time (p_c), s	0.0	7.1		3.2		2.4						
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [WBR] 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)	54	0	30	38	1	22	39	1547	50	39	1369	43
Future Volume (veh/h)	54	0	30	38	1	22	39	1547	50	39	1369	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.96	0.97		0.96	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	1397	1397	1397	1572	1572	1572	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	56	0	31	39	1	23	40	1595	52	40	1411	44
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	17	17	17	3	3	3	1	1	1	2	2	2
Cap, veh/h	142	0	112	143	5	122	313	2393	78	258	2379	74
Arrive On Green	0.10	0.00	0.10	0.10	0.10	0.10	0.03	0.80	0.80	0.03	0.80	0.80
Sat Flow, veh/h	1183	0	1140	1326	54	1240	1521	2997	97	1509	2980	93
Grp Volume(v), veh/h	56	0	31	39	0	24	40	805	842	40	712	743
Grp Sat Flow(s),veh/h/ln	1183	0	1140	1326	0	1294	1521	1518	1577	1509	1506	1567
Q Serve(g_s), s	7.1	0.0	3.9	4.4	0.0	2.7	0.7	35.5	36.0	0.7	28.2	28.4
Cycle Q Clear(g_c), s	9.8	0.0	3.9	8.3	0.0	2.7	0.7	35.5	36.0	0.7	28.2	28.4
Prop In Lane	1.00		1.00	1.00		0.96	1.00		0.06	1.00		0.06
Lane Grp Cap(c), veh/h	142	0	112	143	0	127	313	1212	1259	258	1202	1251
V/C Ratio(X)	0.39	0.00	0.28	0.27	0.00	0.19	0.13	0.66	0.67	0.15	0.59	0.59
Avail Cap(c_a), veh/h	269	0	234	285	0	265	371	1212	1259	315	1202	1251
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	0.41	0.41	0.41	0.79	0.79	0.79
Uniform Delay (d), s/veh	69.1	0.0	65.2	69.0	0.0	64.6	5.4	6.8	6.8	7.2	6.0	6.0
Incr Delay (d2), s/veh	1.8	0.0	1.3	1.0	0.0	0.7	0.1	1.2	1.2	0.2	1.7	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(95%),veh/ln	4.1	0.0	2.2	2.8	0.0	1.6	0.4	13.8	14.5	0.6	12.7	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.9	0.0	66.5	70.1	0.0	65.3	5.4	8.0	8.0	7.5	7.7	7.7
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		87			63			1687			1495	
Approach Delay, s/veh		69.3			68.3			7.9			7.7	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	128.5		19.3	8.1	128.5		19.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	86.0		32.0	10.0	102.0		32.0
Max Q Clear Time (g_c+I1), s	2.7	38.0		11.8	2.7	30.4		10.3
Green Ext Time (p_c), s	0.0	19.6		0.3	0.0	16.7		0.2

Intersection Summary		
HCM 6th Ctrl Delay		10.6
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	560	353	40	366	4	632	141	33	139	646	53
Future Volume (veh/h)	21	560	353	40	366	4	632	141	33	139	646	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1522	1522	1522	1510	1510	1510	1585	1585	1585
Adj Flow Rate, veh/h	22	583	0	42	381	4	658	147	34	145	673	55
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	4	7	7	7	8	8	8	2	2	2
Cap, veh/h	26	618		50	621	7	235	332	77	170	368	312
Arrive On Green	0.02	0.40	0.00	0.03	0.41	0.41	0.16	0.28	0.28	0.11	0.23	0.23
Sat Flow, veh/h	1485	1560	1322	1450	1503	16	1438	1186	274	1509	1585	1343
Grp Volume(v), veh/h	22	583	0	42	0	385	658	0	181	145	673	55
Grp Sat Flow(s),veh/h/ln	1485	1560	1322	1450	0	1519	1438	0	1460	1509	1585	1343
Q Serve(g_s), s	1.7	41.8	0.0	3.3	0.0	23.1	18.9	0.0	11.8	10.9	26.9	3.8
Cycle Q Clear(g_c), s	1.7	41.8	0.0	3.3	0.0	23.1	18.9	0.0	11.8	10.9	26.9	3.8
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	26	618		50	0	627	235	0	409	170	368	312
V/C Ratio(X)	0.85	0.94		0.85	0.00	0.61	2.81	0.00	0.44	0.85	1.83	0.18
Avail Cap(c_a), veh/h	51	673		50	0	662	235	0	409	294	368	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	33.7	0.0	55.7	0.0	26.8	48.5	0.0	34.3	50.5	44.5	35.6
Incr Delay (d2), s/veh	38.9	21.2	0.0	72.1	0.0	2.3	824.4	0.0	0.6	10.5	383.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	25.7	0.0	3.9	0.0	13.2	94.8	0.0	7.5	8.1	78.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.7	54.9	0.0	127.8	0.0	29.1	872.9	0.0	34.8	61.0	428.1	35.8
LnGrp LOS	F	D		F	A	C	F	A	C	E	F	D
Approach Vol, veh/h		605			427			839			873	
Approach Delay, s/veh		56.4			38.8			692.1			342.4	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	51.3	24.0	32.0	6.6	53.2	18.4	37.6
Change Period (Y+Rc), s	4.6	5.4	5.1	5.1	4.6	* 5.4	5.4	* 5.1
Max Green Setting (Gmax), s	4.0	50.0	18.9	26.9	4.0	* 51	22.6	* 23
Max Q Clear Time (g_c+I1), s	5.3	43.8	20.9	28.9	3.7	25.1	12.9	13.8
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	4.2	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	339.0
HCM 6th LOS	F

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)	248	1	118	9	1	16	22	446	6	12	742	3
Future Volume (veh/h)	248	1	118	9	1	16	22	446	6	12	742	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1572	1572	1572	1560	1560	1560	1510	1510	1510	1560	1560	1560
Adj Flow Rate, veh/h	270	1	128	10	1	0	24	485	7	13	807	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	4	4	4	8	8	8	4	4	4
Cap, veh/h	428	2	304	159	87		149	842	714	405	853	723
Arrive On Green	0.19	0.23	0.23	0.01	0.06	0.00	0.03	0.56	0.56	0.02	0.55	0.55
Sat Flow, veh/h	1497	10	1324	1485	1560	1322	1438	1510	1279	1485	1560	1322
Grp Volume(v), veh/h	270	0	129	10	1	0	24	485	7	13	807	3
Grp Sat Flow(s),veh/h/ln	1497	0	1334	1485	1560	1322	1438	1510	1279	1485	1560	1322
Q Serve(g_s), s	17.1	0.0	8.7	0.7	0.1	0.0	0.8	22.1	0.3	0.4	51.3	0.1
Cycle Q Clear(g_c), s	17.1	0.0	8.7	0.7	0.1	0.0	0.8	22.1	0.3	0.4	51.3	0.1
Prop In Lane	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	428	0	307	159	87		149	842	714	405	853	723
V/C Ratio(X)	0.63	0.00	0.42	0.06	0.01		0.16	0.58	0.01	0.03	0.95	0.00
Avail Cap(c_a), veh/h	769	0	480	306	89		189	842	714	558	959	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	34.7	46.0	47.1	0.0	22.6	15.2	10.4	12.2	22.5	10.9
Incr Delay (d2), s/veh	1.5	0.0	0.9	0.2	0.1	0.0	0.5	0.9	0.0	0.0	16.4	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(95%),veh/ln	10.6	0.0	5.3	0.5	0.0	0.0	0.6	12.1	0.1	0.2	29.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	0.0	35.6	46.2	47.2	0.0	23.1	16.1	10.4	12.2	38.8	10.9
LnGrp LOS	D	A	D	D	D		C	B	B	B	D	B
Approach Vol, veh/h		399			11			516			823	
Approach Delay, s/veh		36.2			46.3			16.4			38.3	
Approach LOS		D			D			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	65.0	5.5	28.8	7.5	63.8	23.9	10.4
Change Period (Y+Rc), s	4.5	6.0	4.0	4.5	4.5	6.0	4.0	4.5
Max Green Setting (Gmax), s	12.8	58.2	12.0	38.0	6.0	65.0	44.0	6.0
Max Q Clear Time (g_c+I1), s	2.4	24.1	2.7	10.7	2.8	53.3	19.1	2.1
Green Ext Time (p_c), s	0.0	3.4	0.0	0.8	0.0	4.5	0.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] 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)	19	115	34	7	169	18	79	25	15	8	20	8
Future Volume (veh/h)	19	115	34	7	169	18	79	25	15	8	20	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1597	1597	1597	1585	1585	1585	1585	1585	1585	1535	1535	1535
Adj Flow Rate, veh/h	20	124	37	8	182	19	85	27	16	9	22	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	6	6	6
Cap, veh/h	231	305	85	200	380	39	554	146	56	272	307	102
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	93	1108	309	29	1381	141	784	466	179	144	981	327
Grp Volume(v), veh/h	181	0	0	209	0	0	128	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1509	0	0	1551	0	0	1428	0	0	1452	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	2.2	0.0	0.0	1.2	0.0	0.0	0.4	0.0	0.0
Prop In Lane	0.11		0.20	0.04		0.09	0.66		0.12	0.22		0.22
Lane Grp Cap(c), veh/h	621	0	0	619	0	0	755	0	0	681	0	0
V/C Ratio(X)	0.29	0.00	0.00	0.34	0.00	0.00	0.17	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	2585	0	0	2657	0	0	2561	0	0	2509	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	5.9	0.0	0.0	5.0	0.0	0.0	4.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	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(95%),veh/ln	0.5	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	0.0	6.2	0.0	0.0	5.1	0.0	0.0	4.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		181			209			128			40	
Approach Delay, s/veh		6.0			6.2			5.1			4.7	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.1		9.3		10.1		9.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		31.0		31.0		31.0		31.0				
Max Q Clear Time (g_c+I1), s		3.2		3.9		2.4		4.2				
Green Ext Time (p_c), s		0.7		1.1		0.2		1.3				

Intersection Summary			
HCM 6th Ctrl Delay			5.8
HCM 6th LOS			A

MOVEMENT SUMMARY

Site: 328 [SR 3 & Ariport Rd (Site Folder: 2030 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SR 3															
8	T1	All MCs	826	4.0	826	4.0	0.625	5.3	LOS A	5.3	136.1	0.23	0.42	0.23	38.1
18	R2	All MCs	27	4.0	27	4.0	0.625	5.0	LOS A	5.3	136.1	0.23	0.42	0.23	29.7
Approach			852	4.0	852	4.0	0.625	5.3	LOS A	5.3	136.1	0.23	0.42	0.23	37.8
East: Ariport Rd															
1	L2	All MCs	48	8.0	48	8.0	0.142	9.4	LOS A	0.7	18.5	0.64	0.66	0.64	27.0
16	R2	All MCs	63	8.0	63	8.0	0.142	5.5	LOS A	0.7	18.5	0.64	0.66	0.64	27.3
Approach			110	8.0	110	8.0	0.142	7.2	LOS A	0.7	18.5	0.64	0.66	0.64	27.2
North: SR 3															
7	L2	All MCs	33	5.0	33	5.0	0.701	11.1	LOS B	7.1	185.0	0.34	0.43	0.34	29.2
4	T1	All MCs	901	5.0	901	5.0	0.701	5.3	LOS A	7.1	185.0	0.34	0.43	0.34	37.5
Approach			934	5.0	934	5.0	0.701	5.6	LOS A	7.1	185.0	0.34	0.43	0.34	37.1
All Vehicles			1897	4.7	1897	4.7	0.701	5.5	LOS A	7.1	185.0	0.31	0.44	0.31	36.6

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	346	165	268	214	0	33	0	153	504	124	7
Future Volume (veh/h)	0	346	165	268	214	0	33	0	153	504	124	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1547	1547	1522	1522	0	1384	0	1384	1560	1560	1560
Adj Flow Rate, veh/h	0	402	192	312	249	0	38	0	0	365	453	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	5	5	7	7	0	18	0	18	4	4	4
Cap, veh/h	0	1307	583	361	1766	0	0	0		467	491	
Arrive On Green	0.00	0.44	0.44	0.21	1.00	0.00	0.00	0.00	0.00	0.31	0.31	0.00
Sat Flow, veh/h	0	3017	1311	2812	2968	0		0		1485	1560	1322
Grp Volume(v), veh/h	0	402	192	312	249	0		0.0		365	453	0
Grp Sat Flow(s),veh/h/ln	0	1470	1311	1406	1446	0				1485	1560	1322
Q Serve(g_s), s	0.0	10.6	11.4	12.8	0.0	0.0				26.8	33.7	0.0
Cycle Q Clear(g_c), s	0.0	10.6	11.4	12.8	0.0	0.0				26.8	33.7	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1307	583	361	1766	0				467	491	
V/C Ratio(X)	0.00	0.31	0.33	0.86	0.14	0.00				0.78	0.92	
Avail Cap(c_a), veh/h	0	1307	583	434	1766	0				501	526	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.98	0.98	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	21.4	21.7	46.1	0.0	0.0				37.4	39.7	0.0
Incr Delay (d2), s/veh	0.0	0.6	1.5	15.3	0.2	0.0				7.6	21.6	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
%ile BackOfQ(95%),veh/ln	0.0	6.7	6.7	8.4	0.1	0.0				15.9	22.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.0	23.2	61.4	0.2	0.0				45.0	61.3	0.0
LnGrp LOS	A	C	C	E	A	A				D	E	
Approach Vol, veh/h		594			561						818	
Approach Delay, s/veh		22.4			34.2						54.1	
Approach LOS		C			C						D	

Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			19.9	57.9		42.2		77.8				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			18.5	31.5		40.5		54.5				
Max Q Clear Time (g_c+I1), s			14.8	13.4		35.7		2.0				
Green Ext Time (p_c), s			0.6	3.7		2.1		2.1				

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] 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)	83	920	0	0	440	722	53	1	107	0	0	0
Future Volume (veh/h)	83	920	0	0	440	722	53	1	107	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1547	1547	0	0	1572	1572	1510	1510	1510			
Adj Flow Rate, veh/h	97	1070	0	0	512	0	62	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	5	5	0	0	3	3	8	8	8			
Cap, veh/h	993	2535	0	0	614		77	1				
Arrive On Green	1.00	1.00	0.00	0.00	0.34	0.00	0.05	0.05	0.00			
Sat Flow, veh/h	1474	3017	0	0	3066	1332	1416	23	1279			
Grp Volume(v), veh/h	97	1070	0	0	512	0	63	0	0			
Grp Sat Flow(s),veh/h/ln	1474	1470	0	0	1494	1332	1439	0	1279			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	18.9	0.0	5.2	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	18.9	0.0	5.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	993	2535	0	0	614		78	0				
V/C Ratio(X)	0.10	0.42	0.00	0.00	0.83		0.81	0.00				
Avail Cap(c_a), veh/h	993	2535	0	0	1693		336	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	0.85	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	37.5	0.0	56.1	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	10.9	0.0	17.3	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			
%ile BackOfQ(95%),veh/ln	0.0	0.2	0.0	0.0	10.9	0.0	4.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	48.4	0.0	73.4	0.0	0.0			
LnGrp LOS	A	A	A	A	D		E	A				
Approach Vol, veh/h		1167			512			63				
Approach Delay, s/veh		0.3			48.4			73.4				
Approach LOS		A			D			E				
Timer - Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				108.5		11.5	78.8	29.7				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				82.0		28.0	9.0	68.0				
Max Q Clear Time (g_c+I1), s				2.0		7.2	2.0	20.9				
Green Ext Time (p_c), s				10.2		0.2	0.1	3.7				
Intersection Summary												
HCM 6th Ctrl Delay			17.1									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR, WBR] 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)	37	929	31	5	969	15	17	2	1	44	0	80
Future Volume (veh/h)	37	929	31	5	969	15	17	2	1	44	0	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	1560	1560	1560	1560	1560	1560	1447	1447	1447	1585	1585	1585
Adj Flow Rate, veh/h	42	1056	0	6	1101	17	19	2	1	50	0	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	4	4	4	13	13	13	2	2	2
Cap, veh/h	267	1141		681	2194	977	118	10	3	191	0	124
Arrive On Green	0.08	0.77	0.00	0.78	1.00	1.00	0.09	0.09	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1485	2964	1322	1485	2964	1320	672	110	37	1416	0	1334
Grp Volume(v), veh/h	42	1056	0	6	1101	17	22	0	0	50	0	91
Grp Sat Flow(s),veh/h/ln	1485	1482	1322	1485	1482	1320	818	0	0	1416	0	1334
Q Serve(g_s), s	2.2	34.3	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	2.2	34.3	0.0	0.0	0.0	0.0	5.7	0.0	0.0	4.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	0.86		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	267	1141		681	2194	977	132	0	0	191	0	124
V/C Ratio(X)	0.16	0.93		0.01	0.50	0.02	0.17	0.00	0.00	0.26	0.00	0.73
Avail Cap(c_a), veh/h	335	1544		681	2194	977	342	0	0	436	0	356
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.00	0.87	0.87	0.87	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	12.4	0.0	6.1	0.0	0.0	53.0	0.0	0.0	51.2	0.0	53.0
Incr Delay (d2), s/veh	0.2	12.6	0.0	0.0	0.7	0.0	0.6	0.0	0.0	0.7	0.0	8.1
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(95%),veh/ln	1.4	9.7	0.0	0.1	0.4	0.0	1.2	0.0	0.0	2.6	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	25.0	0.0	6.1	0.7	0.0	53.6	0.0	0.0	51.9	0.0	61.1
LnGrp LOS	C	C		A	A	A	D	A	A	D	A	E
Approach Vol, veh/h		1098			1124			22			141	
Approach Delay, s/veh		25.0			0.7			53.6			57.9	
Approach LOS		C			A			D			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		16.1	52.2	51.7		16.1	9.5	94.3
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		32.0	10.0	* 63		32.0	10.0	62.5
Max Q Clear Time (g_c+I1), s		7.7	2.0	36.3		10.0	4.2	2.0
Green Ext Time (p_c), s		0.1	0.0	9.9		0.5	0.0	13.3

Intersection Summary			
HCM 6th Ctrl Delay			15.8
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	969	25	18	1011	0	73	0	13	0	0	0
Future Volume (veh/h)	0	969	25	18	1011	0	73	0	13	0	0	0
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		1.00	0.99		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	1560	1560	1560	1572	1572	1572	1522	1522	1522	1610	1610	1610
Adj Flow Rate, veh/h	0	1101	28	20	1149	0	83	0	15	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	0	0	0
Cap, veh/h	667	2278	995	266	1220	0	165	0	131	0	125	0
Arrive On Green	0.00	1.00	1.00	0.05	0.82	0.00	0.08	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	1485	2964	1294	1497	3066	0	1351	0	1280	0	1610	0
Grp Volume(v), veh/h	0	1101	28	20	1149	0	83	0	15	0	0	0
Grp Sat Flow(s),veh/h/ln	1485	1482	1294	1497	1494	0	1351	0	1280	0	1610	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	36.7	0.0	7.2	0.0	1.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.0	36.7	0.0	7.2	0.0	1.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	667	2278	995	266	1220	0	165	0	131	0	125	0
V/C Ratio(X)	0.00	0.48	0.03	0.08	0.94	0.00	0.50	0.00	0.11	0.00	0.00	0.00
Avail Cap(c_a), veh/h	667	2278	995	354	1531	0	431	0	383	0	443	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.88	0.88	0.88	0.88	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	22.6	9.9	0.0	54.4	0.0	49.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.1	13.8	0.0	2.4	0.0	0.4	0.0	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(95%),veh/ln	0.0	0.4	0.0	0.6	9.4	0.0	4.7	0.0	0.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	22.7	23.7	0.0	56.7	0.0	49.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	C	C	A	E	A	D	A	A	A
Approach Vol, veh/h		1129			1169			98			0	
Approach Delay, s/veh		0.6			23.7			55.6			0.0	
Approach LOS		A			C			E				

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.3	51.2	54.5		14.3	7.9	97.8
Change Period (Y+Rc), s	5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s	33.0	10.0	* 62		33.0	10.0	61.5
Max Q Clear Time (g_c+I1), s	9.2	0.0	38.7		0.0	3.0	2.0
Green Ext Time (p_c), s	0.4	0.0	10.3		0.0	0.0	13.3

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	943	26	36	1017	52	59
Future Volume (veh/h)	943	26	36	1017	52	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1572	1572	1585	1585	1560	1560
Adj Flow Rate, veh/h	1084	30	41	1169	60	68
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	2	2	4	4
Cap, veh/h	2302	1004	506	2558	100	138
Arrive On Green	1.00	1.00	0.07	1.00	0.07	0.07
Sat Flow, veh/h	3066	1303	1509	3091	1485	1322
Grp Volume(v), veh/h	1084	30	41	1169	60	68
Grp Sat Flow(s),veh/h/ln	1494	1303	1509	1506	1485	1322
Q Serve(g_s), s	0.0	0.0	0.6	0.0	4.7	5.8
Cycle Q Clear(g_c), s	0.0	0.0	0.6	0.0	4.7	5.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2302	1004	506	2558	100	138
V/C Ratio(X)	0.47	0.03	0.08	0.46	0.60	0.49
Avail Cap(c_a), veh/h	2302	1004	588	2558	421	424
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	1.8	0.0	54.4	50.7
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.5	5.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.2	0.3	3.5	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.6	0.0	1.9	0.5	60.0	53.4
LnGrp LOS	A	A	A	A	E	D
Approach Vol, veh/h	1114			1210	128	
Approach Delay, s/veh	0.6			0.6	56.5	
Approach LOS	A			A	E	

Timer - Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			9.5	97.4		13.1		106.9
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			11.0	60.0		34.0		76.0
Max Q Clear Time (g_c+I1), s			2.6	2.0		7.8		2.0
Green Ext Time (p_c), s			0.0	13.0		0.4		14.8

Intersection Summary	
HCM 6th Ctrl Delay	3.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	847	105	247	1016	1	58	0	202	0	1	1
Future Volume (veh/h)	0	847	105	247	1016	1	58	0	202	0	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1572	1572	1572	1522	1522	1522	1610	1610	1610
Adj Flow Rate, veh/h	0	931	0	271	1116	1	64	0	222	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	0	0	0
Cap, veh/h	1	1057		508	2247	2	317	0	246	0	141	141
Arrive On Green	0.00	0.47	0.00	0.68	1.00	1.00	0.19	0.00	0.19	0.00	0.19	0.19
Sat Flow, veh/h	1485	2964	1322	1497	3063	3	1341	0	1284	0	735	735
Grp Volume(v), veh/h	0	931	0	271	544	573	64	0	222	0	0	2
Grp Sat Flow(s),veh/h/ln	1485	1482	1322	1497	1494	1572	1341	0	1284	0	0	1471
Q Serve(g_s), s	0.0	34.0	0.0	10.9	0.0	0.0	4.8	0.0	20.3	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	34.0	0.0	10.9	0.0	0.0	5.0	0.0	20.3	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.50
Lane Grp Cap(c), veh/h	1	1057		508	1096	1153	317	0	246	0	0	282
V/C Ratio(X)	0.00	0.88		0.53	0.50	0.50	0.20	0.00	0.90	0.00	0.00	0.01
Avail Cap(c_a), veh/h	130	1445		508	1096	1153	401	0	326	0	0	374
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.88	0.00	0.74	0.74	0.74	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.2	0.0	14.5	0.0	0.0	41.3	0.0	47.4	0.0	0.0	39.3
Incr Delay (d2), s/veh	0.0	9.4	0.0	0.8	1.2	1.1	0.3	0.0	22.5	0.0	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(95%),veh/ln	0.0	17.4	0.0	5.1	0.7	0.7	2.9	0.0	12.6	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	38.6	0.0	15.3	1.2	1.1	41.6	0.0	69.9	0.0	0.0	39.3
LnGrp LOS	A	D		B	A	A	D	A	E	A	A	D
Approach Vol, veh/h		931			1388			286			2	
Approach Delay, s/veh		38.6			3.9			63.6			39.3	
Approach LOS		D			A			E			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		27.5	45.2	47.3		27.5	0.0	92.5
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		30.5	17.5	58.5		30.5	10.5	65.5
Max Q Clear Time (g_c+I1), s		22.3	12.9	36.0		2.1	0.0	2.0
Green Ext Time (p_c), s		0.7	0.3	6.8		0.0	0.0	9.4

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

Notes

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)	57	959	41	29	1064	40	47	27	53	89	21	158
Future Volume (veh/h)	57	959	41	29	1064	40	47	27	53	89	21	158
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	0.98		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	1560	1560	1560	1572	1572	1572	1572	1572	1572	1560	1560	1560
Adj Flow Rate, veh/h	62	1042	45	32	1157	43	51	29	58	97	23	172
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	3	3	3	3	3	3	4	4	4
Cap, veh/h	394	1074	464	391	1070	466	121	118	98	312	27	199
Arrive On Green	0.53	0.72	0.72	0.26	0.36	0.36	0.04	0.07	0.07	0.13	0.17	0.17
Sat Flow, veh/h	1485	2964	1281	1497	2987	1301	1497	1572	1311	1485	158	1182
Grp Volume(v), veh/h	62	1042	45	32	1157	43	51	29	58	97	0	195
Grp Sat Flow(s),veh/h/ln	1485	1482	1281	1497	1494	1301	1497	1572	1311	1485	0	1340
Q Serve(g_s), s	2.6	39.1	1.2	1.9	43.0	2.6	0.0	2.1	5.1	0.0	0.0	17.0
Cycle Q Clear(g_c), s	2.6	39.1	1.2	1.9	43.0	2.6	0.0	2.1	5.1	0.0	0.0	17.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.88
Lane Grp Cap(c), veh/h	394	1074	464	391	1070	466	121	118	98	312	0	226
V/C Ratio(X)	0.16	0.97	0.10	0.08	1.08	0.09	0.42	0.25	0.59	0.31	0.00	0.86
Avail Cap(c_a), veh/h	394	1111	480	391	1070	466	160	472	393	312	0	413
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)	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	15.9	10.7	33.5	38.5	25.5	55.2	52.3	53.7	43.6	0.0	48.5
Incr Delay (d2), s/veh	0.2	16.5	0.3	0.1	52.1	0.4	4.9	1.1	5.6	0.6	0.0	9.4
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(95%),veh/ln	1.6	11.4	0.7	1.3	32.5	1.6	3.0	1.6	3.3	4.7	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	32.4	11.0	33.5	90.6	25.9	60.1	53.4	59.3	44.2	0.0	58.0
LnGrp LOS	C	C	B	C	F	C	E	D	E	D	A	E
Approach Vol, veh/h		1149			1232			138			292	
Approach Delay, s/veh		31.0			86.8			58.4			53.4	
Approach LOS		C			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.2	14.0	36.4	48.5	9.9	25.2	36.9	48.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	36.0	10.0	45.0	8.0	37.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	12.0	7.1	3.9	41.1	2.0	19.0	4.6	45.0
Green Ext Time (p_c), s	0.1	0.3	0.0	2.4	0.1	1.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	59.1
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	1049	3	28	1055	8	12	11	9	22	0	67
Future Vol, veh/h	16	1049	3	28	1055	8	12	11	9	22	0	67
Conflicting Peds, #/hr	3	0	2	2	0	3	2	0	2	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	22	22	22	0	0	0
Mvmt Flow	17	1128	3	30	1134	9	13	12	10	24	0	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1146	0	0	1133	0	0	1794	2370	569	1809	2369	578
Stage 1	-	-	-	-	-	-	1164	1164	-	1202	1202	-
Stage 2	-	-	-	-	-	-	630	1206	-	607	1167	-
Critical Hdwy	4.18	-	-	4.16	-	-	7.94	6.94	7.34	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.94	5.94	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.94	5.94	-	6.5	5.5	-
Follow-up Hdwy	2.24	-	-	2.23	-	-	3.72	4.22	3.52	3.5	4	3.3
Pot Cap-1 Maneuver	594	-	-	607	-	-	41	26	418	50	35	464
Stage 1	-	-	-	-	-	-	176	229	-	199	260	-
Stage 2	-	-	-	-	-	-	391	218	-	455	270	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	593	-	-	606	-	-	32	24	416	28	32	462
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	24	-	28	32	-
Stage 1	-	-	-	-	-	-	171	222	-	193	246	-
Stage 2	-	-	-	-	-	-	313	207	-	408	262	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	288.9	171.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	37	593	-	-	606	-	-	96
HCM Lane V/C Ratio	0.93	0.029	-	-	0.05	-	-	0.997
HCM Control Delay (s)	288.9	11.3	-	-	11.3	-	-	171.5
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	3.4	0.1	-	-	0.2	-	-	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	620	0	252	8	0	701
Future Volume (veh/h)	620	0	252	8	0	701
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	1560	1560	1572	1572	0	1560
Adj Flow Rate, veh/h	689	0	280	9	0	779
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	3	3	0	4
Cap, veh/h	1652	1475	965	31	0	0
Arrive On Green	0.57	0.00	0.65	0.65	0.00	0.00
Sat Flow, veh/h	2882	1560	3033	95	0	
Grp Volume(v), veh/h	689	0	141	148	0.0	
Grp Sat Flow(s),veh/h/ln	1441	1560	1494	1555		
Q Serve(g_s), s	16.1	0.0	4.8	4.9		
Cycle Q Clear(g_c), s	16.1	0.0	4.8	4.9		
Prop In Lane	1.00			0.06		
Lane Grp Cap(c), veh/h	1652	1475	488	508		
V/C Ratio(X)	0.42	0.00	0.29	0.29		
Avail Cap(c_a), veh/h	1652	1475	492	512		
HCM Platoon Ratio	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	14.4	0.0	14.8	14.8		
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	8.8	0.0	2.8	2.9		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.6	0.0	15.2	15.2		
LnGrp LOS	B	A	B	B		
Approach Vol, veh/h		689	289			
Approach Delay, s/veh		14.6	15.2			
Approach LOS		B	B			

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	75.3	44.7				120.0
Change Period (Y+Rc), s	6.5	5.5				6.5
Max Green Setting (Gmax), s	38.5	39.5				83.5
Max Q Clear Time (g_c+I1), s	18.1	6.9				0.0
Green Ext Time (p_c), s	3.3	2.0				0.0

Intersection Summary			
HCM 6th Ctrl Delay			14.8
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	594	6	15	229	8	2	7	45	10	15	3
Future Volume (veh/h)	4	594	6	15	229	8	2	7	45	10	15	3
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		0.99	0.99		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	1597	1597	1597	1610	1610	1610	1585	1585	1585	1610	1610	1610
Adj Flow Rate, veh/h	4	639	6	16	246	9	2	8	48	11	16	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	0	0	0
Cap, veh/h	1001	1300	12	747	1291	47	32	12	64	62	58	9
Arrive On Green	0.01	1.00	1.00	0.03	1.00	1.00	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1521	1580	15	1533	1542	56	21	215	1131	374	1025	155
Grp Volume(v), veh/h	4	0	645	16	0	255	58	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1521	0	1594	1533	0	1598	1366	0	0	1554	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.2	0.0	0.0	5.0	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.03		0.83	0.37		0.10
Lane Grp Cap(c), veh/h	1001	0	1312	747	0	1338	108	0	0	129	0	0
V/C Ratio(X)	0.00	0.00	0.49	0.02	0.00	0.19	0.54	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	1118	0	1312	831	0	1338	236	0	0	267	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.98	0.00	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	1.5	0.0	0.0	55.8	0.0	0.0	54.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.0	0.0	0.3	4.1	0.0	0.0	0.9	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(95%),veh/ln	0.0	0.0	0.9	0.1	0.0	0.2	3.4	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.0	1.3	1.5	0.0	0.3	59.8	0.0	0.0	55.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		649			271			58			30	
Approach Delay, s/veh		1.3			0.4			59.8			55.4	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	10.8	6.5	102.7	10.8	4.7	104.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	9.0	81.0	18.0	10.0	80.0
Max Q Clear Time (g_c+I1), s	7.0	2.2	2.0	4.2	2.1	2.0
Green Ext Time (p_c), s	0.2	0.0	5.7	0.1	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	518	121	102	207	8	33	53	39	21	193	14
Future Volume (veh/h)	19	518	121	102	207	8	33	53	39	21	193	14
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1597	1597	1597	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	21	569	133	112	227	9	36	58	43	23	212	15
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	817	779	182	607	997	40	123	145	108	228	239	17
Arrive On Green	0.05	1.00	1.00	0.06	0.87	0.87	0.03	0.17	0.17	0.02	0.16	0.16
Sat Flow, veh/h	1509	1236	289	1521	1526	60	1509	844	626	1521	1474	104
Grp Volume(v), veh/h	21	0	702	112	0	236	36	0	101	23	0	227
Grp Sat Flow(s),veh/h/ln	1509	0	1525	1521	0	1586	1509	0	1470	1521	0	1578
Q Serve(g_s), s	0.6	0.0	0.0	3.0	0.0	2.9	2.4	0.0	7.3	1.5	0.0	16.9
Cycle Q Clear(g_c), s	0.6	0.0	0.0	3.0	0.0	2.9	2.4	0.0	7.3	1.5	0.0	16.9
Prop In Lane	1.00		0.19	1.00		0.04	1.00		0.43	1.00		0.07
Lane Grp Cap(c), veh/h	817	0	961	607	0	1037	123	0	253	228	0	256
V/C Ratio(X)	0.03	0.00	0.73	0.18	0.00	0.23	0.29	0.00	0.40	0.10	0.00	0.89
Avail Cap(c_a), veh/h	905	0	961	659	0	1037	211	0	319	331	0	342
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.00	0.87	0.98	0.00	0.98	0.88	0.00	0.88	0.93	0.00	0.93
Uniform Delay (d), s/veh	7.0	0.0	0.0	6.3	0.0	2.9	41.8	0.0	44.2	41.3	0.0	49.2
Incr Delay (d2), s/veh	0.0	0.0	4.3	0.1	0.0	0.5	0.4	0.0	0.7	0.1	0.0	16.7
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(95%),veh/ln	0.3	0.0	2.1	1.7	0.0	1.8	1.6	0.0	5.0	1.0	0.0	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	0.0	4.3	6.4	0.0	3.4	42.2	0.0	44.8	41.4	0.0	65.9
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	E
Approach Vol, veh/h		723			348			137			250	
Approach Delay, s/veh		4.4			4.4			44.1			63.6	
Approach LOS		A			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.7	9.9	79.6	7.1	23.5	7.0	82.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	26.0	10.0	58.0	10.0	26.0	10.0	58.0
Max Q Clear Time (g_c+I1), s	3.5	9.3	5.0	2.0	4.4	18.9	2.6	4.9
Green Ext Time (p_c), s	0.0	0.4	0.1	5.3	0.0	0.6	0.0	1.3

Intersection Summary			
HCM 6th Ctrl Delay			18.3
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	543	148	34	304	1	11	0	11	0	4	1
Future Volume (veh/h)	3	543	148	34	304	1	11	0	11	0	4	1
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		1.00	0.96		0.97	1.00		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	1585	1585	1585	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	3	603	164	38	338	1	12	0	12	0	4	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	0	0	0
Cap, veh/h	915	982	267	696	1360	4	67	6	28	0	51	13
Arrive On Green	0.01	1.00	1.00	0.04	0.85	0.85	0.04	0.00	0.04	0.00	0.04	0.04
Sat Flow, veh/h	1509	1193	325	1521	1592	5	535	152	687	0	1235	309
Grp Volume(v), veh/h	3	0	767	38	0	339	24	0	0	0	0	5
Grp Sat Flow(s),veh/h/ln	1509	0	1518	1521	0	1597	1374	0	0	0	0	1543
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	4.7	1.0	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	0.0	4.7	2.0	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		0.21	1.00		0.00	0.50		0.50	0.00		0.20
Lane Grp Cap(c), veh/h	915	0	1249	696	0	1364	101	0	0	0	0	63
V/C Ratio(X)	0.00	0.00	0.61	0.05	0.00	0.25	0.24	0.00	0.00	0.00	0.00	0.08
Avail Cap(c_a), veh/h	1034	0	1249	768	0	1364	361	0	0	0	0	360
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)	0.54	0.00	0.54	0.94	0.00	0.94	0.99	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	1.8	0.0	0.0	1.0	0.0	1.6	56.1	0.0	0.0	0.0	0.0	55.4
Incr Delay (d2), s/veh	0.0	0.0	1.2	0.0	0.0	0.4	0.9	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.0	0.0	0.8	0.1	0.0	2.0	1.3	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.8	0.0	1.2	1.0	0.0	2.0	57.0	0.0	0.0	0.0	0.0	55.8
LnGrp LOS	A	A	A	A	A	A	E	A	A	A	A	E
Approach Vol, veh/h		770			377			24			5	
Approach Delay, s/veh		1.2			1.9			57.0			55.8	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		8.9	8.3	102.8		8.9	4.6	106.5
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		28.0	10.0	70.0		28.0	10.0	70.0
Max Q Clear Time (g_c+I1), s		4.0	2.4	2.0		2.4	2.0	6.7
Green Ext Time (p_c), s		0.1	0.0	6.2		0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	2.8
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	377	153	145	312	9	71	49	46	29	88	7
Future Volume (veh/h)	107	377	153	145	312	9	71	49	46	29	88	7
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		0.99	0.99		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	1585	1585	1585	1597	1597	1597	1572	1572	1572	1610	1610	1610
Adj Flow Rate, veh/h	113	397	161	153	328	9	75	52	48	31	93	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	1	1	1	3	3	3	0	0	0
Cap, veh/h	555	467	190	349	702	19	265	90	83	230	146	11
Arrive On Green	0.07	0.44	0.44	0.09	0.45	0.45	0.06	0.12	0.12	0.04	0.10	0.10
Sat Flow, veh/h	1509	1064	431	1521	1546	42	1497	749	692	1533	1477	111
Grp Volume(v), veh/h	113	0	558	153	0	337	75	0	100	31	0	100
Grp Sat Flow(s),veh/h/ln	1509	0	1495	1521	0	1589	1497	0	1441	1533	0	1589
Q Serve(g_s), s	2.3	0.0	19.1	3.0	0.0	8.4	0.0	0.0	3.8	0.0	0.0	3.5
Cycle Q Clear(g_c), s	2.3	0.0	19.1	3.0	0.0	8.4	0.0	0.0	3.8	0.0	0.0	3.5
Prop In Lane	1.00		0.29	1.00		0.03	1.00		0.48	1.00		0.07
Lane Grp Cap(c), veh/h	555	0	657	349	0	721	265	0	172	230	0	157
V/C Ratio(X)	0.20	0.00	0.85	0.44	0.00	0.47	0.28	0.00	0.58	0.13	0.00	0.64
Avail Cap(c_a), veh/h	853	0	925	760	0	1122	840	0	641	583	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.9	0.0	14.4	11.0	0.0	10.9	24.6	0.0	23.9	25.2	0.0	24.9
Incr Delay (d2), s/veh	0.2	0.0	5.9	1.0	0.0	0.6	0.7	0.0	3.7	0.3	0.0	5.1
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(95%),veh/ln	1.2	0.0	10.9	1.7	0.0	4.9	1.8	0.0	2.5	0.7	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	0.0	20.2	12.1	0.0	11.4	25.3	0.0	27.6	25.6	0.0	30.0
LnGrp LOS	A	A	C	B	A	B	C	A	C	C	A	C
Approach Vol, veh/h		671			490			175			131	
Approach Delay, s/veh		18.2			11.6			26.6			28.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	11.4	9.5	29.7	8.0	10.2	8.7	30.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	25.5	20.5	35.5	25.5	15.5	15.5	40.5				
Max Q Clear Time (g_c+I1), s	2.0	5.8	5.0	21.1	2.0	5.5	4.3	10.4				
Green Ext Time (p_c), s	0.0	0.6	0.4	4.0	0.2	0.3	0.2	2.8				
Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	366	45	12	338	4	11	5	12	2	7	10
Future Volume (veh/h)	6	366	45	12	338	4	11	5	12	2	7	10
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		1.00	0.94		0.96	0.94		0.93
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	1585	1585	1585	1585	1585	1585	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	6	389	48	13	360	4	12	5	13	2	7	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	641	828	683	604	817	9	232	72	96	151	88	121
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1017	1585	1308	951	1564	17	338	454	606	70	555	764
Grp Volume(v), veh/h	6	389	48	13	0	364	30	0	0	20	0	0
Grp Sat Flow(s),veh/h/ln	1017	1585	1308	951	0	1582	1398	0	0	1388	0	0
Q Serve(g_s), s	0.1	4.4	0.5	0.2	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	4.4	0.5	4.6	0.0	4.0	0.5	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.40		0.43	0.10		0.55
Lane Grp Cap(c), veh/h	641	828	683	604	0	826	401	0	0	361	0	0
V/C Ratio(X)	0.01	0.47	0.07	0.02	0.00	0.44	0.07	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	2108	3113	2570	1976	0	3107	1171	0	0	1141	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	1.00	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	5.5	4.3	3.3	5.7	0.0	4.2	10.2	0.0	0.0	10.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.2	0.1	0.0	1.3	0.3	0.0	0.0	0.2	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(95%),veh/ln	0.0	1.6	0.1	0.1	0.0	1.5	0.3	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	5.8	3.5	5.8	0.0	5.5	10.5	0.0	0.0	10.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		443			377			30			20	
Approach Delay, s/veh		5.5			5.5			10.5			10.4	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.3		9.0		19.3		9.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		20.5		55.5		20.5				
Max Q Clear Time (g_c+I1), s		6.4		2.3		6.6		2.5				
Green Ext Time (p_c), s		8.3		0.1		7.2		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		5.8
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	212	22	183	155	22	40	503	23	89	637	134
Future Volume (veh/h)	86	212	22	183	155	22	40	503	23	89	637	134
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		1.00	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	1585	1585	1585	1585	1585	1585	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	91	226	23	195	165	23	43	535	24	95	678	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	290	264	27	218	312	262	472	1528	68	492	1301	274
Arrive On Green	0.07	0.19	0.19	0.08	0.20	0.20	0.04	0.52	0.52	0.10	1.00	1.00
Sat Flow, veh/h	1509	1413	144	1509	1585	1333	1509	2935	131	1497	2444	515
Grp Volume(v), veh/h	91	0	249	195	165	23	43	274	285	95	414	407
Grp Sat Flow(s),veh/h/ln	1509	0	1556	1509	1585	1333	1509	1506	1561	1497	1494	1465
Q Serve(g_s), s	5.3	0.0	17.0	8.5	10.3	1.6	1.4	11.7	11.8	3.2	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	17.0	8.5	10.3	1.6	1.4	11.7	11.8	3.2	0.0	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.08	1.00		0.35
Lane Grp Cap(c), veh/h	290	0	291	218	312	262	472	784	813	492	795	780
V/C Ratio(X)	0.31	0.00	0.86	0.89	0.53	0.09	0.09	0.35	0.35	0.19	0.52	0.52
Avail Cap(c_a), veh/h	401	0	488	218	396	333	556	784	813	544	795	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.00	0.96	0.85	0.85	0.85	0.99	0.99	0.99	0.65	0.65	0.65
Uniform Delay (d), s/veh	33.0	0.0	43.3	39.8	39.6	36.1	10.9	15.4	15.5	10.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	8.6	30.1	1.2	0.1	0.1	1.2	1.2	0.1	1.6	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(95%),veh/ln	3.6	0.0	11.6	6.6	7.2	0.9	0.9	7.6	7.8	1.8	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	0.0	51.9	70.0	40.8	36.2	11.0	16.7	16.6	11.0	1.6	1.6
LnGrp LOS	C	A	D	E	D	D	B	B	B	B	A	A
Approach Vol, veh/h		340			383			602			916	
Approach Delay, s/veh		47.0			55.4			16.2			2.6	
Approach LOS		D			E			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	61.8	13.0	25.1	8.9	63.1	11.9	26.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	39.5	8.5	34.5	10.5	38.5	15.5	27.5
Max Q Clear Time (g_c+I1), s	5.2	13.8	10.5	19.0	3.4	2.0	7.3	12.3
Green Ext Time (p_c), s	0.1	4.3	0.0	1.5	0.0	7.7	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	154	167	26	257	11	16	43	35	30	115	84
Future Volume (veh/h)	29	154	167	26	257	11	16	43	35	30	115	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.98		1.00	0.97		0.95	0.96		0.95
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	1585	1585	1585	1585	1585	1585	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	33	173	188	29	289	12	18	48	39	34	129	94
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	1	1	1
Cap, veh/h	162	537	476	136	537	21	162	288	194	152	299	193
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	112	1420	1258	62	1420	56	112	792	534	95	823	530
Grp Volume(v), veh/h	206	0	188	330	0	0	105	0	0	257	0	0
Grp Sat Flow(s),veh/h/ln	1532	0	1258	1538	0	0	1438	0	0	1448	0	0
Q Serve(g_s), s	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	3.8	5.7	0.0	0.0	1.7	0.0	0.0	4.7	0.0	0.0
Prop In Lane	0.16		1.00	0.09		0.04	0.17		0.37	0.13		0.37
Lane Grp Cap(c), veh/h	699	0	476	694	0	0	644	0	0	643	0	0
V/C Ratio(X)	0.29	0.00	0.40	0.48	0.00	0.00	0.16	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	1430	0	1100	1437	0	0	1355	0	0	1372	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	0.0	7.9	8.5	0.0	0.0	7.6	0.0	0.0	8.6	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.1	1.1	0.0	0.0	0.3	0.0	0.0	0.9	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(95%),veh/ln	1.6	0.0	1.6	2.9	0.0	0.0	0.8	0.0	0.0	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	0.0	9.1	9.6	0.0	0.0	7.9	0.0	0.0	9.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		394			330			105			257	
Approach Delay, s/veh		8.6			9.6			7.9			9.4	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.2		17.7		17.2		17.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		30.5		30.5		30.5		30.5				
Max Q Clear Time (g_c+I1), s		3.7		5.8		6.7		7.7				
Green Ext Time (p_c), s		1.1		4.1		3.1		3.9				
Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	106	51	57	204	17	26	30	11	25	109	69
Future Vol, veh/h	38	106	51	57	204	17	26	30	11	25	109	69
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	3	3	3
Mvmt Flow	46	128	61	69	246	20	31	36	13	30	131	83
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	11	12.5	10.3	13.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	46%	0%	100%	0%	100%	0%	12%
Vol Thru, %	54%	0%	0%	68%	0%	92%	54%
Vol Right, %	0%	100%	0%	32%	0%	8%	34%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	11	38	157	57	221	203
LT Vol	26	0	38	0	57	0	25
Through Vol	30	0	0	106	0	204	109
RT Vol	0	11	0	51	0	17	69
Lane Flow Rate	67	13	46	189	69	266	245
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.129	0.022	0.084	0.309	0.123	0.434	0.414
Departure Headway (Hd)	6.865	5.917	6.615	5.877	6.433	5.872	6.097
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	521	603	541	611	557	612	589
Service Time	4.621	3.672	4.36	3.622	4.174	3.613	4.142
HCM Lane V/C Ratio	0.129	0.022	0.085	0.309	0.124	0.435	0.416
HCM Control Delay	10.6	8.8	10	11.2	10.1	13.1	13.4
HCM Lane LOS	B	A	A	B	B	B	B
HCM 95th-tile Q	0.4	0.1	0.3	1.3	0.4	2.2	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	27	33	239	328	193
Future Volume (veh/h)	38	27	33	239	328	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	1.00			0.97
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	1560	1560	1409	1409	1560	1560
Adj Flow Rate, veh/h	43	31	38	272	373	219
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	16	16	4	4
Cap, veh/h	80	58	365	939	453	266
Arrive On Green	0.10	0.10	0.05	0.67	0.50	0.50
Sat Flow, veh/h	804	579	1342	1409	909	534
Grp Volume(v), veh/h	75	0	38	272	0	592
Grp Sat Flow(s),veh/h/ln	1402	0	1342	1409	0	1443
Q Serve(g_s), s	2.0	0.0	0.4	3.1	0.0	13.5
Cycle Q Clear(g_c), s	2.0	0.0	0.4	3.1	0.0	13.5
Prop In Lane	0.57	0.41	1.00			0.37
Lane Grp Cap(c), veh/h	140	0	365	939	0	718
V/C Ratio(X)	0.54	0.00	0.10	0.29	0.00	0.82
Avail Cap(c_a), veh/h	927	0	835	2029	0	1329
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	16.5	0.0	6.4	2.7	0.0	8.2
Incr Delay (d2), s/veh	2.4	0.0	0.1	0.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	0.1	0.6	0.0	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.8	0.0	6.5	2.8	0.0	10.1
LnGrp LOS	B	A	A	A	A	B
Approach Vol, veh/h	75			310	592	
Approach Delay, s/veh	18.8			3.2	10.1	
Approach LOS	B			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		30.2		8.4	6.5	23.7
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		55.5		25.5	15.5	35.5
Max Q Clear Time (g_c+I1), s		5.1		4.0	2.4	15.5
Green Ext Time (p_c), s		1.5		0.1	0.0	3.7

Intersection Summary			
HCM 6th Ctrl Delay			8.6
HCM 6th LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	537	295	0	0	228	46	0	1	1	82	5	517
Future Volume (veh/h)	537	295	0	0	228	46	0	1	1	82	5	517
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	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	1585	1585	1585	0	1522	1522	1610	1610	1610	1547	1547	1547
Adj Flow Rate, veh/h	559	307	0	0	238	48	0	1	1	85	5	539
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	7	7	0	0	0	5	5	5
Cap, veh/h	740	738	0	0	225	187	0	13	13	285	17	910
Arrive On Green	0.49	0.49	0.00	0.00	0.15	0.15	0.00	0.02	0.02	0.20	0.20	0.20
Sat Flow, veh/h	1509	1585	0	0	1522	1264	0	732	732	1395	82	1308
Grp Volume(v), veh/h	559	307	0	0	238	48	0	0	2	90	0	539
Grp Sat Flow(s),veh/h/ln	1509	1506	0	0	1522	1264	0	0	1463	1477	0	1308
Q Serve(g_s), s	42.6	18.6	0.0	0.0	21.0	4.8	0.0	0.0	0.2	7.3	0.0	29.0
Cycle Q Clear(g_c), s	42.6	18.6	0.0	0.0	21.0	4.8	0.0	0.0	0.2	7.3	0.0	29.0
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.50	0.94		1.00
Lane Grp Cap(c), veh/h	740	738	0	0	225	187	0	0	25	302	0	910
V/C Ratio(X)	0.76	0.42	0.00	0.00	1.06	0.26	0.00	0.00	0.08	0.30	0.00	0.59
Avail Cap(c_a), veh/h	740	738	0	0	225	187	0	0	330	302	0	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.74	0.00	0.74
Uniform Delay (d), s/veh	29.3	23.2	0.0	0.0	60.5	53.6	0.0	0.0	68.7	47.9	0.0	11.1
Incr Delay (d2), s/veh	5.3	0.8	0.0	0.0	75.9	3.3	0.0	0.0	1.9	1.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.3	11.2	0.0	0.0	19.3	3.1	0.0	0.0	0.2	5.1	0.0	26.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	24.0	0.0	0.0	136.4	56.9	0.0	0.0	70.6	49.0	0.0	12.5
LnGrp LOS	C	C	A	A	F	E	A	A	E	D	A	B
Approach Vol, veh/h		866			286			2			629	
Approach Delay, s/veh		30.9			123.1			70.6			17.7	
Approach LOS		C			F			E			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		7.4		74.6		34.0		26.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		32.0		40.0		29.0		21.0				
Max Q Clear Time (g_c+I1), s		2.2		44.6		31.0		23.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	497	258	25	0	248	42	23	569	14	84	771	472
Future Volume (veh/h)	497	258	25	0	248	42	23	569	14	84	771	472
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	0	1560	1560	1572	1572	1572	1572	1572	1572
Adj Flow Rate, veh/h	558	290	28	0	279	47	26	639	16	94	866	530
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	0	4	4	3	3	3	3	3	3
Cap, veh/h	499	524	51	0	373	62	236	1207	30	302	1277	798
Arrive On Green	0.30	0.64	0.64	0.00	0.15	0.15	0.01	0.13	0.13	0.10	0.86	0.86
Sat Flow, veh/h	2812	1366	132	0	2617	422	1497	2978	75	1497	2987	1313
Grp Volume(v), veh/h	558	0	318	0	161	165	26	320	335	94	866	530
Grp Sat Flow(s),veh/h/ln	1406	0	1498	0	1482	1480	1497	1494	1559	1497	1494	1313
Q Serve(g_s), s	19.5	0.0	13.0	0.0	11.5	11.8	1.1	22.0	22.0	4.0	11.0	23.0
Cycle Q Clear(g_c), s	19.5	0.0	13.0	0.0	11.5	11.8	1.1	22.0	22.0	4.0	11.0	23.0
Prop In Lane	1.00		0.09	0.00		0.29	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	499	0	574	0	218	218	236	605	632	302	1277	798
V/C Ratio(X)	1.12	0.00	0.55	0.00	0.74	0.76	0.11	0.53	0.53	0.31	0.68	0.66
Avail Cap(c_a), veh/h	499	0	742	0	397	397	293	605	632	339	1277	798
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.95	0.95	0.92	0.92	0.92	0.45	0.45	0.45
Uniform Delay (d), s/veh	38.7	0.0	14.5	0.0	44.9	45.0	18.6	37.9	37.9	18.7	5.4	3.3
Incr Delay (d2), s/veh	77.2	0.0	0.8	0.0	4.6	5.1	0.2	3.0	2.9	0.3	1.3	2.0
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(95%),veh/ln	17.7	0.0	6.3	0.0	7.9	8.0	0.7	14.1	14.6	2.4	3.5	23.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.9	0.0	15.4	0.0	49.5	50.1	18.8	40.9	40.8	19.0	6.7	5.3
LnGrp LOS	F	A	B	A	D	D	B	D	D	B	A	A
Approach Vol, veh/h		876			326			681			1490	
Approach Delay, s/veh		79.4			49.8			40.0			7.0	
Approach LOS		E			D			D			A	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	50.1		48.7	8.8	52.5	26.0	22.7				
Change Period (Y+Rc), s	5.5	5.5		6.5	5.5	5.5	6.5	* 6.5				
Max Green Setting (Gmax), s	8.5	29.5		54.5	7.5	30.5	19.5	* 30				
Max Q Clear Time (g_c+I1), s	16.0	24.0		15.0	3.1	25.0	21.5	13.8				
Green Ext Time (p_c), s	0.1	2.2		2.1	0.0	3.9	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			36.6									
HCM 6th LOS			D									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	20	22	18	21	1	0	1147	1	0	1237	244
Future Volume (veh/h)	170	20	22	18	21	1	0	1147	1	0	1237	244
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	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	1535	1535	1535	1610	1610	1610	0	1547	1547	0	1572	1572
Adj Flow Rate, veh/h	179	21	23	19	22	1	0	1207	1	0	1302	257
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, %	6	6	6	0	0	0	0	5	5	0	3	3
Cap, veh/h	264	24	26	158	162	7	0	2196	2	0	1815	354
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.00	1.00	1.00	0.00	0.24	0.24
Sat Flow, veh/h	1083	127	139	583	856	35	0	3091	2	0	2570	486
Grp Volume(v), veh/h	223	0	0	42	0	0	0	589	619	0	774	785
Grp Sat Flow(s),veh/h/ln	1349	0	0	1474	0	0	0	1470	1547	0	1494	1483
Q Serve(g_s), s	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.2	53.6
Cycle Q Clear(g_c), s	17.6	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	52.2	53.6
Prop In Lane	0.80		0.10	0.45		0.02	0.00		0.00	0.00		0.33
Lane Grp Cap(c), veh/h	315	0	0	327	0	0	0	1071	1127	0	1088	1081
V/C Ratio(X)	0.71	0.00	0.00	0.13	0.00	0.00	0.00	0.55	0.55	0.00	0.71	0.73
Avail Cap(c_a), veh/h	456	0	0	485	0	0	0	1071	1127	0	1088	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.39	0.39	0.00	0.46	0.46
Uniform Delay (d), s/veh	43.2	0.0	0.0	37.1	0.0	0.0	0.0	0.0	0.0	0.0	31.2	31.7
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.2	0.0	0.0	0.0	0.8	0.8	0.0	1.8	2.0
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(95%),veh/ln	10.3	0.0	0.0	1.8	0.0	0.0	0.0	0.4	0.4	0.0	26.5	27.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	0.0	0.0	37.3	0.0	0.0	0.0	0.8	0.8	0.0	33.0	33.7
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	C	C
Approach Vol, veh/h		223			42			1208			1559	
Approach Delay, s/veh		46.7			37.3			0.8			33.3	
Approach LOS		D			D			A			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		84.7		25.3		84.7		25.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		68.5		32.5		68.5		32.5				
Max Q Clear Time (g_c+I1), s		2.0		19.6		55.6		4.4				
Green Ext Time (p_c), s		18.4		1.2		11.9		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			21.4									
HCM 6th LOS			C									

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	11	107	1234	1484	180
Future Volume (veh/h)	15	11	107	1234	1484	180
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	1422	1422	1547	1547	1572	1572
Adj Flow Rate, veh/h	14	15	122	1402	1686	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	15	15	5	5	3	3
Cap, veh/h	43	39	144	2605	2232	
Arrive On Green	0.03	0.03	0.13	1.00	0.75	0.00
Sat Flow, veh/h	1354	1205	1474	3017	3066	1332
Grp Volume(v), veh/h	14	15	122	1402	1686	0
Grp Sat Flow(s),veh/h/ln	1354	1205	1474	1470	1494	1332
Q Serve(g_s), s	1.1	1.3	8.9	0.0	36.0	0.0
Cycle Q Clear(g_c), s	1.1	1.3	8.9	0.0	36.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	43	39	144	2605	2232	
V/C Ratio(X)	0.32	0.39	0.85	0.54	0.76	
Avail Cap(c_a), veh/h	326	290	208	2605	2232	
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.73	0.73	1.00	0.00
Uniform Delay (d), s/veh	52.1	52.2	47.0	0.0	8.1	0.0
Incr Delay (d2), s/veh	5.1	7.5	15.8	0.6	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.9	6.5	0.4	15.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.1	59.7	62.8	0.6	10.5	0.0
LnGrp LOS	E	E	E	A	B	
Approach Vol, veh/h	29			1524	1686	
Approach Delay, s/veh	58.5			5.6	10.5	
Approach LOS	E			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	8.0	15.3	86.7	102.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	15.5	54.5	74.5
Max Q Clear Time (g_c+I1), s	3.3	10.9	38.0	2.0
Green Ext Time (p_c), s	0.1	0.1	13.4	26.8

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] 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)	22	96	186	156	27	106	75	890	100	169	1093	19
Future Volume (veh/h)	22	96	186	156	27	106	75	890	100	169	1093	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	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	1585	1585	1585	1585	1585	1585	1535	1535	1535	1572	1572	1572
Adj Flow Rate, veh/h	24	104	59	170	29	42	82	967	45	184	1188	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	3	3	3
Cap, veh/h	232	141	119	254	254	213	385	1089	481	420	1295	22
Arrive On Green	0.04	0.09	0.09	0.11	0.16	0.16	0.22	0.37	0.37	0.37	0.57	0.57
Sat Flow, veh/h	1509	1585	1339	1509	1585	1331	1462	2916	1288	1497	3006	51
Grp Volume(v), veh/h	24	104	59	170	29	42	82	967	45	184	590	618
Grp Sat Flow(s),veh/h/ln	1509	1585	1339	1509	1585	1331	1462	1458	1288	1497	1494	1563
Q Serve(g_s), s	2.0	9.0	4.0	13.9	2.2	2.2	0.4	43.5	2.2	12.9	49.8	49.8
Cycle Q Clear(g_c), s	2.0	9.0	4.0	13.9	2.2	2.2	0.4	43.5	2.2	12.9	49.8	49.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	232	141	119	254	254	213	385	1089	481	420	643	673
V/C Ratio(X)	0.10	0.74	0.50	0.67	0.11	0.20	0.21	0.89	0.09	0.44	0.92	0.92
Avail Cap(c_a), veh/h	351	249	210	286	272	228	385	1312	580	420	768	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	53.6	62.2	27.8	48.8	50.3	17.2	42.1	41.1	14.1	35.6	27.7	27.7
Incr Delay (d2), s/veh	0.2	7.4	3.2	5.0	0.2	0.4	0.3	10.8	0.4	0.5	15.5	15.0
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(95%),veh/ln	1.4	7.1	3.8	9.6	1.6	2.4	4.1	24.0	1.9	7.5	24.6	25.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	69.6	31.0	53.8	50.5	17.6	42.4	51.9	14.5	36.2	43.2	42.7
LnGrp LOS	D	E	C	D	D	B	D	D	B	D	D	D
Approach Vol, veh/h		187			241			1094			1392	
Approach Delay, s/veh		55.4			47.1			49.6			42.0	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.2	57.3	21.0	17.4	36.2	65.3	11.0	27.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	16.0	63.0	19.0	22.0	7.0	72.0	17.0	24.0
Max Q Clear Time (g_c+I1), s	14.9	45.5	15.9	11.0	2.4	51.8	4.0	4.2
Green Ext Time (p_c), s	0.1	6.8	0.1	0.5	0.1	8.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	66	121	86	52	148	55	891	87	55	1052	24
Future Volume (veh/h)	71	66	121	86	52	148	55	891	87	55	1052	24
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		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	1547	1547	1547	1585	1585	1585	1560	1560	1560	1572	1572	1572
Adj Flow Rate, veh/h	78	73	133	95	57	163	60	979	96	60	1156	26
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	2	2	2	4	4	4	3	3	3
Cap, veh/h	93	214	180	97	221	186	329	1824	812	430	1839	41
Arrive On Green	0.06	0.14	0.14	0.06	0.14	0.14	0.08	1.00	1.00	0.05	0.82	0.82
Sat Flow, veh/h	1474	1547	1300	1509	1585	1332	1485	2964	1320	1497	2987	67
Grp Volume(v), veh/h	78	73	133	95	57	163	60	979	96	60	578	604
Grp Sat Flow(s),veh/h/ln	1474	1547	1300	1509	1585	1332	1485	1482	1320	1497	1494	1560
Q Serve(g_s), s	7.3	6.0	13.7	8.8	4.5	16.8	2.0	0.0	0.0	2.0	20.2	20.2
Cycle Q Clear(g_c), s	7.3	6.0	13.7	8.8	4.5	16.8	2.0	0.0	0.0	2.0	20.2	20.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	93	214	180	97	221	186	329	1824	812	430	920	960
V/C Ratio(X)	0.83	0.34	0.74	0.98	0.26	0.88	0.18	0.54	0.12	0.14	0.63	0.63
Avail Cap(c_a), veh/h	95	365	306	97	374	314	367	1824	812	468	920	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65	0.84	0.84	0.84
Uniform Delay (d), s/veh	64.8	54.5	57.9	65.4	53.8	59.1	10.0	0.0	0.0	8.6	6.7	6.7
Incr Delay (d2), s/veh	44.1	0.9	5.8	84.3	0.6	13.8	0.2	0.7	0.2	0.1	2.7	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(95%),veh/ln	7.1	4.4	8.5	9.6	3.3	10.6	1.2	0.3	0.1	1.2	8.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.0	55.5	63.7	149.7	54.4	72.8	10.1	0.7	0.2	8.7	9.4	9.3
LnGrp LOS	F	E	E	F	D	E	B	A	A	A	A	A
Approach Vol, veh/h		284			315			1135			1242	
Approach Delay, s/veh		74.0			92.7			1.2			9.4	
Approach LOS		E			F			A			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	91.2	14.0	24.4	10.4	91.2	13.9	24.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.0	69.0	9.0	33.0	9.0	69.0	9.0	33.0				
Max Q Clear Time (g_c+I1), s	4.0	2.0	10.8	15.7	4.0	22.2	9.3	18.8				
Green Ext Time (p_c), s	0.0	9.8	0.0	0.8	0.0	10.7	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	13	0	12	0	1017	20	11	1098	0
Future Volume (veh/h)	0	0	0	13	0	12	0	1017	20	11	1098	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.97		0.99	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	1610	1610	1610	1572	1572	1572	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	0	0	0	13	0	12	0	1048	21	11	1132	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	3	3	1	1	1	1	1	1
Cap, veh/h	0	54	0	100	0	44	470	2569	51	523	2716	0
Arrive On Green	0.00	0.00	0.00	0.03	0.00	0.03	0.00	1.00	1.00	0.01	0.89	0.00
Sat Flow, veh/h	0	1610	0	1457	0	1314	1521	3043	61	1521	3115	0
Grp Volume(v), veh/h	0	0	0	13	0	12	0	523	546	11	1132	0
Grp Sat Flow(s),veh/h/ln	0	1610	0	1457	0	1314	1521	1518	1586	1521	1518	0
Q Serve(g_s), s	0.0	0.0	0.0	1.2	0.0	1.2	0.0	0.0	0.0	0.1	8.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.2	0.0	1.2	0.0	0.0	0.0	0.1	8.7	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	54	0	100	0	44	470	1281	1340	523	2716	0
V/C Ratio(X)	0.00	0.00	0.00	0.13	0.00	0.27	0.00	0.41	0.41	0.02	0.42	0.00
Avail Cap(c_a), veh/h	0	288	0	312	0	235	567	1281	1340	598	2716	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.87	0.87	0.72	0.72	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	66.0	0.0	66.0	0.0	0.0	0.0	1.1	1.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	4.6	0.0	0.8	0.8	0.0	0.3	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(95%),veh/ln	0.0	0.0	0.0	0.9	0.0	0.9	0.0	0.5	0.5	0.0	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	66.8	0.0	70.6	0.0	0.8	0.8	1.2	1.6	0.0
LnGrp LOS	A	A	A	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		0			25			1069			1143	
Approach Delay, s/veh		0.0			68.6			0.8			1.6	
Approach LOS					E			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	123.2		9.7	0.0	130.3		9.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	91.0		25.0	9.0	91.0		25.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		0.0	0.0	10.7		3.2				
Green Ext Time (p_c), s	0.0	15.1		0.0	0.0	18.3		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			2.0									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	39	128	33	53	159	66	866	58	102	934	54
Future Volume (veh/h)	112	39	128	33	53	159	66	866	58	102	934	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1585	1585	1560	1560	1560	1560	1560	1560
Adj Flow Rate, veh/h	120	42	138	35	57	171	71	921	62	110	1004	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	4	4	4
Cap, veh/h	180	230	195	144	195	165	464	1494	101	189	1044	464
Arrive On Green	0.06	0.15	0.15	0.04	0.12	0.12	0.25	0.53	0.53	0.15	0.70	0.70
Sat Flow, veh/h	1509	1585	1340	1509	1585	1343	1485	2818	190	1485	2964	1318
Grp Volume(v), veh/h	120	42	138	35	57	171	71	484	499	110	1004	58
Grp Sat Flow(s),veh/h/ln	1509	1585	1340	1509	1585	1343	1485	1482	1526	1485	1482	1318
Q Serve(g_s), s	1.7	2.2	5.4	2.0	3.1	9.3	0.0	21.7	21.7	5.1	29.5	1.4
Cycle Q Clear(g_c), s	1.7	2.2	5.4	2.0	3.1	9.3	0.0	21.7	21.7	5.1	29.5	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	180	230	195	144	195	165	464	786	809	189	1044	464
V/C Ratio(X)	0.67	0.18	0.71	0.24	0.29	1.04	0.15	0.62	0.62	0.58	0.96	0.12
Avail Cap(c_a), veh/h	231	334	282	198	300	254	464	786	809	248	1092	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	0.91	0.91	0.91	0.66	0.66	0.66
Uniform Delay (d), s/veh	42.0	35.7	13.0	40.3	37.9	26.2	26.3	15.6	15.6	24.3	13.4	9.3
Incr Delay (d2), s/veh	3.1	0.2	2.9	0.6	0.6	56.9	0.1	3.3	3.2	1.4	15.2	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(95%),veh/ln	5.1	1.6	5.5	1.4	2.2	9.6	2.2	11.9	12.1	3.1	9.3	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	35.9	15.9	40.9	38.5	83.2	26.4	18.9	18.8	25.7	28.6	9.7
LnGrp LOS	D	D	B	D	D	F	C	B	B	C	C	A
Approach Vol, veh/h		300			263			1054			1172	
Approach Delay, s/veh		30.4			67.9			19.3			27.4	
Approach LOS		C			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.1	38.5	10.7	16.7	12.2	55.4	8.6	18.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	13.0	35.0	9.0	18.0	11.0	37.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	31.5	3.7	11.3	7.1	23.7	4.0	7.4
Green Ext Time (p_c), s	0.1	2.0	0.1	0.4	0.1	4.5	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		28.5
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	600	18	152	683	22	13	32	73	34	56	15
Future Volume (veh/h)	8	600	18	152	683	22	13	32	73	34	56	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	0.97		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	8	625	19	158	711	23	14	33	76	35	58	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	41	1897	57	582	2214	72	29	277	226	207	135	37
Arrive On Green	0.65	0.65	0.65	0.11	1.00	1.00	0.02	0.17	0.17	0.11	0.11	0.11
Sat Flow, veh/h	12	2920	88	1509	2974	96	1521	1597	1301	1241	1184	327
Grp Volume(v), veh/h	342	0	310	158	360	374	14	33	76	35	0	74
Grp Sat Flow(s),veh/h/ln	1583	0	1438	1509	1506	1564	1521	1597	1301	1241	0	1510
Q Serve(g_s), s	0.0	0.0	10.6	3.8	0.0	0.0	1.0	1.9	5.6	2.8	0.0	5.0
Cycle Q Clear(g_c), s	10.5	0.0	10.6	3.8	0.0	0.0	1.0	1.9	5.6	2.8	0.0	5.0
Prop In Lane	0.02		0.06	1.00		0.06	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	1062	0	934	582	1121	1165	29	277	226	207	0	172
V/C Ratio(X)	0.32	0.00	0.33	0.27	0.32	0.32	0.48	0.12	0.34	0.17	0.00	0.43
Avail Cap(c_a), veh/h	1062	0	934	630	1121	1165	118	574	467	364	0	364
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	0.94	0.94	0.94	0.97	0.97	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.6	0.0	8.6	5.4	0.0	0.0	53.4	38.4	39.9	44.5	0.0	45.4
Incr Delay (d2), s/veh	0.8	0.0	1.0	0.2	0.7	0.7	11.7	0.2	0.8	0.4	0.0	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(95%),veh/ln	6.5	0.0	6.0	1.7	0.4	0.4	0.9	1.4	3.4	1.6	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	0.0	9.6	5.6	0.7	0.7	65.1	38.5	40.7	44.8	0.0	47.1
LnGrp LOS	A	A	A	A	A	A	E	D	D	D	A	D
Approach Vol, veh/h		652			892			123			109	
Approach Delay, s/veh		9.5			1.6			42.9			46.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6	7	8
Phs Duration (G+Y+Rc), s		23.6		86.4	6.6	17.0	10.5	76.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		39.5		61.5	8.5	26.5	9.5	47.5
Max Q Clear Time (g_c+I1), s		7.6		2.0	3.0	7.0	5.8	12.6
Green Ext Time (p_c), s		0.4		5.4	0.0	0.4	0.1	4.5

Intersection Summary			
HCM 6th Ctrl Delay			10.1
HCM 6th LOS			B

HCM 6th Signalized Intersection Summary
31: Naval Ave & 11th St

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	663	10	30	744	9	11	21	131	15	40	82
Future Volume (veh/h)	5	663	10	30	744	9	11	21	131	15	40	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1547	1547	1547	1560	1560	1560	1572	1572	1572	1547	1547	1547
Adj Flow Rate, veh/h	5	698	11	32	783	9	12	22	138	16	42	86
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, %	5	5	5	4	4	4	3	3	3	5	5	5
Cap, veh/h	11	1943	31	51	2047	24	25	35	220	47	61	106
Arrive On Green	0.00	0.22	0.22	0.07	1.00	1.00	0.02	0.19	0.19	0.13	0.13	0.13
Sat Flow, veh/h	1474	2962	47	1485	3000	34	1497	187	1172	85	467	818
Grp Volume(v), veh/h	5	346	363	32	387	405	12	0	160	144	0	0
Grp Sat Flow(s),veh/h/ln	1474	1470	1539	1485	1482	1553	1497	0	1359	1371	0	0
Q Serve(g_s), s	0.4	22.0	22.0	2.3	0.0	0.0	0.9	0.0	11.9	5.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	22.0	22.0	2.3	0.0	0.0	0.9	0.0	11.9	11.2	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	1.00		0.86	0.11		0.60
Lane Grp Cap(c), veh/h	11	964	1009	51	1011	1059	25	0	255	214	0	0
V/C Ratio(X)	0.44	0.36	0.36	0.63	0.38	0.38	0.48	0.00	0.63	0.67	0.00	0.00
Avail Cap(c_a), veh/h	141	964	1009	115	1011	1059	116	0	513	389	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.86	0.86	0.86	0.97	0.00	0.97	1.00	0.00	0.00
Uniform Delay (d), s/veh	54.6	23.5	23.5	50.6	0.0	0.0	53.6	0.0	41.2	46.5	0.0	0.0
Incr Delay (d2), s/veh	23.3	1.0	0.9	10.7	0.9	0.9	13.1	0.0	2.5	3.6	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(95%),veh/ln	0.4	13.7	14.2	1.8	0.5	0.5	0.8	0.0	7.5	7.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.9	24.4	24.4	61.3	0.9	0.9	66.7	0.0	43.6	50.1	0.0	0.0
LnGrp LOS	E	C	C	E	A	A	E	A	D	D	A	A
Approach Vol, veh/h		714			824			172			144	
Approach Delay, s/veh		24.8			3.3			45.3			50.1	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	76.7	6.3	18.8	5.4	79.5		25.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	8.5	46.5	8.5	28.5	10.5	44.5		41.5
Max Q Clear Time (g_c+I1), s	4.3	24.0	2.9	13.2	2.4	2.0		13.9
Green Ext Time (p_c), s	0.0	4.6	0.0	0.7	0.0	5.9		1.1

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
32: High Ave & 11th St

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	756	1	6	718	8	23	34	11	39	18	56
Future Volume (veh/h)	84	756	1	6	718	8	23	34	11	39	18	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1522	1522	1522	1560	1560	1560	1610	1610	1610	1572	1572	1572
Adj Flow Rate, veh/h	100	900	1	7	855	10	27	40	13	46	21	67
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	7	7	7	4	4	4	0	0	0	3	3	3
Cap, veh/h	361	1929	2	452	1828	21	47	113	37	62	35	113
Arrive On Green	0.10	1.00	1.00	0.00	0.20	0.20	0.03	0.10	0.10	0.04	0.11	0.11
Sat Flow, veh/h	1450	2964	3	1485	3000	35	1533	1154	375	1497	326	1041
Grp Volume(v), veh/h	100	439	462	7	422	443	27	0	53	46	0	88
Grp Sat Flow(s),veh/h/ln	1450	1446	1521	1485	1482	1553	1533	0	1528	1497	0	1368
Q Serve(g_s), s	2.7	0.0	0.0	0.2	27.6	27.6	1.9	0.0	3.6	3.3	0.0	6.7
Cycle Q Clear(g_c), s	2.7	0.0	0.0	0.2	27.6	27.6	1.9	0.0	3.6	3.3	0.0	6.7
Prop In Lane	1.00		0.00	1.00		0.02	1.00		0.25	1.00		0.76
Lane Grp Cap(c), veh/h	361	941	990	452	903	946	47	0	149	62	0	148
V/C Ratio(X)	0.28	0.47	0.47	0.02	0.47	0.47	0.57	0.00	0.35	0.75	0.00	0.59
Avail Cap(c_a), veh/h	397	941	990	537	903	946	105	0	368	102	0	329
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.2	0.0	0.0	8.1	28.2	28.2	52.6	0.0	46.4	52.2	0.0	46.7
Incr Delay (d2), s/veh	0.4	1.6	1.5	0.0	1.7	1.7	10.6	0.0	1.4	16.2	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.7	0.7	0.1	16.9	17.6	1.6	0.0	2.6	2.8	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.6	1.6	1.5	8.1	30.0	29.9	63.2	0.0	47.8	68.4	0.0	50.5
LnGrp LOS	B	A	A	A	C	C	E	A	D	E	A	D
Approach Vol, veh/h		1001			872			80			134	
Approach Delay, s/veh		2.4			29.7			53.0			56.7	
Approach LOS		A			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	16.2	6.7	77.1	8.9	17.4	11.2	72.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	7.5	26.5	7.5	46.5	7.5	26.5	8.5	45.5
Max Q Clear Time (g_c+I1), s	5.3	5.6	2.2	2.0	3.9	8.7	4.7	29.6
Green Ext Time (p_c), s	0.0	0.2	0.0	7.1	0.0	0.4	0.1	5.0

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	254	85	14	275	10	22	40	7	8	68	12
Future Volume (veh/h)	26	254	85	14	275	10	22	40	7	8	68	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.97	0.98		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	1560	1560	1560	1547	1547	1547	1547	1547	1547	1585	1585	1585
Adj Flow Rate, veh/h	30	295	99	16	320	12	26	47	8	9	79	14
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	4	5	5	5	5	5	5	2	2	2
Cap, veh/h	65	541	458	37	486	18	215	230	250	141	293	259
Arrive On Green	0.04	0.35	0.35	0.02	0.33	0.33	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1485	1560	1320	1474	1481	56	300	1178	1278	73	1497	1323
Grp Volume(v), veh/h	30	295	99	16	0	332	73	0	8	88	0	14
Grp Sat Flow(s),veh/h/ln	1485	1560	1320	1474	0	1537	1478	0	1278	1570	0	1323
Q Serve(g_s), s	0.6	4.8	1.7	0.3	0.0	5.8	0.0	0.0	0.2	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.6	4.8	1.7	0.3	0.0	5.8	1.2	0.0	0.2	1.5	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.04	0.36		1.00	0.10		1.00
Lane Grp Cap(c), veh/h	65	541	458	37	0	504	445	0	250	434	0	259
V/C Ratio(X)	0.46	0.55	0.22	0.44	0.00	0.66	0.16	0.00	0.03	0.20	0.00	0.05
Avail Cap(c_a), veh/h	976	1774	1501	968	0	1748	1105	0	839	1151	0	869
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	8.2	7.2	15.0	0.0	9.0	10.6	0.0	10.2	10.7	0.0	10.2
Incr Delay (d2), s/veh	4.9	0.9	0.2	7.9	0.0	1.5	0.2	0.0	0.1	0.2	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(95%),veh/ln	0.5	2.0	0.6	0.3	0.0	2.6	0.6	0.0	0.1	0.8	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	9.1	7.4	22.9	0.0	10.5	10.8	0.0	10.2	10.9	0.0	10.3
LnGrp LOS	B	A	A	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h		424			348			81			102	
Approach Delay, s/veh		9.4			11.0			10.7			10.8	
Approach LOS		A			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.6	5.3	15.3		10.6	5.9	14.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	20.5	35.5		20.5	20.5	35.5				
Max Q Clear Time (g_c+I1), s		3.2	2.3	6.8		3.5	2.6	7.8				
Green Ext Time (p_c), s		0.3	0.0	2.2		0.4	0.0	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			10.3									
HCM 6th LOS			B									

MOVEMENT SUMMARY

Site: 34 [Washington Ave & Manette Bridge (Site Folder: 2044 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Washington Ave (NB)															
8	T1	All MCs	104	9.0	104	9.0	0.370	3.6	LOS A	2.1	56.1	0.49	0.50	0.49	23.7
18	R2	All MCs	265	9.0	265	9.0	0.370	4.0	LOS A	2.1	56.1	0.49	0.50	0.49	25.4
Approach			369	9.0	369	9.0	0.370	3.9	LOS A	2.1	56.1	0.49	0.50	0.49	24.9
East: Manette Bridge (WB)															
1	L2	All MCs	485	3.0	485	3.0	0.583	7.4	LOS A	4.0	102.2	0.37	0.56	0.37	24.8
16	R2	All MCs	225	3.0	225	3.0	0.583	4.1	LOS A	4.0	102.2	0.37	0.56	0.37	24.9
Approach			710	3.0	710	3.0	0.583	6.4	LOS A	4.0	102.2	0.37	0.56	0.37	24.9
North: Washington Ave (SB)															
7	L2	All MCs	247	5.0	247	5.0	0.331	8.3	LOS A	1.8	47.6	0.61	0.67	0.61	24.3
4	T1	All MCs	44	5.0	44	5.0	0.331	4.8	LOS A	1.8	47.6	0.61	0.67	0.61	22.9
Approach			291	5.0	291	5.0	0.331	7.8	LOS A	1.8	47.6	0.61	0.67	0.61	24.1
All Vehicles			1370	5.0	1370	5.0	0.583	6.0	LOS A	4.0	102.2	0.45	0.57	0.45	24.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	60	4	844	0	16	1	119	864	16	320	0
Future Volume (veh/h)	3	60	4	844	0	16	1	119	864	16	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1572	1572	1572	1560	1560	1560	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	3	65	4	933	0	0	1	129	939	17	348	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	4	4	4	2	2	2	2	2	2
Cap, veh/h	20	436	27	1047	550	0	39	308	1294	53	541	0
Arrive On Green	0.31	0.31	0.31	0.35	0.00	0.00	0.19	0.19	0.19	0.19	0.19	0.00
Sat Flow, veh/h	65	1402	86	2971	1560	0	2	1582	2364	59	2849	0
Grp Volume(v), veh/h	72	0	0	933	0	0	130	0	939	192	173	0
Grp Sat Flow(s),veh/h/ln	1553	0	0	1485	1560	0	1584	0	1182	1466	1370	0
Q Serve(g_s), s	3.2	0.0	0.0	28.2	0.0	0.0	0.0	0.0	18.5	1.6	11.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	28.2	0.0	0.0	6.8	0.0	18.5	10.8	11.0	0.0
Prop In Lane	0.04		0.06	1.00		0.00	0.01		1.00	0.09		0.00
Lane Grp Cap(c), veh/h	483	0	0	1047	550	0	347	0	1294	327	267	0
V/C Ratio(X)	0.15	0.00	0.00	0.89	0.00	0.00	0.38	0.00	0.73	0.59	0.65	0.00
Avail Cap(c_a), veh/h	483	0	0	1345	706	0	347	0	1294	327	267	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	0.00	0.91	0.00	0.00	1.00	0.00	1.00	0.69	0.69	0.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	29.0	0.0	0.0	33.6	0.0	13.9	35.1	35.2	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	10.5	0.0	0.0	1.0	0.0	2.2	2.3	4.3	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(95%),veh/ln	2.1	0.0	0.0	16.6	0.0	0.0	4.8	0.0	17.0	7.1	6.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	39.6	0.0	0.0	34.5	0.0	16.2	37.4	39.5	0.0
LnGrp LOS	C	A	A	D	A	A	C	A	B	D	D	A
Approach Vol, veh/h		72			933			1069			365	
Approach Delay, s/veh		23.8			39.6			18.4			38.4	
Approach LOS		C			D			B			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		34.0		23.0		38.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		20.0		18.5		43.0				
Max Q Clear Time (g_c+I1), s		20.5		5.2		13.0		30.2				
Green Ext Time (p_c), s		0.0		0.2		1.4		3.3				

Intersection Summary			
HCM 6th Ctrl Delay			29.6
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	913	2	0	773	7	30	4	5	121	4	50
Future Volume (veh/h)	26	913	2	0	773	7	30	4	5	121	4	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	1585	1585	1585	1560	1560	1560	1447	1447	1447	1535	1535	1535
Adj Flow Rate, veh/h	28	971	2	0	822	7	32	4	5	129	4	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	4	4	4	13	13	13	6	6	6
Cap, veh/h	74	2165	4	0	2241	19	203	24	22	213	9	63
Arrive On Green	0.99	0.99	0.99	0.00	0.74	0.74	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	46	2909	6	0	3089	26	842	151	138	922	55	389
Grp Volume(v), veh/h	514	0	487	0	404	425	41	0	0	186	0	0
Grp Sat Flow(s),veh/h/ln	1520	0	1441	0	1482	1555	1131	0	0	1366	0	0
Q Serve(g_s), s	0.0	0.0	0.6	0.0	9.1	9.1	0.0	0.0	0.0	9.6	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.6	0.0	9.1	9.1	2.9	0.0	0.0	12.5	0.0	0.0
Prop In Lane	0.05		0.00	0.00		0.02	0.78		0.12	0.69		0.28
Lane Grp Cap(c), veh/h	1171	0	1072	0	1103	1157	250	0	0	284	0	0
V/C Ratio(X)	0.44	0.00	0.45	0.00	0.37	0.37	0.16	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	1171	0	1072	0	1103	1157	344	0	0	386	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)	0.86	0.00	0.86	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.1	0.0	4.3	4.3	34.6	0.0	0.0	38.6	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.2	0.0	0.9	0.9	0.4	0.0	0.0	3.1	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(95%),veh/ln	0.8	0.0	0.8	0.0	4.6	4.8	1.5	0.0	0.0	7.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.2	0.0	1.3	0.0	5.2	5.2	35.0	0.0	0.0	41.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	D	A	A
Approach Vol, veh/h		1001			829			41			186	
Approach Delay, s/veh		1.2			5.2			35.0			41.6	
Approach LOS		A			A			C			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.8		75.2		19.8		75.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		63.5		22.5		63.5				
Max Q Clear Time (g_c+I1), s		4.9		2.6		14.5		11.1				
Green Ext Time (p_c), s		0.1		20.1		0.7		14.2				

Intersection Summary			
HCM 6th Ctrl Delay			7.2
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	770	78	104	670	19	15	34	16	28	202	94
Future Volume (veh/h)	97	770	78	104	670	19	15	34	16	28	202	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	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	1572	1572	1572	1572	1572	1572	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	100	794	80	107	691	20	15	35	16	29	208	97
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	1	1	1
Cap, veh/h	127	1130	114	137	1243	36	33	288	237	57	316	263
Arrive On Green	0.08	0.41	0.41	0.09	0.42	0.42	0.02	0.18	0.18	0.04	0.20	0.20
Sat Flow, veh/h	1497	2739	276	1497	2965	86	1509	1585	1304	1521	1597	1332
Grp Volume(v), veh/h	100	433	441	107	348	363	15	35	16	29	208	97
Grp Sat Flow(s),veh/h/ln	1497	1494	1521	1497	1494	1557	1509	1585	1304	1521	1597	1332
Q Serve(g_s), s	4.3	15.6	15.6	4.6	11.5	11.5	0.6	1.2	0.7	1.2	7.8	4.1
Cycle Q Clear(g_c), s	4.3	15.6	15.6	4.6	11.5	11.5	0.6	1.2	0.7	1.2	7.8	4.1
Prop In Lane	1.00		0.18	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	616	627	137	626	653	33	288	237	57	316	263
V/C Ratio(X)	0.79	0.70	0.70	0.78	0.56	0.56	0.45	0.12	0.07	0.51	0.66	0.37
Avail Cap(c_a), veh/h	817	1733	1764	1047	1733	1806	1055	1108	911	596	1117	931
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	29.2	15.8	15.8	28.9	14.3	14.3	31.4	22.3	22.1	30.7	24.1	22.6
Incr Delay (d2), s/veh	12.1	1.8	1.7	11.0	0.9	0.9	11.3	0.2	0.1	8.1	2.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	8.9	9.0	3.6	6.7	7.0	0.6	0.8	0.4	1.0	5.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	17.6	17.6	40.0	15.2	15.2	42.7	22.5	22.2	38.9	26.9	23.6
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		974			818			66			334	
Approach Delay, s/veh		20.0			18.5			27.0			27.0	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	16.3	10.4	31.4	5.9	17.4	10.0	31.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	45.5	45.5	75.5	45.5	45.5	35.5	75.5
Max Q Clear Time (g_c+I1), s	3.2	3.2	6.6	17.6	2.6	9.8	6.3	13.5
Green Ext Time (p_c), s	0.1	0.3	0.4	9.2	0.0	2.1	0.3	6.9

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	766	21	8	694	0	47	5	13	12	15	3
Future Volume (veh/h)	11	766	21	8	694	0	47	5	13	12	15	3
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		1.00	0.87		0.91	0.93		0.84
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	1560	1560	1560	1535	1535	1535	1560	1560	1560	1610	1610	1610
Adj Flow Rate, veh/h	12	815	22	9	738	0	50	5	14	13	16	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	0	0	0
Cap, veh/h	45	2231	60	35	1190	0	172	19	36	111	119	19
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	18	2847	76	6	1519	0	849	137	251	488	840	137
Grp Volume(v), veh/h	444	0	405	747	0	0	69	0	0	32	0	0
Grp Sat Flow(s),veh/h/ln	1538	0	1404	1526	0	0	1238	0	0	1465	0	0
Q Serve(g_s), s	0.0	0.0	10.5	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	10.5	24.6	0.0	0.0	5.9	0.0	0.0	2.2	0.0	0.0
Prop In Lane	0.03		0.05	0.01		0.00	0.72		0.20	0.41		0.09
Lane Grp Cap(c), veh/h	1236	0	1100	1226	0	0	227	0	0	249	0	0
V/C Ratio(X)	0.36	0.00	0.37	0.61	0.00	0.00	0.30	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1236	0	1100	1226	0	0	313	0	0	351	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)	0.71	0.00	0.71	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	3.9	5.5	0.0	0.0	46.7	0.0	0.0	45.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.7	2.3	0.0	0.0	0.3	0.0	0.0	0.1	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(95%),veh/ln	5.4	0.0	5.0	11.8	0.0	0.0	3.4	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	0.0	4.6	7.7	0.0	0.0	46.9	0.0	0.0	45.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		849			747			69			32	
Approach Delay, s/veh		4.6			7.7			46.9			45.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	98.5	21.5	98.5	21.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	85.5	25.5	85.5	25.5
Max Q Clear Time (g_c+I1), s	12.5	4.2	26.6	7.9
Green Ext Time (p_c), s	11.1	0.1	11.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	356	208	10	24	39
Future Volume (veh/h)	60	356	208	10	24	39
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1497	1497	1572	1572	1522	1522
Adj Flow Rate, veh/h	61	363	212	10	24	40
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	9	9	3	3	7	7
Cap, veh/h	339	936	1090	51	56	94
Arrive On Green	0.38	0.38	0.38	0.38	0.11	0.11
Sat Flow, veh/h	216	2561	2982	136	495	826
Grp Volume(v), veh/h	236	188	109	113	65	0
Grp Sat Flow(s),veh/h/ln	1415	1294	1494	1546	1342	0
Q Serve(g_s), s	0.0	1.9	0.9	0.9	0.8	0.0
Cycle Q Clear(g_c), s	2.1	1.9	0.9	0.9	0.8	0.0
Prop In Lane	0.26			0.09	0.37	0.62
Lane Grp Cap(c), veh/h	789	486	561	581	152	0
V/C Ratio(X)	0.30	0.39	0.19	0.20	0.43	0.00
Avail Cap(c_a), veh/h	3799	3343	3859	3994	1943	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.1	4.0	3.7	3.7	7.3	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.1	0.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.2	0.1	0.1	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.2	4.4	3.8	3.8	8.7	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		424	222		65	
Approach Delay, s/veh		4.3	3.8		8.7	
Approach LOS		A	A		A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		11.1		6.5		11.1
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		45.5		25.5		45.5
Max Q Clear Time (g_c+I1), s		4.1		2.8		2.9
Green Ext Time (p_c), s		2.4		0.1		1.2

Intersection Summary			
HCM 6th Ctrl Delay			4.6
HCM 6th LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	135	240	117	172	25	0	0	0	14	200	8
Future Volume (veh/h)	15	135	240	117	172	25	0	0	0	14	200	8
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	0.95		0.99				1.00		0.76
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	1472	1472	1472	1497	1497	1497				1547	1547	1547
Adj Flow Rate, veh/h	17	153	273	133	195	28				16	227	9
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	11	11	11	9	9	9				5	5	5
Cap, veh/h	127	611	482	282	340	42				34	481	19
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44				0.35	0.35	0.35
Sat Flow, veh/h	52	1400	1104	347	779	96				96	1363	54
Grp Volume(v), veh/h	170	0	273	356	0	0				252	0	0
Grp Sat Flow(s),veh/h/ln	1452	0	1104	1222	0	0				1513	0	0
Q Serve(g_s), s	0.0	0.0	7.0	4.9	0.0	0.0				4.9	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	7.0	8.2	0.0	0.0				4.9	0.0	0.0
Prop In Lane	0.10		1.00	0.37		0.08				0.06		0.04
Lane Grp Cap(c), veh/h	738	0	482	663	0	0				534	0	0
V/C Ratio(X)	0.23	0.00	0.57	0.54	0.00	0.00				0.47	0.00	0.00
Avail Cap(c_a), veh/h	1838	0	1338	1562	0	0				1235	0	0
HCM Platoon Ratio	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	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	0.0	8.0	8.2	0.0	0.0				9.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.1	0.7	0.0	0.0				0.6	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
%ile BackOfQ(95%),veh/ln	1.2	0.0	2.4	3.1	0.0	0.0				2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	0.0	9.1	8.8	0.0	0.0				10.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				B	A	A
Approach Vol, veh/h		443			356						252	
Approach Delay, s/veh		8.3			8.8						10.2	
Approach LOS		A			A						B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		20.6		17.4		20.6						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		46.0		31.0		46.0						
Max Q Clear Time (g_c+I1), s		9.0		6.9		10.2						
Green Ext Time (p_c), s		2.4		1.6		3.1						

Intersection Summary		
HCM 6th Ctrl Delay		8.9
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1	0	0	3	1	101	195	0	0	0	228
Future Volume (veh/h)	69	1	0	0	3	1	101	195	0	0	0	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.97		1.00	1.00		0.95
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	1585	1585	0	0	1610	1610	1434	1434	1434	1459	1459	1459
Adj Flow Rate, veh/h	76	1	0	0	3	1	111	214	0	0	0	251
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	0	0	0	0	14	14	14	12	12	12
Cap, veh/h	140	2	0	0	8	3	418	744	0	0	0	540
Arrive On Green	0.09	0.09	0.00	0.00	0.01	0.01	0.46	0.46	0.00	0.00	0.00	0.46
Sat Flow, veh/h	1491	20	0	0	1155	385	489	1684	0	0	0	1173
Grp Volume(v), veh/h	77	0	0	0	0	4	172	153	0	0	0	251
Grp Sat Flow(s),veh/h/ln	1510	0	0	0	0	1539	868	1240	0	0	0	1173
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	0.1	2.2	2.3	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.0	0.0	0.1	6.7	2.3	0.0	0.0	0.0	4.5
Prop In Lane	0.99		0.00	0.00		0.25	0.65		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	142	0	0	0	0	10	592	570	0	0	0	540
V/C Ratio(X)	0.54	0.00	0.00	0.00	0.00	0.40	0.29	0.27	0.00	0.00	0.00	0.47
Avail Cap(c_a), veh/h	1254	0	0	0	0	777	2090	2240	0	0	0	2121
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	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	0.0	0.0	15.2	6.5	5.1	0.0	0.0	0.0	5.7
Incr Delay (d2), s/veh	2.4	0.0	0.0	0.0	0.0	9.1	0.3	0.3	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0	0.0	0.0	0.0	0.1	0.8	0.7	0.0	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	0.0	0.0	0.0	0.0	24.3	6.8	5.4	0.0	0.0	0.0	6.5
LnGrp LOS	B	A	A	A	A	C	A	A	A	A	A	A
Approach Vol, veh/h		77			4			325			251	
Approach Delay, s/veh		15.7			24.3			6.2			6.5	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	18.6	7.4	18.6	4.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	55.5	25.5	55.5	15.5
Max Q Clear Time (g_c+I1), s	8.7	3.5	6.5	2.1
Green Ext Time (p_c), s	3.0	0.3	2.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	190	24	82	13	40	3	896	0	85	855	1
Future Volume (veh/h)	39	190	24	82	13	40	3	896	0	85	855	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1522	1522	1522	1585	1585	0	1585	1585	1585
Adj Flow Rate, veh/h	41	198	25	85	14	0	3	933	0	89	891	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	4	7	7	7	2	2	0	2	2	2
Cap, veh/h	72	292	244	206	323		7	1221	0	113	1467	2
Arrive On Green	0.05	0.19	0.19	0.07	0.21	0.00	0.00	0.41	0.00	0.07	0.48	0.48
Sat Flow, veh/h	1485	1560	1303	2812	1522	1290	1509	3091	0	1509	3086	3
Grp Volume(v), veh/h	41	198	25	85	14	0	3	933	0	89	435	457
Grp Sat Flow(s),veh/h/ln	1485	1560	1303	1406	1522	1290	1509	1506	0	1509	1506	1584
Q Serve(g_s), s	1.7	7.5	1.0	1.8	0.5	0.0	0.1	17.0	0.0	3.7	13.6	13.6
Cycle Q Clear(g_c), s	1.7	7.5	1.0	1.8	0.5	0.0	0.1	17.0	0.0	3.7	13.6	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	72	292	244	206	323		7	1221	0	113	716	753
V/C Ratio(X)	0.57	0.68	0.10	0.41	0.04		0.41	0.76	0.00	0.79	0.61	0.61
Avail Cap(c_a), veh/h	1307	686	573	707	383		379	4044	0	379	2022	2128
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	24.1	21.4	28.2	19.9	0.0	31.6	16.3	0.0	29.0	12.3	12.3
Incr Delay (d2), s/veh	6.8	2.7	0.2	1.3	0.1	0.0	12.9	0.8	0.0	4.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	5.2	0.6	1.1	0.3	0.0	0.1	9.1	0.0	2.6	7.3	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	26.8	21.6	29.5	20.0	0.0	44.5	17.1	0.0	33.5	12.9	12.9
LnGrp LOS	D	C	C	C	B		D	B	A	C	B	B
Approach Vol, veh/h		264			99			936			981	
Approach Delay, s/veh		27.8			28.2			17.2			14.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	34.8	8.7	15.9	8.8	30.3	7.1	17.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	85.5	16.0	28.0	16.0	85.5	56.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	15.6	3.8	9.5	5.7	19.0	3.7	2.5
Green Ext Time (p_c), s	0.0	5.4	0.2	1.1	0.1	6.8	0.1	0.0

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

Notes

Unsignalized Delay for [WBR] 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)	23	22	14	8	1	12	12	1152	67	30	964	17
Future Volume (veh/h)	23	22	14	8	1	12	12	1152	67	30	964	17
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		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	1572	1572	1572	1447	1447	1447	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	24	23	15	8	1	13	13	1213	71	32	1015	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, %	3	3	3	13	13	13	2	2	2	2	2	2
Cap, veh/h	35	34	22	51	3	42	29	1769	789	61	2457	44
Arrive On Green	0.06	0.06	0.06	0.04	0.04	0.04	0.02	0.59	0.59	0.04	0.61	0.61
Sat Flow, veh/h	572	548	357	1378	88	1144	1509	3011	1343	1509	4036	72
Grp Volume(v), veh/h	62	0	0	8	0	14	13	1213	71	32	638	395
Grp Sat Flow(s),veh/h/ln	1477	0	0	1378	0	1232	1509	1506	1343	1509	1268	1572
Q Serve(g_s), s	2.7	0.0	0.0	0.4	0.0	0.7	0.6	18.3	1.5	1.4	8.7	8.7
Cycle Q Clear(g_c), s	2.7	0.0	0.0	0.4	0.0	0.7	0.6	18.3	1.5	1.4	8.7	8.7
Prop In Lane	0.39		0.24	1.00		0.93	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	91	0	0	51	0	45	29	1769	789	61	1543	957
V/C Ratio(X)	0.68	0.00	0.00	0.16	0.00	0.31	0.45	0.69	0.09	0.53	0.41	0.41
Avail Cap(c_a), veh/h	359	0	0	1371	0	1225	355	3887	1734	355	3273	2029
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	0.0	30.7	0.0	30.9	31.9	9.4	5.9	31.0	6.7	6.7
Incr Delay (d2), s/veh	8.5	0.0	0.0	1.1	0.0	2.8	3.9	0.7	0.1	2.6	0.3	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(95%),veh/ln	2.1	0.0	0.0	0.2	0.0	0.4	0.4	7.6	0.6	0.9	3.4	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	0.0	0.0	31.8	0.0	33.7	35.9	10.1	6.0	33.6	7.0	7.1
LnGrp LOS	D	A	A	C	A	C	D	B	A	C	A	A
Approach Vol, veh/h		62			22			1297			1065	
Approach Delay, s/veh		38.8			33.0			10.1			7.8	
Approach LOS		D			C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	45.1		6.9	7.2	43.7		8.1
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.0
Max Green Setting (Gmax), s	15.5	85.0		65.5	15.5	85.0		16.0
Max Q Clear Time (g_c+I1), s	2.6	10.7		2.7	3.4	20.3		4.7
Green Ext Time (p_c), s	0.0	14.0		0.1	0.0	18.4		0.2

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

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↑	↱	↰	↱	
Traffic Volume (veh/h)	5	192	8	94	184	122	20	45	118	37	32	5
Future Volume (veh/h)	5	192	8	94	184	122	20	45	118	37	32	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1409	1409	1409	1510	1510	1510	1560	1560	1560	1497	1497	1497
Adj Flow Rate, veh/h	6	223	9	109	214	142	23	52	0	43	37	6
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	16	16	16	8	8	8	4	4	4	9	9	9
Cap, veh/h	13	427	17	167	319	212	383	223		371	180	29
Arrive On Green	0.01	0.32	0.32	0.12	0.38	0.38	0.14	0.14	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1342	1345	54	1438	847	562	1342	1560	1322	1277	1257	204
Grp Volume(v), veh/h	6	0	232	109	0	356	23	52	0	43	0	43
Grp Sat Flow(s),veh/h/ln	1342	0	1399	1438	0	1408	1342	1560	1322	1277	0	1460
Q Serve(g_s), s	0.1	0.0	4.3	2.3	0.0	6.7	0.5	0.9	0.0	1.0	0.0	0.8
Cycle Q Clear(g_c), s	0.1	0.0	4.3	2.3	0.0	6.7	1.3	0.9	0.0	1.9	0.0	0.8
Prop In Lane	1.00		0.04	1.00		0.40	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	13	0	444	167	0	531	383	223		371	0	209
V/C Ratio(X)	0.46	0.00	0.52	0.65	0.00	0.67	0.06	0.23		0.12	0.00	0.21
Avail Cap(c_a), veh/h	1031	0	1953	1398	0	1590	1285	1272		1430	0	1420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	8.9	13.5	0.0	8.3	12.6	12.1	0.0	13.0	0.0	12.1
Incr Delay (d2), s/veh	31.8	0.0	1.4	5.9	0.0	2.1	0.1	0.8	0.0	0.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	1.8	1.5	0.0	2.6	0.2	0.6	0.0	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	0.0	10.3	19.4	0.0	10.4	12.7	12.9	0.0	13.2	0.0	12.9
LnGrp LOS	D	A	B	B	A	B	B	B		B	A	B
Approach Vol, veh/h		238			465			75			86	
Approach Delay, s/veh		11.2			12.5			12.8			13.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	5.8	17.5	8.6	7.7	15.6	8.6
Change Period (Y+Rc), s	5.5	* 5.5	4.0	4.0	5.5	4.0
Max Green Setting (Gmax), s	24.5	* 36	26.0	31.0	44.5	31.0
Max Q Clear Time (g_c+I1), s	2.1	8.7	3.3	4.3	6.3	3.9
Green Ext Time (p_c), s	0.0	3.3	0.4	0.5	2.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	341	12	73	510	141	10	6	114	86	11	30
Future Volume (veh/h)	7	341	12	73	510	141	10	6	114	86	11	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	1510	1510	1510	1522	1522	1522	1346	1346	1346
Adj Flow Rate, veh/h	8	371	13	79	554	0	11	7	0	93	12	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	7	8	8	8	7	7	7	21	21	21
Cap, veh/h	19	873	31	140	1120		417	205		402	181	
Arrive On Green	0.01	0.31	0.31	0.10	0.39	0.00	0.13	0.13	0.00	0.13	0.13	0.00
Sat Flow, veh/h	1450	2850	100	1438	2868	1279	1344	1522	0	1194	1346	0
Grp Volume(v), veh/h	8	188	196	79	554	0	11	7	0	93	12	0
Grp Sat Flow(s),veh/h/ln	1450	1446	1504	1438	1434	1279	1344	1522	0	1194	1346	0
Q Serve(g_s), s	0.2	3.0	3.0	1.5	4.3	0.0	0.2	0.1	0.0	2.1	0.2	0.0
Cycle Q Clear(g_c), s	0.2	3.0	3.0	1.5	4.3	0.0	0.4	0.1	0.0	2.3	0.2	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	19	443	461	140	1120		417	205		402	181	
V/C Ratio(X)	0.43	0.42	0.43	0.57	0.49		0.03	0.03		0.23	0.07	
Avail Cap(c_a), veh/h	521	2003	2083	1500	5935		1638	1588		1487	1405	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.3	8.1	8.1	12.6	6.7	0.0	11.2	11.0	0.0	12.0	11.0	0.0
Incr Delay (d2), s/veh	20.5	0.9	0.9	5.0	0.4	0.0	0.1	0.1	0.0	0.6	0.3	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(95%),veh/ln	0.3	1.2	1.2	1.0	1.3	0.0	0.1	0.1	0.0	0.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	9.0	9.0	17.6	7.1	0.0	11.3	11.1	0.0	12.6	11.4	0.0
LnGrp LOS	C	A	A	B	A		B	B		B	B	
Approach Vol, veh/h		392			633			18			105	
Approach Delay, s/veh		9.5			8.4			11.2			12.5	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	4.9	15.9	8.4	7.3	13.5	8.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	60.5	30.5	30.5	40.5	30.5
Max Q Clear Time (g_c+I1), s	2.2	6.3	2.4	3.5	5.0	4.3
Green Ext Time (p_c), s	0.0	5.1	0.1	0.3	3.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, WBR, SBR] 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)	251	223	81	6	152	2	125	55	9	10	29	240
Future Volume (veh/h)	251	223	81	6	152	2	125	55	9	10	29	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1535	1535	1535	1560	1560	1560	1547	1547	1547
Adj Flow Rate, veh/h	251	225	82	6	154	2	126	56	9	10	29	242
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	5	5	5
Cap, veh/h	292	632	223	14	322	4	162	72	205	86	249	287
Arrive On Green	0.20	0.30	0.30	0.01	0.11	0.11	0.16	0.16	0.16	0.22	0.22	0.22
Sat Flow, veh/h	1485	2132	752	1462	2947	38	1044	464	1319	392	1136	1309
Grp Volume(v), veh/h	251	154	153	6	76	80	182	0	9	39	0	242
Grp Sat Flow(s),veh/h/ln	1485	1482	1402	1462	1458	1528	1508	0	1319	1528	0	1309
Q Serve(g_s), s	9.2	4.6	4.9	0.2	2.8	2.8	6.5	0.0	0.3	1.2	0.0	10.0
Cycle Q Clear(g_c), s	9.2	4.6	4.9	0.2	2.8	2.8	6.5	0.0	0.3	1.2	0.0	10.0
Prop In Lane	1.00		0.54	1.00		0.03	0.69		1.00	0.26		1.00
Lane Grp Cap(c), veh/h	292	439	416	14	159	167	234	0	205	334	0	287
V/C Ratio(X)	0.86	0.35	0.37	0.43	0.48	0.48	0.78	0.00	0.04	0.12	0.00	0.84
Avail Cap(c_a), veh/h	330	1105	1046	156	919	963	455	0	398	461	0	395
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	21.9	15.6	15.6	27.7	23.6	23.6	22.8	0.0	20.2	17.6	0.0	21.1
Incr Delay (d2), s/veh	18.2	0.5	0.5	19.5	2.2	2.1	5.5	0.0	0.1	0.2	0.0	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.8	2.6	2.6	0.3	1.7	1.8	4.6	0.0	0.2	0.7	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	16.0	16.2	47.3	25.8	25.7	28.3	0.0	20.3	17.8	0.0	32.5
LnGrp LOS	D	B	B	D	C	C	C	A	C	B	A	C
Approach Vol, veh/h		558			162			191			281	
Approach Delay, s/veh		26.9			26.5			27.9			30.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	21.2		16.8	15.6	10.7		13.3
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	6.0	42.0		17.0	12.5	35.5		17.0
Max Q Clear Time (g_c+I1), s	11.2	6.9		12.0	11.2	4.8		8.5
Green Ext Time (p_c), s	0.0	1.9		0.5	0.1	0.8		0.6

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

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	8	120	0	0	127
Future Vol, veh/h	67	8	120	0	0	127
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	10	10	24	24
Mvmt Flow	88	11	158	0	0	167
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.6	8.6	9.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	89%	0%
Vol Thru, %	100%	0%	100%
Vol Right, %	0%	11%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	120	75	127
LT Vol	0	67	0
Through Vol	120	0	127
RT Vol	0	8	0
Lane Flow Rate	158	99	167
Geometry Grp	1	1	1
Degree of Util (X)	0.198	0.132	0.22
Departure Headway (Hd)	4.511	4.832	4.73
Convergence, Y/N	Yes	Yes	Yes
Cap	797	743	760
Service Time	2.527	2.853	2.746
HCM Lane V/C Ratio	0.198	0.133	0.22
HCM Control Delay	8.6	8.6	9.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.5	0.8

Intersection						
Int Delay, s/veh	3.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	73	60	138	152	134
Future Vol, veh/h	40	73	60	138	152	134
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	7	7	5	5	4	4
Mvmt Flow	60	109	90	206	227	200

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	717	331	429	0	-	0
Stage 1	329	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.15	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.245	-	-	-
Pot Cap-1 Maneuver	389	699	1115	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	352	697	1113	-	-	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	2.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1113	-	517	-	-
HCM Lane V/C Ratio	0.08	-	0.326	-	-
HCM Control Delay (s)	8.5	0	15.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.4	-	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	67	1	0	94	10	0	8	1	0	10	85
Future Vol, veh/h	20	67	1	0	94	10	0	8	1	0	10	85
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	8	8	8
Mvmt Flow	27	92	1	0	129	14	0	11	1	0	14	116
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	8.2	7.7	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	23%	0%	0%
Vol Thru, %	89%	76%	90%	11%
Vol Right, %	11%	1%	10%	89%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	88	104	95
LT Vol	0	20	0	0
Through Vol	8	67	94	10
RT Vol	1	1	10	85
Lane Flow Rate	12	121	142	130
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.149	0.171	0.148
Departure Headway (Hd)	4.57	4.46	4.311	4.107
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	784	808	836	876
Service Time	2.59	2.465	2.314	2.122
HCM Lane V/C Ratio	0.015	0.15	0.17	0.148
HCM Control Delay	7.7	8.2	8.2	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.5	0.6	0.5

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	55	165	50	46	0	165	66	37	4	47	7
Future Vol, veh/h	7	55	165	50	46	0	165	66	37	4	47	7
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	5	5	5	5	5	5	2	2	2	19	19	19
Mvmt Flow	9	72	217	66	61	0	217	87	49	5	62	9
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	12.5	11.3	11.9	10.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	52%	100%	0%
Vol Thru, %	0%	64%	0%	25%	48%	0%	87%
Vol Right, %	0%	36%	0%	75%	0%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	103	7	220	96	4	54
LT Vol	165	0	7	0	50	4	0
Through Vol	0	66	0	55	46	0	47
RT Vol	0	37	0	165	0	0	7
Lane Flow Rate	217	136	9	289	126	5	71
Geometry Grp	5	5	5	5	4b	5	5
Degree of Util (X)	0.387	0.213	0.017	0.444	0.225	0.01	0.129
Departure Headway (Hd)	6.42	5.659	6.557	5.522	6.417	7.156	6.554
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	560	634	546	651	560	500	546
Service Time	4.153	3.391	4.289	3.253	4.455	4.901	4.299
HCM Lane V/C Ratio	0.388	0.215	0.016	0.444	0.225	0.01	0.13
HCM Control Delay	13.2	9.9	9.4	12.6	11.3	10	10.3
HCM Lane LOS	B	A	A	B	B	A	B
HCM 95th-tile Q	1.8	0.8	0.1	2.3	0.9	0	0.4

MOVEMENT SUMMARY

Site: 74 [Wheaton Way & Manette Bridge (Site Folder: 2044 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Harkins St (WB)															
6	T1	All MCs	254	1.7	254	1.7	0.254	6.3	LOS A	1.3	32.8	0.46	0.55	0.46	34.5
16	R2	All MCs	17	1.7	17	1.7	0.254	6.1	LOS A	1.3	32.8	0.46	0.55	0.46	34.2
Approach			271	1.7	271	1.7	0.254	6.3	LOS A	1.3	32.8	0.46	0.55	0.46	34.4
North: Wheaton Way (SB)															
7u	U	All MCs	1	3.1	1	3.1	0.356	12.5	LOS B	2.1	55.0	0.49	0.59	0.49	34.0
7	L2	All MCs	15	3.1	15	3.1	0.356	10.5	LOS B	2.1	55.0	0.49	0.59	0.49	34.0
14	R2	All MCs	367	3.1	367	3.1	0.356	6.0	LOS A	2.1	55.0	0.49	0.59	0.49	34.4
Approach			383	3.1	383	3.1	0.356	6.2	LOS A	2.1	55.0	0.49	0.59	0.49	34.4
West: Manette Bridge (EB)															
5	L2	All MCs	296	6.2	296	6.2	0.343	9.1	LOS A	2.2	58.4	0.12	0.59	0.12	33.3
2	T1	All MCs	141	6.2	141	6.2	0.343	4.9	LOS A	2.2	58.4	0.12	0.59	0.12	33.9
Approach			437	6.2	437	6.2	0.343	7.7	LOS A	2.2	58.4	0.12	0.59	0.12	33.5
All Vehicles			1091	4.0	1091	4.0	0.356	6.8	LOS A	2.2	58.4	0.34	0.58	0.34	34.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	163	6	0	0	0	0	0	0	43
Future Vol, veh/h	0	0	0	163	6	0	0	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	4	0	0	0	0	0	0	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	3	3	3	0	0	0	9	9	9
Mvmt Flow	0	0	0	183	7	0	0	0	0	0	0	48

Major/Minor	Major2			Minor2		
Conflicting Flow All	4	0	0	-	-	12
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.227	-	-	-	-	3.381
Pot Cap-1 Maneuver	1611	-	0	0	0	1049
Stage 1	-	-	0	0	0	-
Stage 2	-	-	0	0	0	-
Platoon blocked, %		-				
Mov Cap-1 Maneuver	1611	-	-	-	0	1049
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB	SB
HCM Control Delay, s	7.3	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBL	WBT	SBLn1
Capacity (veh/h)	1611	-	1049
HCM Lane V/C Ratio	0.114	-	0.046
HCM Control Delay (s)	7.5	0	8.6
HCM Lane LOS	A	A	A
HCM 95th %tile Q(veh)	0.4	-	0.1

Intersection						
Int Delay, s/veh	1.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	22	88	13	12	213
Future Vol, veh/h	20	22	88	13	12	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	5	3	3	1	1
Mvmt Flow	25	27	109	16	15	263

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	410	117	0	0	125	0
Stage 1	117	-	-	-	-	-
Stage 2	293	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.11	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.209	-
Pot Cap-1 Maneuver	592	927	-	-	1468	-
Stage 1	901	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	586	927	-	-	1468	-
Mov Cap-2 Maneuver	586	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	743	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	726	1468	-
HCM Lane V/C Ratio	-	-	0.071	0.01	-
HCM Control Delay (s)	-	-	10.3	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	215	46	43	246	17	35	18	24	28	60	10
Future Vol, veh/h	3	215	46	43	246	17	35	18	24	28	60	10
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	4	4	4	6	6	6	10	10	10	0	0	0
Mvmt Flow	4	256	55	51	293	20	42	21	29	33	71	12
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.2	12.9	10.1	10.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	45%	100%	0%	100%	0%	29%
Vol Thru, %	23%	0%	82%	0%	94%	61%
Vol Right, %	31%	0%	18%	0%	6%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	3	261	43	263	98
LT Vol	35	3	0	43	0	28
Through Vol	18	0	215	0	246	60
RT Vol	24	0	46	0	17	10
Lane Flow Rate	92	4	311	51	313	117
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.153	0.006	0.477	0.087	0.485	0.19
Departure Headway (Hd)	6	6.162	5.531	6.124	5.573	5.865
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	597	582	652	586	648	611
Service Time	4.043	3.89	3.259	3.85	3.299	3.906
HCM Lane V/C Ratio	0.154	0.007	0.477	0.087	0.483	0.191
HCM Control Delay	10.1	8.9	13.2	9.4	13.5	10.3
HCM Lane LOS	B	A	B	A	B	B
HCM 95th-tile Q	0.5	0	2.6	0.3	2.7	0.7

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	88	1	293	81	105	0	0	146	209
Future Vol, veh/h	0	0	0	88	1	293	81	105	0	0	146	209
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	3	3	3	5	5	5	4	4	4
Mvmt Flow	0	0	0	97	1	322	89	115	0	0	160	230

Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				453	453	115	160	0	-	-	-	0
Stage 1				293	293	-	-	-	-	-	-	-
Stage 2				160	160	-	-	-	-	-	-	-
Critical Hdwy				6.43	6.53	6.23	4.15	-	-	-	-	-
Critical Hdwy Stg 1				5.43	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.43	5.53	-	-	-	-	-	-	-
Follow-up Hdwy				3.527	4.027	3.327	2.245	-	-	-	-	-
Pot Cap-1 Maneuver				563	501	935	1401	-	0	0	-	-
Stage 1				755	668	-	-	-	0	0	-	-
Stage 2				866	764	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				525	0	935	1401	-	-	-	-	-
Mov Cap-2 Maneuver				525	0	-	-	-	-	-	-	-
Stage 1				704	0	-	-	-	-	-	-	-
Stage 2				866	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	3.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1401	-	525	935	-	-
HCM Lane V/C Ratio	0.064	-	0.186	0.344	-	-
HCM Control Delay (s)	7.7	0	13.4	10.9	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	1.5	-	-

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	0	26	0	0	0	0	125	110	189	124	0
Future Vol, veh/h	93	0	26	0	0	0	0	125	110	189	124	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	0	0	0	3	3	3	4	4	4
Mvmt Flow	107	0	30	0	0	0	0	144	126	217	143	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	784	847	143				-	0	0	270	0	0
Stage 1	577	577	-				-	-	-	-	-	-
Stage 2	207	270	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.236	-	-
Pot Cap-1 Maneuver	362	299	905				0	-	-	1282	-	0
Stage 1	562	502	-				0	-	-	-	-	0
Stage 2	828	686	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	295	0	905				-	-	-	1282	-	-
Mov Cap-2 Maneuver	295	0	-				-	-	-	-	-	-
Stage 1	562	0	-				-	-	-	-	-	-
Stage 2	676	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22	0	5.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	346	1282	-
HCM Lane V/C Ratio	-	-	0.395	0.169	-
HCM Control Delay (s)	-	-	22	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0.6	-

Intersection	
Int Delay, s/veh	37.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	457	114	194	555	0	0	0	0	154	0	156
Future Vol, veh/h	0	457	114	194	555	0	0	0	0	154	0	156
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	175	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	497	124	211	603	0	0	0	0	167	0	170

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	-	497	0	0	1274	1522	302
Stage 1	-	-	-	-	-	-	1025	1025	-
Stage 2	-	-	-	-	-	-	249	497	-
Critical Hdwy	-	-	-	4.14	-	-	6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	0	1063	-	0	~ 159	117	694
Stage 1	0	-	0	-	-	0	307	311	-
Stage 2	0	-	0	-	-	0	769	543	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	1063	-	-	~ 111	0	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 111	0	-
Stage 1	-	-	-	-	-	-	307	0	-
Stage 2	-	-	-	-	-	-	539	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3	174.4
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	1063	-	111	694
HCM Lane V/C Ratio	-	0.198	-	1.508	0.244
HCM Control Delay (s)	-	9.2	0.8	$ 339	11.9
HCM Lane LOS	-	A	A	F	B
HCM 95th %tile Q(veh)	-	0.7	-	12.2	1

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	338	0	0	396	136	401	1	194	0	0	0
Future Volume (veh/h)	198	338	0	0	396	136	401	1	194	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1535	1535	0	0	1547	1547	1522	1522	1522			
Adj Flow Rate, veh/h	204	348	0	0	408	0	413	1	200			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	6	6	0	0	5	5	7	7	7			
Cap, veh/h	0	909	0	0	917		581	1	518			
Arrive On Green	0.00	0.31	0.00	0.00	0.31	0.00	0.40	0.40	0.40			
Sat Flow, veh/h	0	2993	0	0	3094	0	1446	4	1290			
Grp Volume(v), veh/h	0	348	0	0	408	0	414	0	200			
Grp Sat Flow(s),veh/h/ln	0	1458	0	0	1470	0	1450	0	1290			
Q Serve(g_s), s	0.0	3.0	0.0	0.0	3.6	0.0	7.7	0.0	3.5			
Cycle Q Clear(g_c), s	0.0	3.0	0.0	0.0	3.6	0.0	7.7	0.0	3.5			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	909	0	0	917		582	0	518			
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.45		0.71	0.00	0.39			
Avail Cap(c_a), veh/h	0	5854	0	0	3648		1365	0	1215			
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	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	8.6	0.0	0.0	8.8	0.0	8.0	0.0	6.8			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	1.6	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	1.1	0.0	0.0	1.4	0.0	2.8	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.9	0.0	0.0	9.2	0.0	9.7	0.0	7.3			
LnGrp LOS	A	A	A	A	A		A	A	A			
Approach Vol, veh/h		348			408			614				
Approach Delay, s/veh		8.9			9.2			8.9				
Approach LOS		A			A			A				

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	0.0	14.6		17.5		14.6
Change Period (Y+Rc), s	4.6	4.6		4.6		4.6
Max Green Setting (Gmax), s	20.0	39.8		30.2		64.4
Max Q Clear Time (g_c+I1), s	0.0	5.6		9.7		5.0
Green Ext Time (p_c), s	0.0	2.8		3.3		2.5

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR] 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)	33	0	37	9	0	0	26	1040	14	5	1084	19
Future Volume (veh/h)	33	0	37	9	0	0	26	1040	14	5	1084	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		1.00	1.00		0.98	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	1447	1447	1447	1610	1610	1610	1560	1560	1560	1560	1560	1560
Adj Flow Rate, veh/h	38	0	43	10	0	0	30	1195	16	6	1246	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	13	13	13	0	0	0	4	4	4	4	4	4
Cap, veh/h	137	0	81	96	108	0	441	2513	34	395	2450	43
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.00	0.02	0.84	0.84	0.01	1.00	1.00
Sat Flow, veh/h	1271	0	1204	1368	1610	0	1485	2993	40	1485	2979	53
Grp Volume(v), veh/h	38	0	43	10	0	0	30	592	619	6	620	648
Grp Sat Flow(s),veh/h/ln	1271	0	1204	1368	1610	0	1485	1482	1551	1485	1482	1550
Q Serve(g_s), s	4.0	0.0	4.8	1.0	0.0	0.0	0.4	14.9	14.9	0.1	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	4.8	5.8	0.0	0.0	0.4	14.9	14.9	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.03	1.00		0.03
Lane Grp Cap(c), veh/h	137	0	81	96	108	0	441	1244	1302	395	1219	1275
V/C Ratio(X)	0.28	0.00	0.53	0.10	0.00	0.00	0.07	0.48	0.48	0.02	0.51	0.51
Avail Cap(c_a), veh/h	324	0	258	297	345	0	511	1244	1302	490	1219	1275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.81	0.81	0.81	0.91	0.91	0.91
Uniform Delay (d), s/veh	62.8	0.0	63.1	66.0	0.0	0.0	1.6	3.0	3.0	2.6	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	5.3	0.5	0.0	0.0	0.1	1.1	1.0	0.0	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	0.0	2.9	0.7	0.0	0.0	0.2	6.5	6.7	0.0	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	0.0	68.4	66.4	0.0	0.0	1.7	4.1	4.0	2.6	1.4	1.3
LnGrp LOS	E	A	E	E	A	A	A	A	A	A	A	A
Approach Vol, veh/h		81			10			1241			1274	
Approach Delay, s/veh		66.3			66.4			4.0			1.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	121.5		13.4	7.4	119.1		13.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	88.0		30.0	10.0	88.0		30.0
Max Q Clear Time (g_c+I1), s	2.1	16.9		6.8	2.4	2.0		7.8
Green Ext Time (p_c), s	0.0	11.6		0.3	0.0	12.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	613	419	14	807	8	796	121	67	123	206	47
Future Volume (veh/h)	19	613	419	14	807	8	796	121	67	123	206	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1510	1510	1510	1497	1497	1497	1484	1484	1484	1535	1535	1535
Adj Flow Rate, veh/h	21	689	0	16	907	9	894	136	75	138	231	53
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	10	10	10	6	6	6
Cap, veh/h	23	620		19	604	6	384	292	161	157	250	212
Arrive On Green	0.02	0.41	0.00	0.01	0.41	0.41	0.27	0.33	0.33	0.11	0.16	0.16
Sat Flow, veh/h	1438	1510	1279	1426	1480	15	1414	899	496	1462	1535	1301
Grp Volume(v), veh/h	21	689	0	16	0	916	894	0	211	138	231	53
Grp Sat Flow(s),veh/h/ln	1438	1510	1279	1426	0	1494	1414	0	1395	1462	1535	1301
Q Serve(g_s), s	2.1	58.8	0.0	1.6	0.0	58.4	38.9	0.0	17.2	13.3	21.2	5.1
Cycle Q Clear(g_c), s	2.1	58.8	0.0	1.6	0.0	58.4	38.9	0.0	17.2	13.3	21.2	5.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	23	620		19	0	610	384	0	454	157	250	212
V/C Ratio(X)	0.90	1.11		0.85	0.00	1.50	2.33	0.00	0.47	0.88	0.92	0.25
Avail Cap(c_a), veh/h	40	620		40	0	610	384	0	454	217	257	218
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	42.2	0.0	70.5	0.0	42.4	52.1	0.0	38.4	62.9	59.0	52.3
Incr Delay (d2), s/veh	60.3	70.4	0.0	50.6	0.0	234.6	605.2	0.0	0.6	23.7	35.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	46.1	0.0	1.5	0.0	92.6	124.5	0.0	9.9	10.0	16.1	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	130.6	112.5	0.0	121.1	0.0	277.0	657.4	0.0	39.0	86.6	94.5	52.7
LnGrp LOS	F	F		F	A	F	F	A	D	F	F	D
Approach Vol, veh/h		710			932			1105			422	
Approach Delay, s/veh		113.0			274.3			539.3			86.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	64.2	44.0	28.4	6.9	63.8	20.8	51.6
Change Period (Y+Rc), s	4.6	5.4	5.1	5.1	4.6	* 5.4	5.4	* 5.1
Max Green Setting (Gmax), s	4.0	57.9	38.9	24.0	4.0	* 58	21.3	* 42
Max Q Clear Time (g_c+I1), s	3.6	60.8	40.9	23.2	4.1	60.4	15.3	19.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	305.6
HCM 6th LOS	F

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)	161	10	70	39	11	84	200	712	109	340	478	74
Future Volume (veh/h)	161	10	70	39	11	84	200	712	109	340	478	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1020	1020	1020	1610	1610	1610	1547	1547	1547	1510	1510	1510
Adj Flow Rate, veh/h	169	11	74	41	12	0	211	749	115	358	503	78
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, %	47	47	47	0	0	0	5	5	5	8	8	8
Cap, veh/h	247	17	117	208	92		449	624	529	384	783	663
Arrive On Green	0.14	0.15	0.15	0.04	0.06	0.00	0.10	0.40	0.40	0.22	0.52	0.52
Sat Flow, veh/h	971	114	768	1533	1610	1364	1474	1547	1311	1438	1510	1279
Grp Volume(v), veh/h	169	0	85	41	12	0	211	749	115	358	503	78
Grp Sat Flow(s),veh/h/ln	971	0	882	1533	1610	1364	1474	1547	1311	1438	1510	1279
Q Serve(g_s), s	14.0	0.0	9.3	2.6	0.7	0.0	8.5	41.5	5.9	20.0	24.8	3.2
Cycle Q Clear(g_c), s	14.0	0.0	9.3	2.6	0.7	0.0	8.5	41.5	5.9	20.0	24.8	3.2
Prop In Lane	1.00		0.87	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	0	135	208	92		449	624	529	384	783	663
V/C Ratio(X)	0.68	0.00	0.63	0.20	0.13		0.47	1.20	0.22	0.93	0.64	0.12
Avail Cap(c_a), veh/h	247	0	231	236	297		501	624	529	440	788	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	40.8	43.1	46.1	0.0	15.7	30.7	20.1	30.0	17.9	12.7
Incr Delay (d2), s/veh	7.5	0.0	4.8	0.5	0.6	0.0	0.8	104.9	0.2	24.9	1.7	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(95%),veh/ln	8.3	0.0	4.0	1.8	0.6	0.0	5.2	48.2	3.3	10.9	13.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	45.6	43.5	46.7	0.0	16.5	135.6	20.3	54.9	19.6	12.8
LnGrp LOS	D	A	D	D	D		B	F	C	D	B	B
Approach Vol, veh/h		254			53			1075			939	
Approach Delay, s/veh		46.3			44.2			99.9			32.5	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	47.5	8.1	20.2	15.2	59.3	18.0	10.4
Change Period (Y+Rc), s	4.5	6.0	4.0	4.5	4.5	6.0	4.0	4.5
Max Green Setting (Gmax), s	26.5	41.5	6.0	27.0	14.3	53.7	14.0	19.0
Max Q Clear Time (g_c+I1), s	22.0	43.5	4.6	11.3	10.5	26.8	16.0	2.7
Green Ext Time (p_c), s	0.5	0.0	0.0	0.4	0.2	3.7	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		65.5
HCM 6th LOS		E

Notes

Unsignalized Delay for [WBR] 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)	2	137	26	6	82	13	24	6	7	14	20	13
Future Volume (veh/h)	2	137	26	6	82	13	24	6	7	14	20	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1522	1522	1522	1484	1484	1484	1472	1472	1472	1547	1547	1547
Adj Flow Rate, veh/h	3	180	34	8	108	17	32	8	9	18	26	17
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	7	7	7	10	10	10	11	11	11	5	5	5
Cap, veh/h	191	334	63	208	327	50	529	117	76	307	263	128
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	9	1237	231	42	1210	183	702	369	241	211	830	402
Grp Volume(v), veh/h	217	0	0	133	0	0	49	0	0	61	0	0
Grp Sat Flow(s),veh/h/ln	1477	0	0	1435	0	0	1311	0	0	1444	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	1.4	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.01		0.16	0.06		0.13	0.65		0.18	0.30		0.28
Lane Grp Cap(c), veh/h	588	0	0	585	0	0	723	0	0	698	0	0
V/C Ratio(X)	0.37	0.00	0.00	0.23	0.00	0.00	0.07	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	2547	0	0	2473	0	0	2376	0	0	2515	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.0	0.0	0.0	5.7	0.0	0.0	4.7	0.0	0.0	4.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	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(95%),veh/ln	0.7	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.0	0.0	5.9	0.0	0.0	4.7	0.0	0.0	4.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		217			133			49			61	
Approach Delay, s/veh		6.4			5.9			4.7			4.8	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		10.1		9.2		10.1		9.2
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		31.0		31.0		31.0		31.0
Max Q Clear Time (g_c+I1), s		2.5		4.4		2.6		3.4
Green Ext Time (p_c), s		0.2		1.4		0.3		0.8

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

MOVEMENT SUMMARY

Site: 328 [SR 3 & Ariport Rd (Site Folder: 2044 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SR 3															
8	T1	All MCs	773	8.0	773	8.0	0.903	14.4	LOS D	17.4	462.8	1.00	0.97	1.41	33.1
18	R2	All MCs	145	8.0	145	8.0	0.903	14.1	LOS D	17.4	462.8	1.00	0.97	1.41	26.8
Approach			918	8.0	918	8.0	0.903	14.4	LOS B	17.4	462.8	1.00	0.97	1.41	31.9
East: Ariport Rd															
1	L2	All MCs	73	7.0	73	7.0	0.335	9.5	LOS A	2.2	58.9	0.85	0.75	0.85	27.2
16	R2	All MCs	131	7.0	131	7.0	0.335	5.5	LOS A	2.2	58.9	0.85	0.75	0.85	27.5
Approach			204	7.0	204	7.0	0.335	6.9	LOS A	2.2	58.9	0.85	0.75	0.85	27.4
North: SR 3															
7	L2	All MCs	383	8.0	383	8.0	1.285	142.5	LOS F	158.7	4222.1	1.00	2.03	2.86	10.9
4	T1	All MCs	1236	8.0	1236	8.0	1.285	136.7	LOS F	158.7	4222.1	1.00	2.03	2.86	11.9
Approach			1619	8.0	1619	8.0	1.285	138.1	LOS F	158.7	4222.1	1.00	2.03	2.86	11.6
All Vehicles			2741	7.9	2741	7.9	1.285	86.9	LOS F	158.7	4222.1	0.99	1.58	2.23	15.6

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	542	481	511	626	0	99	0	291	922	298	12
Future Volume (veh/h)	0	542	481	511	626	0	99	0	291	922	298	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1560	1560	1560	1560	0	1535	0	1535	1560	1560	1560
Adj Flow Rate, veh/h	0	553	491	521	639	0	101	0	0	622	750	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	4	4	4	4	0	6	0	6	4	4	4
Cap, veh/h	0	872	386	555	1531	0	0	0		629	660	
Arrive On Green	0.00	0.29	0.29	0.26	0.69	0.00	0.00	0.00	0.00	0.42	0.42	0.00
Sat Flow, veh/h	0	3042	1311	2882	3042	0		0		1485	1560	1322
Grp Volume(v), veh/h	0	553	491	521	639	0		0.0		622	750	0
Grp Sat Flow(s),veh/h/ln	0	1482	1311	1441	1482	0				1485	1560	1322
Q Serve(g_s), s	0.0	24.3	44.1	26.6	14.2	0.0				62.3	63.5	0.0
Cycle Q Clear(g_c), s	0.0	24.3	44.1	26.6	14.2	0.0				62.3	63.5	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	872	386	555	1531	0				629	660	
V/C Ratio(X)	0.00	0.63	1.27	0.94	0.42	0.00				0.99	1.14	
Avail Cap(c_a), veh/h	0	872	386	567	1531	0				629	660	
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.65	0.65	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	45.9	52.9	54.9	13.6	0.0				42.9	43.3	0.0
Incr Delay (d2), s/veh	0.0	3.5	141.7	17.6	0.5	0.0				33.0	78.8	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
%ile BackOfQ(95%),veh/ln	0.0	14.4	44.1	14.9	6.9	0.0				36.8	53.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	49.4	194.6	72.6	14.1	0.0				75.9	122.1	0.0
LnGrp LOS	A	D	F	E	B	A				E	F	
Approach Vol, veh/h		1044			1160						1372	
Approach Delay, s/veh		117.7			40.4						101.2	
Approach LOS		F			D						F	

Timer - Assigned Phs	3	4	6	8
Phs Duration (G+Y+Rc), s	33.4	48.6	68.0	82.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	29.5	25.5	63.5	59.5
Max Q Clear Time (g_c+I1), s	28.6	46.1	65.5	16.2
Green Ext Time (p_c), s	0.3	0.0	0.0	5.9

Intersection Summary	
HCM 6th Ctrl Delay	86.3
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] 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)	84	1628	0	0	982	832	232	1	165	0	0	0
Future Volume (veh/h)	84	1628	0	0	982	832	232	1	165	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
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	1585	1585	0	0	1572	1572	1597	1597	1597			
Adj Flow Rate, veh/h	88	1696	0	0	1023	0	242	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	3	3	1	1	1			
Cap, veh/h	612	2389	0	0	1220		212	1				
Arrive On Green	0.70	1.00	0.00	0.00	0.13	0.00	0.14	0.14	0.00			
Sat Flow, veh/h	1509	3091	0	0	3066	1332	1515	6	1354			
Grp Volume(v), veh/h	88	1696	0	0	1023	0	243	0	0			
Grp Sat Flow(s),veh/h/ln	1509	1506	0	0	1494	1332	1522	0	1354			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	50.1	0.0	21.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	50.1	0.0	21.0	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	612	2389	0	0	1220		213	0				
V/C Ratio(X)	0.14	0.71	0.00	0.00	0.84		1.14	0.00				
Avail Cap(c_a), veh/h	612	2389	0	0	2012		213	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.58	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	12.8	0.0	0.0	0.0	60.1	0.0	64.5	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	4.2	0.0	104.7	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			
%ile BackOfQ(95%),veh/ln	1.4	0.1	0.0	0.0	26.6	0.0	21.7	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.2	0.0	0.0	64.2	0.0	169.2	0.0	0.0			
LnGrp LOS	B	A	A	A	E		F	A				
Approach Vol, veh/h		1784			1023			243				
Approach Delay, s/veh		0.8			64.2			169.2				
Approach LOS		A			E			F				

Timer - Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				124.0		26.0	57.7	66.3				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				119.0		21.0	13.0	101.0				
Max Q Clear Time (g_c+I1), s				2.0		23.0	2.0	52.1				
Green Ext Time (p_c), s				25.4		0.0	0.1	9.2				

Intersection Summary			
HCM 6th Ctrl Delay			35.5
HCM 6th LOS			D

Notes

Unsignalized Delay for [NBR, WBR] 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)	84	1560	150	6	1565	50	65	4	25	44	3	50
Future Volume (veh/h)	84	1560	150	6	1565	50	65	4	25	44	3	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.98		0.98	0.99		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	1585	1585	1585	1585	1585	1585	1547	1547	1547	1560	1560	1560
Adj Flow Rate, veh/h	88	1625	0	6	1630	52	68	4	26	46	3	52
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	4	4	4
Cap, veh/h	258	1757		375	2211	962	115	11	31	175	10	159
Arrive On Green	0.05	0.78	0.00	0.37	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1509	3011	1343	1509	3011	1310	604	87	250	1051	80	1296
Grp Volume(v), veh/h	88	1625	0	6	1630	52	98	0	0	49	0	52
Grp Sat Flow(s),veh/h/ln	1509	1506	1343	1509	1506	1310	941	0	0	1131	0	1296
Q Serve(g_s), s	4.1	64.2	0.0	0.0	0.0	0.0	10.1	0.0	0.0	0.0	0.0	5.5
Cycle Q Clear(g_c), s	4.1	64.2	0.0	0.0	0.0	0.0	16.2	0.0	0.0	6.1	0.0	5.5
Prop In Lane	1.00		1.00	1.00		1.00	0.69		0.27	0.94		1.00
Lane Grp Cap(c), veh/h	258	1757		375	2211	962	156	0	0	185	0	159
V/C Ratio(X)	0.34	0.92		0.02	0.74	0.05	0.63	0.00	0.00	0.26	0.00	0.33
Avail Cap(c_a), veh/h	298	2118		375	2211	962	196	0	0	227	0	199
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.00	0.57	0.57	0.57	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	14.2	0.0	26.4	0.0	0.0	66.9	0.0	0.0	60.4	0.0	60.2
Incr Delay (d2), s/veh	0.4	5.6	0.0	0.0	1.3	0.1	4.1	0.0	0.0	0.8	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	21.1	0.0	0.2	0.7	0.0	7.1	0.0	0.0	3.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	19.8	0.0	26.4	1.3	0.1	71.0	0.0	0.0	61.1	0.0	61.3
LnGrp LOS	B	B		C	A	A	E	A	A	E	A	E
Approach Vol, veh/h		1713			1688			98			101	
Approach Delay, s/veh		19.6			1.3			71.0			61.2	
Approach LOS		B			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		23.4	33.6	93.0		23.4	11.0	115.6
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5
Max Green Setting (Gmax), s		23.0	6.0	* 1.1E2		23.0	10.0	101.5
Max Q Clear Time (g_c+I1), s		18.2	2.0	66.2		8.1	6.1	2.0
Green Ext Time (p_c), s		0.2	0.0	21.3		0.3	0.1	30.7

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.

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)	1	1512	81	109	1653	0	121	0	92	2	0	0
Future Volume (veh/h)	1	1512	81	109	1653	0	121	0	92	2	0	0
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		1.00	0.99		0.99	0.99		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	1585	1585	1585	1585	1585	1585	1572	1572	1572	1610	1610	1610
Adj Flow Rate, veh/h	1	1559	84	112	1704	0	125	0	95	2	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	0	0	0
Cap, veh/h	428	2214	966	254	1675	0	201	0	214	76	0	0
Arrive On Green	0.31	0.98	0.98	0.12	1.00	0.00	0.10	0.00	0.10	0.10	0.00	0.00
Sat Flow, veh/h	1509	3011	1315	1509	3091	0	1470	0	1317	272	0	0
Grp Volume(v), veh/h	1	1559	84	112	1704	0	125	0	95	2	0	0
Grp Sat Flow(s),veh/h/ln	1509	1506	1315	1509	1506	0	1470	0	1317	272	0	0
Q Serve(g_s), s	0.0	5.6	0.2	5.7	83.4	0.0	0.0	0.0	9.8	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.6	0.2	5.7	83.4	0.0	12.3	0.0	9.8	12.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	428	2214	966	254	1675	0	201	0	214	76	0	0
V/C Ratio(X)	0.00	0.70	0.09	0.44	1.02	0.00	0.62	0.00	0.44	0.03	0.00	0.00
Avail Cap(c_a), veh/h	428	2214	966	277	2098	0	279	0	288	150	0	0
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.68	0.68	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.5	0.5	0.4	17.2	0.0	0.0	65.8	0.0	56.8	71.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.1	0.8	22.7	0.0	3.2	0.0	1.4	0.1	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(95%),veh/ln	0.0	1.7	0.2	3.4	8.5	0.0	8.5	0.0	6.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	1.8	0.6	18.1	22.7	0.0	68.9	0.0	58.3	72.0	0.0	0.0
LnGrp LOS	C	A	A	B	F	A	E	A	E	E	A	A
Approach Vol, veh/h		1644			1816			220			2	
Approach Delay, s/veh		1.7			22.4			64.3			72.0	
Approach LOS		A			C			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.6	32.6	96.9		20.6	13.2	116.3				
Change Period (Y+Rc), s		5.0	5.5	* 5.5		5.0	5.0	5.5				
Max Green Setting (Gmax), s		24.0	6.0	* 1E2		24.0	11.0	99.5				
Max Q Clear Time (g_c+I1), s		14.3	2.0	85.4		14.6	7.7	7.6				
Green Ext Time (p_c), s		0.7	0.0	13.9		0.0	0.1	27.9				
Intersection Summary												
HCM 6th Ctrl Delay			15.7									
HCM 6th LOS			B									
Notes												

* 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)	1596	63	91	1630	51	88
Future Volume (veh/h)	1596	63	91	1630	51	88
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1585	1610	1610
Adj Flow Rate, veh/h	1716	68	98	1753	55	95
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	2345	1018	314	2564	125	165
Arrive On Green	1.00	1.00	0.04	0.85	0.08	0.08
Sat Flow, veh/h	3091	1307	1509	3091	1533	1364
Grp Volume(v), veh/h	1716	68	98	1753	55	95
Grp Sat Flow(s),veh/h/ln	1506	1307	1509	1506	1533	1364
Q Serve(g_s), s	0.0	0.0	1.8	31.0	5.1	9.9
Cycle Q Clear(g_c), s	0.0	0.0	1.8	31.0	5.1	9.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2345	1018	314	2564	125	165
V/C Ratio(X)	0.73	0.07	0.31	0.68	0.44	0.57
Avail Cap(c_a), veh/h	2345	1018	366	2564	348	363
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.64	0.64	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	2.3	4.0	65.6	62.3
Incr Delay (d2), s/veh	1.2	0.1	0.4	1.0	2.4	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	0.8	10.2	3.8	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	1.2	0.1	2.7	4.9	68.0	65.4
LnGrp LOS	A	A	A	A	E	E
Approach Vol, veh/h	1784			1851	150	
Approach Delay, s/veh	1.2			4.8	66.3	
Approach LOS	A			A	E	

Timer - Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			10.9	121.8		17.3		132.7
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			11.0	90.0		34.0		106.0
Max Q Clear Time (g_c+I1), s			3.8	2.0		11.9		33.0
Green Ext Time (p_c), s			0.1	33.7		0.4		32.0

Intersection Summary			
HCM 6th Ctrl Delay			5.5
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1592	124	301	1600	2	73	1	290	5	4	2
Future Volume (veh/h)	1	1592	124	301	1600	2	73	1	290	5	4	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	0.99		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1610	1610	1610
Adj Flow Rate, veh/h	1	1676	0	317	1684	2	77	1	13	5	4	2
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, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	2	1683		371	2465	3	141	1	146	43	27	8
Arrive On Green	0.00	0.18	0.00	0.49	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1521	3035	1354	1509	3086	4	848	14	1335	76	246	72
Grp Volume(v), veh/h	1	1676	0	317	821	865	78	0	13	11	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1354	1509	1506	1584	862	0	1335	394	0	0
Q Serve(g_s), s	0.1	82.7	0.0	27.6	0.0	0.0	0.0	0.0	1.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	82.7	0.0	27.6	0.0	0.0	14.5	0.0	1.3	14.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.45		0.18
Lane Grp Cap(c), veh/h	2	1683		371	1203	1265	142	0	146	78	0	0
V/C Ratio(X)	0.40	1.00		0.85	0.68	0.68	0.55	0.00	0.09	0.14	0.00	0.00
Avail Cap(c_a), veh/h	76	1683		371	1203	1265	171	0	174	108	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.00	0.19	0.19	0.19	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.9	61.1	0.0	35.8	0.0	0.0	65.9	0.0	60.1	60.4	0.0	0.0
Incr Delay (d2), s/veh	51.4	15.7	0.0	3.9	0.6	0.6	3.3	0.0	0.3	0.8	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(95%),veh/ln	0.1	45.1	0.0	10.7	0.4	0.4	5.5	0.0	0.8	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	126.3	76.8	0.0	39.7	0.6	0.6	69.2	0.0	60.3	61.2	0.0	0.0
LnGrp LOS	F	E		D	A	A	E	A	E	E	A	A
Approach Vol, veh/h		1677			2003			91			11	
Approach Delay, s/veh		76.8			6.8			67.9			61.2	
Approach LOS		E			A			E			E	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	20.9	41.4	87.7		20.9	4.7	124.3
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	19.5	33.8	83.2		19.5	7.5	109.5
Max Q Clear Time (g_c+I1), s	16.5	29.6	84.7		16.6	2.1	2.0
Green Ext Time (p_c), s	0.1	0.4	0.0		0.0	0.0	22.5

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

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)	196	1594	68	33	1657	96	76	38	67	102	30	150
Future Volume (veh/h)	196	1594	68	33	1657	96	76	38	67	102	30	150
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		0.99	1.00		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	204	1660	71	34	1726	100	79	40	70	106	31	156
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	221	1568	680	184	1486	659	107	147	123	284	37	185
Arrive On Green	0.29	1.00	1.00	0.12	0.49	0.49	0.04	0.09	0.09	0.11	0.16	0.16
Sat Flow, veh/h	1521	3035	1317	1509	3011	1336	1533	1610	1346	1509	226	1137
Grp Volume(v), veh/h	204	1660	71	34	1726	100	79	40	70	106	0	187
Grp Sat Flow(s),veh/h/ln	1521	1518	1317	1509	1506	1336	1533	1610	1346	1509	0	1363
Q Serve(g_s), s	19.5	77.5	0.0	3.0	74.0	6.1	2.9	3.5	7.5	0.0	0.0	20.0
Cycle Q Clear(g_c), s	19.5	77.5	0.0	3.0	74.0	6.1	2.9	3.5	7.5	0.0	0.0	20.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	221	1568	680	184	1486	659	107	147	123	284	0	222
V/C Ratio(X)	0.92	1.06	0.10	0.18	1.16	0.15	0.74	0.27	0.57	0.37	0.00	0.84
Avail Cap(c_a), veh/h	221	1578	685	184	1486	659	130	360	301	284	0	286
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)	0.22	0.22	0.22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	0.0	59.2	38.0	20.8	69.8	63.5	65.4	56.7	0.0	60.9
Incr Delay (d2), s/veh	13.8	30.4	0.1	0.5	80.7	0.5	23.0	1.0	4.1	0.8	0.0	16.1
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(95%),veh/ln	9.4	9.0	0.0	2.1	60.1	3.7	6.6	2.7	4.9	6.7	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.2	30.4	0.1	59.6	118.7	21.3	92.8	64.5	69.5	57.5	0.0	77.0
LnGrp LOS	E	F	A	E	F	C	F	E	E	E	A	E
Approach Vol, veh/h		1935			1860			189			293	
Approach Delay, s/veh		33.0			112.4			78.2			70.0	
Approach LOS		C			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	20.2	24.5	82.7	11.8	30.9	28.3	79.0
Change Period (Y+Rc), s	6.0	6.5	6.5	* 5	6.0	6.5	6.5	5.0
Max Green Setting (Gmax), s	6.0	33.5	9.0	* 78	8.0	31.5	12.5	74.0
Max Q Clear Time (g_c+I1), s	12.0	9.5	5.0	79.5	4.9	22.0	21.5	76.0
Green Ext Time (p_c), s	0.1	0.4	0.0	0.0	0.1	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	72.1
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	45.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	1627	17	53	1621	17	66	0	110	9	0	111
Future Vol, veh/h	82	1627	17	53	1621	17	66	0	110	9	0	111
Conflicting Peds, #/hr	5	0	10	10	0	5	10	0	10	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	2	2	2
Mvmt Flow	85	1677	18	55	1671	18	68	0	113	9	0	114

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1694	0	0	1705	0	0	2813	3661	859	2814	3670	860
Stage 1	-	-	-	-	-	-	1857	1857	-	1795	1795	-
Stage 2	-	-	-	-	-	-	956	1804	-	1019	1875	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.54	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.52	4.02	3.32
Pot Cap-1 Maneuver	377	-	-	369	-	-	~ 9	5	304	~ 8	5	299
Stage 1	-	-	-	-	-	-	78	125	-	83	131	-
Stage 2	-	-	-	-	-	-	281	132	-	254	119	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	376	-	-	366	-	-	~ 4	3	299	~ 4	3	296
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 29	20	-	31	26	-
Stage 1	-	-	-	-	-	-	~ 60	96	-	64	111	-
Stage 2	-	-	-	-	-	-	145	112	-	121	91	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.5	$ 904.8	60.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	67	376	-	-	366	-	-	180
HCM Lane V/C Ratio	2.708	0.225	-	-	0.149	-	-	0.687
HCM Control Delay (s)	$ 904.8	17.3	-	-	16.6	-	-	60.2
HCM Lane LOS	F	C	-	-	C	-	-	F
HCM 95th %tile Q(veh)	18.1	0.8	-	-	0.5	-	-	4.1

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

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1115	0	659	49	0	1085
Future Volume (veh/h)	1115	0	659	49	0	1085
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	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	1585	1585	1610	1610	0	1610
Adj Flow Rate, veh/h	1161	0	686	51	0	1130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	0	0	0	0
Cap, veh/h	1604	1516	1074	80	0	0
Arrive On Green	0.55	0.00	0.74	0.74	0.00	0.00
Sat Flow, veh/h	2928	1585	2964	214	0	
Grp Volume(v), veh/h	1161	0	364	373	0.0	
Grp Sat Flow(s),veh/h/ln	1464	1585	1530	1569		
Q Serve(g_s), s	44.6	0.0	17.4	17.4		
Cycle Q Clear(g_c), s	44.6	0.0	17.4	17.4		
Prop In Lane	1.00			0.14		
Lane Grp Cap(c), veh/h	1604	1516	569	584		
V/C Ratio(X)	0.72	0.00	0.64	0.64		
Avail Cap(c_a), veh/h	1604	1516	569	584		
HCM Platoon Ratio	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	25.4	0.0	14.2	14.3		
Incr Delay (d2), s/veh	1.7	0.0	2.6	2.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	22.0	0.0	7.5	7.7		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.1	0.0	16.8	16.8		
LnGrp LOS	C	A	B	B		
Approach Vol, veh/h		1161	737			
Approach Delay, s/veh		27.1	16.8			
Approach LOS		C	B			

Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s	88.7	61.3				150.0
Change Period (Y+Rc), s	6.5	5.5				6.5
Max Green Setting (Gmax), s	44.5	49.5				113.5
Max Q Clear Time (g_c+I1), s	46.6	19.4				0.0
Green Ext Time (p_c), s	0.0	6.0				0.0

Intersection Summary		
HCM 6th Ctrl Delay		23.1
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	464	6	121	771	36	5	63	47	2	64	15
Future Volume (veh/h)	32	464	6	121	771	36	5	63	47	2	64	15
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		0.99	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	1597	1597	1597	1610	1610	1610	1585	1585	1585	1610	1610	1610
Adj Flow Rate, veh/h	34	499	6	130	829	39	5	68	51	2	69	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	0	0	0
Cap, veh/h	596	1230	15	818	1205	57	27	83	60	26	125	28
Arrive On Green	0.06	1.00	1.00	0.08	1.00	1.00	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1521	1575	19	1533	1523	72	24	840	604	11	1264	287
Grp Volume(v), veh/h	34	0	505	130	0	868	124	0	0	87	0	0
Grp Sat Flow(s),veh/h/ln	1521	0	1593	1533	0	1595	1468	0	0	1563	0	0
Q Serve(g_s), s	0.6	0.0	0.0	2.6	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	2.6	0.0	0.0	12.5	0.0	0.0	8.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.04		0.41	0.02		0.18
Lane Grp Cap(c), veh/h	596	0	1245	818	0	1261	170	0	0	179	0	0
V/C Ratio(X)	0.06	0.00	0.41	0.16	0.00	0.69	0.73	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	682	0	1245	982	0	1261	250	0	0	263	0	0
HCM Platoon Ratio	2.00	2.00	2.00	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	0.34	0.00	0.34	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.6	0.0	0.0	2.5	0.0	0.0	66.5	0.0	0.0	64.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.0	0.0	1.1	5.9	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(95%),veh/ln	0.3	0.0	0.6	1.2	0.0	0.7	8.7	0.0	0.0	6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.7	0.0	1.0	2.6	0.0	1.1	72.4	0.0	0.0	66.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	A	E	A	A
Approach Vol, veh/h		539			998			124			87	
Approach Delay, s/veh		1.1			1.3			72.4			66.5	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.8	10.0	121.2		18.8	8.5	122.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		23.0	22.0	93.0		23.0	13.0	102.0				
Max Q Clear Time (g_c+I1), s		14.5	4.6	2.0		10.0	2.6	2.0				
Green Ext Time (p_c), s		0.4	0.3	4.0		0.3	0.0	9.6				

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	436	57	161	762	58	165	201	39	43	113	32
Future Volume (veh/h)	23	436	57	161	762	58	165	201	39	43	113	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		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	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	24	464	61	171	811	62	176	214	41	46	120	34
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	486	863	114	684	958	73	212	233	45	119	174	49
Arrive On Green	0.05	1.00	1.00	0.11	1.00	1.00	0.07	0.18	0.18	0.03	0.15	0.15
Sat Flow, veh/h	1521	1382	182	1521	1462	112	1521	1296	248	1521	1187	336
Grp Volume(v), veh/h	24	0	525	171	0	873	176	0	255	46	0	154
Grp Sat Flow(s),veh/h/ln	1521	0	1564	1521	0	1574	1521	0	1544	1521	0	1523
Q Serve(g_s), s	0.8	0.0	0.0	6.3	0.0	0.0	10.0	0.0	24.3	3.8	0.0	14.4
Cycle Q Clear(g_c), s	0.8	0.0	0.0	6.3	0.0	0.0	10.0	0.0	24.3	3.8	0.0	14.4
Prop In Lane	1.00		0.12	1.00		0.07	1.00		0.16	1.00		0.22
Lane Grp Cap(c), veh/h	486	0	977	684	0	1031	212	0	278	119	0	223
V/C Ratio(X)	0.05	0.00	0.54	0.25	0.00	0.85	0.83	0.00	0.92	0.39	0.00	0.69
Avail Cap(c_a), veh/h	549	0	977	701	0	1031	212	0	340	220	0	386
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.00	0.90	0.47	0.00	0.47	0.35	0.00	0.35	0.79	0.00	0.79
Uniform Delay (d), s/veh	9.1	0.0	0.0	7.6	0.0	0.0	56.9	0.0	60.4	53.3	0.0	60.8
Incr Delay (d2), s/veh	0.0	0.0	1.9	0.1	0.0	4.3	8.8	0.0	11.2	0.6	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	0.9	3.3	0.0	2.2	4.9	0.0	13.6	2.7	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	1.9	7.6	0.0	4.3	65.8	0.0	71.6	53.9	0.0	63.0
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	E
Approach Vol, veh/h		549			1044			431			200	
Approach Delay, s/veh		2.2			4.8			69.2			60.9	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	31.0	12.3	97.7	14.0	26.0	7.8	102.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	33.0	10.0	76.0	10.0	38.0	10.0	76.0
Max Q Clear Time (g_c+I1), s	5.8	26.3	8.3	2.0	12.0	16.4	2.8	2.0
Green Ext Time (p_c), s	0.0	0.7	0.1	3.4	0.0	0.7	0.0	7.5

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
13: N Montgomery Ave & 6th St 07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	430	84	32	916	10	37	19	92	1	18	4
Future Volume (veh/h)	2	430	84	32	916	10	37	19	92	1	18	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.97		0.97	1.00		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	1597	1597	1597	1610	1610	1610	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	2	457	89	34	974	11	39	20	98	1	19	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	0	0	0	0	0	0
Cap, veh/h	311	986	192	758	1249	14	65	32	112	27	167	34
Arrive On Green	0.01	1.00	1.00	0.03	0.79	0.79	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1521	1298	253	1533	1588	18	268	249	859	14	1282	259
Grp Volume(v), veh/h	2	0	546	34	0	985	157	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	1521	0	1551	1533	0	1606	1377	0	0	1555	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	50.7	12.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.7	0.0	50.7	16.8	0.0	0.0	2.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.01	0.25		0.62	0.04		0.17
Lane Grp Cap(c), veh/h	311	0	1178	758	0	1264	209	0	0	227	0	0
V/C Ratio(X)	0.01	0.00	0.46	0.04	0.00	0.78	0.75	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	398	0	1178	813	0	1264	386	0	0	427	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)	0.79	0.00	0.79	0.40	0.00	0.40	0.87	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	3.0	0.0	8.8	64.0	0.0	0.0	57.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.0	0.0	2.0	3.5	0.0	0.0	0.1	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(95%),veh/ln	0.0	0.0	0.6	0.3	0.0	20.8	9.9	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	0.0	1.0	3.0	0.0	10.8	67.5	0.0	0.0	57.8	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	E	A	A	E	A	A
Approach Vol, veh/h		548			1019			157			24	
Approach Delay, s/veh		1.1			10.5			67.5			57.8	
Approach LOS		A			B			E			E	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		23.5	8.5	117.9		23.5	4.5	122.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		39.0	10.0	89.0		39.0	9.0	90.0
Max Q Clear Time (g_c+I1), s		18.8	2.7	2.0		4.0	2.0	52.7
Green Ext Time (p_c), s		0.8	0.0	3.6		0.1	0.0	8.8

Intersection Summary		
HCM 6th Ctrl Delay		13.3
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	285	73	217	676	122	207	204	144	14	55	18
Future Volume (veh/h)	108	285	73	217	676	122	207	204	144	14	55	18
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	0.91		0.94	1.00		0.85
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	120	317	81	241	751	136	230	227	160	16	61	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	179	555	142	474	795	667	405	239	168	85	80	26
Arrive On Green	0.06	0.45	0.45	0.10	0.50	0.50	0.22	0.28	0.28	0.02	0.07	0.07
Sat Flow, veh/h	1521	1224	313	1521	1597	1340	1533	854	602	1521	1098	360
Grp Volume(v), veh/h	120	0	398	241	751	136	230	0	387	16	0	81
Grp Sat Flow(s),veh/h/ln	1521	0	1537	1521	1597	1340	1533	0	1456	1521	0	1458
Q Serve(g_s), s	5.1	0.0	23.2	9.8	54.2	5.6	10.9	0.0	31.7	0.0	0.0	6.6
Cycle Q Clear(g_c), s	5.1	0.0	23.2	9.8	54.2	5.6	10.9	0.0	31.7	0.0	0.0	6.6
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.41	1.00		0.25
Lane Grp Cap(c), veh/h	179	0	696	474	795	667	405	0	407	85	0	107
V/C Ratio(X)	0.67	0.00	0.57	0.51	0.95	0.20	0.57	0.00	0.95	0.19	0.00	0.76
Avail Cap(c_a), veh/h	187	0	696	569	847	711	405	0	417	123	0	223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	24.5	16.7	29.0	11.5	39.4	0.0	42.9	58.7	0.0	55.3
Incr Delay (d2), s/veh	9.1	0.0	1.3	1.0	18.6	0.2	2.1	0.0	31.3	1.3	0.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	0.0	13.6	6.3	32.5	3.9	10.3	0.0	21.3	0.9	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	0.0	25.8	17.7	47.5	11.6	41.5	0.0	74.3	60.0	0.0	67.8
LnGrp LOS	D	A	C	B	D	B	D	A	E	E	A	E
Approach Vol, veh/h		518			1128			617			97	
Approach Delay, s/veh		28.3			36.8			62.0			66.5	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	38.5	16.9	59.6	31.7	13.4	11.5	65.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	34.8	19.9	52.2	21.3	18.6	7.6	64.5
Max Q Clear Time (g_c+I1), s	2.0	33.7	11.8	25.2	12.9	8.6	7.1	56.2
Green Ext Time (p_c), s	0.0	0.3	0.6	3.4	0.5	0.3	0.0	4.2

Intersection Summary	
HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	512	32	22	738	9	49	39	37	12	14	42
Future Volume (veh/h)	9	512	32	22	738	9	49	39	37	12	14	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.93		0.89	0.94		0.91
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	10	569	36	24	820	10	54	43	41	13	16	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	287	1040	855	481	1025	13	164	118	88	87	86	178
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	666	1597	1313	818	1574	19	416	544	405	113	395	824
Grp Volume(v), veh/h	10	569	36	24	0	830	138	0	0	76	0	0
Grp Sat Flow(s),veh/h/ln	666	1597	1313	818	0	1594	1365	0	0	1333	0	0
Q Serve(g_s), s	0.8	13.1	0.7	1.1	0.0	25.8	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	26.5	13.1	0.7	14.2	0.0	25.8	5.8	0.0	0.0	3.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.39		0.30	0.17		0.62
Lane Grp Cap(c), veh/h	287	1040	855	481	0	1038	369	0	0	350	0	0
V/C Ratio(X)	0.03	0.55	0.04	0.05	0.00	0.80	0.37	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	398	1305	1073	616	0	1302	483	0	0	462	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	1.00	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	18.3	6.4	4.2	10.3	0.0	8.6	23.1	0.0	0.0	22.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.6	0.1	0.2	0.0	5.5	2.3	0.0	0.0	1.1	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(95%),veh/ln	0.2	7.1	0.3	0.4	0.0	13.1	3.8	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	8.0	4.3	10.4	0.0	14.1	25.3	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	B	A	A	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h		615			854			138			76	
Approach Delay, s/veh		8.0			14.0			25.3			23.2	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.7		19.2		48.7		19.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		55.5		20.5		55.5		20.5
Max Q Clear Time (g_c+I1), s		28.5		5.2		27.8		7.8
Green Ext Time (p_c), s		10.6		0.7		16.5		1.3

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	245	16	185	456	100	167	553	14	87	432	117
Future Volume (veh/h)	280	245	16	185	456	100	167	553	14	87	432	117
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	1610	1610	1610	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	298	261	17	197	485	106	178	588	15	93	460	124
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	3	3	3
Cap, veh/h	320	557	36	486	516	427	274	944	24	304	644	172
Arrive On Green	0.15	0.37	0.37	0.10	0.32	0.32	0.19	0.63	0.63	0.02	0.09	0.09
Sat Flow, veh/h	1533	1494	97	1521	1597	1322	1509	3000	76	1497	2328	623
Grp Volume(v), veh/h	298	0	278	197	485	106	178	295	308	93	294	290
Grp Sat Flow(s),veh/h/ln	1533	0	1591	1521	1597	1322	1509	1506	1571	1497	1494	1458
Q Serve(g_s), s	16.4	0.0	15.9	10.2	35.4	7.1	10.1	14.3	14.4	5.3	22.9	23.2
Cycle Q Clear(g_c), s	16.4	0.0	15.9	10.2	35.4	7.1	10.1	14.3	14.4	5.3	22.9	23.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.05	1.00		0.43
Lane Grp Cap(c), veh/h	320	0	594	486	516	427	274	474	494	304	413	403
V/C Ratio(X)	0.93	0.00	0.47	0.41	0.94	0.25	0.65	0.62	0.62	0.31	0.71	0.72
Avail Cap(c_a), veh/h	333	0	594	568	552	457	274	474	494	306	413	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.86	0.00	0.86	0.27	0.27	0.27	0.96	0.96	0.96	0.69	0.69	0.69
Uniform Delay (d), s/veh	30.4	0.0	28.6	23.1	39.5	29.9	25.7	17.9	17.9	30.0	49.9	50.0
Incr Delay (d2), s/veh	28.7	0.0	0.6	0.1	8.9	0.1	5.5	5.8	5.6	0.5	7.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.0	0.0	10.0	5.4	18.5	3.6	6.3	7.7	7.9	3.7	14.3	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	0.0	29.2	23.2	48.4	30.0	31.2	23.7	23.5	30.4	56.9	57.4
LnGrp LOS	E	A	C	C	D	C	C	C	C	C	E	E
Approach Vol, veh/h		576			788			781			677	
Approach Delay, s/veh		44.6			39.6			25.3			53.5	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	42.3	17.0	49.3	16.0	37.7	23.0	43.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.1	33.9	19.0	42.0	11.5	29.5	19.5	41.5
Max Q Clear Time (g_c+I1), s	7.3	16.4	12.2	17.9	12.1	25.2	18.4	37.4
Green Ext Time (p_c), s	0.0	4.1	0.3	2.1	0.0	1.6	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	192	135	15	424	31	238	260	96	20	62	89
Future Volume (veh/h)	37	192	135	15	424	31	238	260	96	20	62	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	0.96		0.99	0.95		0.90	1.00		0.92
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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	47	243	171	19	537	39	301	329	122	25	78	92
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	114	495	512	64	604	43	311	265	97	108	279	292
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	125	1180	1221	21	1439	102	527	591	217	107	623	652
Grp Volume(v), veh/h	290	0	171	595	0	0	752	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1305	0	1221	1563	0	0	1335	0	0	1382	0	0
Q Serve(g_s), s	0.0	0.0	6.4	8.0	0.0	0.0	24.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.8	0.0	6.4	24.2	0.0	0.0	30.5	0.0	0.0	6.0	0.0	0.0
Prop In Lane	0.16		1.00	0.03		0.07	0.40		0.16	0.13		0.47
Lane Grp Cap(c), veh/h	609	0	512	710	0	0	673	0	0	679	0	0
V/C Ratio(X)	0.48	0.00	0.33	0.84	0.00	0.00	1.12	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	649	0	548	755	0	0	673	0	0	679	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.0	0.0	13.3	18.4	0.0	0.0	20.5	0.0	0.0	12.0	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.8	9.0	0.0	0.0	71.9	0.0	0.0	0.5	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(95%),veh/ln	5.7	0.0	3.2	14.8	0.0	0.0	34.6	0.0	0.0	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	14.1	27.4	0.0	0.0	92.3	0.0	0.0	12.5	0.0	0.0
LnGrp LOS	B	A	B	C	A	A	F	A	A	B	A	A
Approach Vol, veh/h		461			595			752			195	
Approach Delay, s/veh		14.8			27.4			92.3			12.5	
Approach LOS		B			C			F			B	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		33.0		35.0		33.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		30.5		30.5		30.5
Max Q Clear Time (g_c+I1), s		32.5		10.8		8.0		26.2
Green Ext Time (p_c), s		0.0		4.8		2.3		2.3

Intersection Summary			
HCM 6th Ctrl Delay			47.5
HCM 6th LOS			D

Intersection	
Intersection Delay, s/veh	19.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	78	218	62	51	307	28	58	93	75	23	58	54
Future Vol, veh/h	78	218	62	51	307	28	58	93	75	23	58	54
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	1	1	1	6	6	6
Mvmt Flow	92	256	73	60	361	33	68	109	88	27	68	64
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	18.5	25.4	14	15
HCM LOS	C	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	38%	0%	100%	0%	100%	0%	17%
Vol Thru, %	62%	0%	0%	78%	0%	92%	43%
Vol Right, %	0%	100%	0%	22%	0%	8%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	75	78	280	51	335	135
LT Vol	58	0	78	0	51	0	23
Through Vol	93	0	0	218	0	307	58
RT Vol	0	75	0	62	0	28	54
Lane Flow Rate	178	88	92	329	60	394	159
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.386	0.169	0.191	0.624	0.124	0.751	0.345
Departure Headway (Hd)	7.822	6.906	7.495	6.823	7.428	6.856	7.826
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	518	478	527	482	528	459
Service Time	5.583	4.666	5.251	4.579	5.182	4.61	5.895
HCM Lane V/C Ratio	0.387	0.17	0.192	0.624	0.124	0.746	0.346
HCM Control Delay	15.5	11.1	12	20.3	11.2	27.6	15
HCM Lane LOS	C	B	B	C	B	D	B
HCM 95th-tile Q	1.8	0.6	0.7	4.2	0.4	6.5	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	226	24	91	620	178	248
Future Volume (veh/h)	226	24	91	620	178	248
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	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	1597	1597	1547	1547	1585	1585
Adj Flow Rate, veh/h	254	27	102	697	200	279
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	5	5	2	2
Cap, veh/h	273	29	538	1119	381	531
Arrive On Green	0.20	0.20	0.05	0.72	0.64	0.64
Sat Flow, veh/h	1352	144	1474	1547	598	834
Grp Volume(v), veh/h	282	0	102	697	0	479
Grp Sat Flow(s),veh/h/ln	1501	0	1474	1547	0	1432
Q Serve(g_s), s	22.1	0.0	2.7	27.3	0.0	21.9
Cycle Q Clear(g_c), s	22.1	0.0	2.7	27.3	0.0	21.9
Prop In Lane	0.90	0.10	1.00			0.58
Lane Grp Cap(c), veh/h	303	0	538	1119	0	912
V/C Ratio(X)	0.93	0.00	0.19	0.62	0.00	0.53
Avail Cap(c_a), veh/h	319	0	657	1119	0	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.61	0.61	0.00	1.00
Uniform Delay (d), s/veh	47.0	0.0	8.4	8.4	0.0	11.9
Incr Delay (d2), s/veh	31.6	0.0	0.1	1.6	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.4	0.0	1.5	12.7	0.0	11.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	78.6	0.0	8.5	10.0	0.0	14.0
LnGrp LOS	E	A	A	A	A	B
Approach Vol, veh/h	282			799	479	
Approach Delay, s/veh	78.6			9.8	14.0	
Approach LOS	E			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.3		28.7	10.3	81.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		85.5		25.5	15.5	65.5
Max Q Clear Time (g_c+I1), s		29.3		24.1	4.7	23.9
Green Ext Time (p_c), s		5.0		0.1	0.2	3.3
Intersection Summary						
HCM 6th Ctrl Delay			23.5			
HCM 6th LOS			C			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	484	2	0	514	123	11	7	3	143	4	355
Future Volume (veh/h)	467	484	2	0	514	123	11	7	3	143	4	355
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		0.93	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	1585	1585	1585	0	1597	1597	1610	1610	1610	1560	1560	1560
Adj Flow Rate, veh/h	497	515	2	0	547	131	12	7	3	152	4	378
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	0	1	1	0	0	0	4	4	4
Cap, veh/h	469	532	2	0	466	384	21	13	5	278	7	682
Arrive On Green	0.32	0.32	0.32	0.00	0.29	0.29	0.03	0.03	0.03	0.19	0.19	0.19
Sat Flow, veh/h	1448	1642	6	0	1597	1317	825	481	206	1449	38	1322
Grp Volume(v), veh/h	519	0	495	0	547	131	22	0	0	156	0	378
Grp Sat Flow(s),veh/h/ln	1513	0	1583	0	1597	1317	1513	0	0	1487	0	1322
Q Serve(g_s), s	38.9	0.0	36.9	0.0	35.0	9.4	1.7	0.0	0.0	11.4	0.0	23.0
Cycle Q Clear(g_c), s	38.9	0.0	36.9	0.0	35.0	9.4	1.7	0.0	0.0	11.4	0.0	23.0
Prop In Lane	0.96		0.00	0.00		1.00	0.55		0.14	0.97		1.00
Lane Grp Cap(c), veh/h	490	0	513	0	466	384	39	0	0	285	0	682
V/C Ratio(X)	1.06	0.00	0.96	0.00	1.17	0.34	0.56	0.00	0.00	0.55	0.00	0.55
Avail Cap(c_a), veh/h	490	0	513	0	466	384	76	0	0	285	0	682
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	0.00	0.90	0.90	1.00	0.00	0.00	0.63	0.00	0.63
Uniform Delay (d), s/veh	40.6	0.0	39.9	0.0	42.5	33.4	57.8	0.0	0.0	43.8	0.0	19.6
Incr Delay (d2), s/veh	57.4	0.0	31.0	0.0	97.2	2.2	16.5	0.0	0.0	3.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	31.1	0.0	25.8	0.0	37.8	5.9	1.5	0.0	0.0	7.2	0.0	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.9	0.0	70.9	0.0	139.7	35.6	74.3	0.0	0.0	46.8	0.0	21.0
LnGrp LOS	F	A	E	A	F	D	E	A	A	D	A	C
Approach Vol, veh/h		1014			678			22			534	
Approach Delay, s/veh		84.7			119.6			74.3			28.5	
Approach LOS		F			F			E			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		8.1		43.9		28.0		40.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		6.0		36.0		23.0		35.0
Max Q Clear Time (g_c+I1), s		3.7		40.9		25.0		37.0
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		81.8
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	664	607	16	0	465	285	35	936	8	77	637	547
Future Volume (veh/h)	664	607	16	0	465	285	35	936	8	77	637	547
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		0.99
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	1585	1585	1585	0	1572	1572	1597	1597	1597	1560	1560	1560
Adj Flow Rate, veh/h	678	619	16	0	474	291	36	955	8	79	650	558
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	0	3	3	1	1	1	4	4	4
Cap, veh/h	598	743	19	0	415	253	164	981	8	142	995	710
Arrive On Green	0.34	0.81	0.81	0.00	0.23	0.23	0.07	0.64	0.64	0.11	0.67	0.67
Sat Flow, veh/h	2928	1538	40	0	1856	1086	1521	3084	26	1485	2964	1311
Grp Volume(v), veh/h	678	0	635	0	398	367	36	470	493	79	650	558
Grp Sat Flow(s),veh/h/ln	1464	0	1577	0	1494	1370	1521	1518	1593	1485	1482	1311
Q Serve(g_s), s	24.5	0.0	28.4	0.0	28.0	28.0	2.0	35.5	35.5	0.7	15.4	13.7
Cycle Q Clear(g_c), s	24.5	0.0	28.4	0.0	28.0	28.0	2.0	35.5	35.5	0.7	15.4	13.7
Prop In Lane	1.00		0.03	0.00		0.79	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	598	0	762	0	349	320	164	483	506	142	995	710
V/C Ratio(X)	1.13	0.00	0.83	0.00	1.14	1.15	0.22	0.97	0.97	0.56	0.65	0.79
Avail Cap(c_a), veh/h	598	0	776	0	349	320	187	487	511	142	995	710
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.52	0.52	0.63	0.63	0.63	0.34	0.34	0.34
Uniform Delay (d), s/veh	39.5	0.0	8.7	0.0	46.0	46.0	31.3	21.4	21.4	50.9	15.6	3.4
Incr Delay (d2), s/veh	79.6	0.0	7.6	0.0	80.8	84.6	0.5	26.7	25.9	1.9	1.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.0	0.0	9.5	0.0	25.0	23.7	1.4	15.8	16.4	3.6	5.4	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.2	0.0	16.4	0.0	126.8	130.6	31.8	48.0	47.3	52.7	16.8	6.4
LnGrp LOS	F	A	B	A	F	F	C	D	D	D	B	A
Approach Vol, veh/h		1313			765			999			1287	
Approach Delay, s/veh		69.5			128.6			47.1			14.5	
Approach LOS		E			F			D			B	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	43.7		64.5	9.7	45.8	31.0	33.5
Change Period (Y+Rc), s	5.5	5.5		* 6.5	5.5	5.5	6.5	5.5
Max Green Setting (Gmax), s	6.0	38.5		* 59	6.0	38.5	24.5	28.0
Max Q Clear Time (g_c+I1), s	2.7	37.5		30.4	4.0	17.4	26.5	30.0
Green Ext Time (p_c), s	0.1	0.7		4.8	0.0	8.5	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		58.5
HCM 6th LOS		E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	40	25	5	19	10	0	1891	3	0	1195	313
Future Volume (veh/h)	246	40	25	5	19	10	0	1891	3	0	1195	313
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.99	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	1585	1585	1585	1610	1610	1610	0	1597	1597	0	1560	1560
Adj Flow Rate, veh/h	256	42	26	5	20	10	0	1970	3	0	1245	326
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	0	0	0	1	1	0	4	4
Cap, veh/h	330	45	28	70	240	110	0	2095	3	0	1569	404
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.00	1.00	1.00	0.00	1.00	1.00
Sat Flow, veh/h	1099	180	112	141	955	439	0	3189	5	0	2407	599
Grp Volume(v), veh/h	324	0	0	35	0	0	0	961	1012	0	784	787
Grp Sat Flow(s),veh/h/ln	1391	0	0	1535	0	0	0	1518	1597	0	1482	1446
Q Serve(g_s), s	25.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.3	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.79		0.08	0.14		0.29	0.00		0.00	0.00		0.41
Lane Grp Cap(c), veh/h	403	0	0	420	0	0	0	1023	1076	0	999	974
V/C Ratio(X)	0.80	0.00	0.00	0.08	0.00	0.00	0.00	0.94	0.94	0.00	0.79	0.81
Avail Cap(c_a), veh/h	442	0	0	461	0	0	0	1023	1076	0	999	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.09	0.09	0.00	0.52	0.52
Uniform Delay (d), s/veh	43.8	0.0	0.0	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	10.0	0.0	0.0	0.1	0.0	0.0	0.0	2.3	2.2	0.0	3.3	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.9	0.0	0.0	1.5	0.0	0.0	0.0	1.0	1.1	0.0	1.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	0.0	0.0	34.5	0.0	0.0	0.0	2.3	2.2	0.0	3.3	3.9
LnGrp LOS	D	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		324			35			1973			1571	
Approach Delay, s/veh		53.7			34.5			2.2			3.6	
Approach LOS		D			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		85.4		34.6		85.4		34.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		77.5		33.5		77.5		33.5				
Max Q Clear Time (g_c+I1), s		2.0		29.3		2.0		4.1				
Green Ext Time (p_c), s		50.2		0.9		55.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	46	89	2101	1482	78
Future Volume (veh/h)	88	46	89	2101	1482	78
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	1547	1547	1585	1585	1547	1547
Adj Flow Rate, veh/h	69	71	92	2166	1528	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	2	2	5	5
Cap, veh/h	107	96	110	2566	2181	
Arrive On Green	0.07	0.07	0.15	1.00	0.74	0.00
Sat Flow, veh/h	1474	1311	1509	3091	3017	1311
Grp Volume(v), veh/h	69	71	92	2166	1528	0
Grp Sat Flow(s),veh/h/ln	1474	1311	1509	1506	1470	1311
Q Serve(g_s), s	5.5	6.4	7.1	0.0	33.5	0.0
Cycle Q Clear(g_c), s	5.5	6.4	7.1	0.0	33.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	107	96	110	2566	2181	
V/C Ratio(X)	0.64	0.74	0.84	0.84	0.70	
Avail Cap(c_a), veh/h	325	290	132	2566	2181	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.09	0.09	1.00	0.00
Uniform Delay (d), s/veh	54.1	54.5	50.6	0.0	8.3	0.0
Incr Delay (d2), s/veh	7.5	12.8	4.0	0.3	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	4.4	3.4	0.2	14.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	61.6	67.3	54.6	0.3	10.2	0.0
LnGrp LOS	E	E	D	A	B	
Approach Vol, veh/h	140			2258	1528	
Approach Delay, s/veh	64.5			2.6	10.2	
Approach LOS	E			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	13.2	13.2	93.5	106.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	10.5	69.5	84.5
Max Q Clear Time (g_c+I1), s	8.4	9.1	35.5	2.0
Green Ext Time (p_c), s	0.5	0.0	21.3	60.5

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] 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)	54	65	147	156	73	84	247	1785	155	238	1054	39
Future Volume (veh/h)	54	65	147	156	73	84	247	1785	155	238	1054	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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	1585	1585	1585	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	56	67	9	161	75	5	255	1840	108	245	1087	38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	143	122	102	155	123	103	566	1588	708	316	1211	42
Arrive On Green	0.04	0.08	0.08	0.04	0.08	0.08	0.33	0.53	0.53	0.21	0.41	0.41
Sat Flow, veh/h	1509	1585	1327	1521	1597	1338	1509	3011	1342	1497	2944	103
Grp Volume(v), veh/h	56	67	9	161	75	5	255	1840	108	245	551	574
Grp Sat Flow(s),veh/h/ln	1509	1585	1327	1521	1597	1338	1509	1506	1342	1497	1494	1553
Q Serve(g_s), s	5.5	6.5	0.6	6.5	7.3	0.4	12.7	84.4	5.0	24.7	55.1	55.2
Cycle Q Clear(g_c), s	5.5	6.5	0.6	6.5	7.3	0.4	12.7	84.4	5.0	24.7	55.1	55.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	143	122	102	155	123	103	566	1588	708	316	614	639
V/C Ratio(X)	0.39	0.55	0.09	1.04	0.61	0.05	0.45	1.16	0.15	0.78	0.90	0.90
Avail Cap(c_a), veh/h	143	308	258	155	311	260	566	1588	708	316	779	810
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	0.58	0.58	0.58
Uniform Delay (d), s/veh	65.3	71.2	22.1	72.9	71.5	32.9	38.2	37.8	11.3	59.5	44.0	44.0
Incr Delay (d2), s/veh	1.7	3.8	0.4	83.1	4.8	0.2	0.7	78.8	0.5	7.1	11.9	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	5.1	0.6	11.9	5.7	0.4	12.3	66.2	4.0	14.0	28.3	29.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.0	74.9	22.5	156.0	76.3	33.1	38.9	116.6	11.7	66.6	55.8	55.5
LnGrp LOS	E	E	C	F	E	C	D	F	B	E	E	E
Approach Vol, veh/h		132			241			2203			1370	
Approach Delay, s/veh		68.0			128.6			102.4			57.6	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.8	90.4	12.0	17.8	58.4	71.8	12.0	17.8
Change Period (Y+Rc), s	6.0	* 6	5.5	5.5	6.0	6.0	6.0	5.5
Max Green Setting (Gmax), s	16.0	* 84	6.5	31.1	16.0	83.4	6.0	31.1
Max Q Clear Time (g_c+I1), s	26.7	86.4	8.5	8.5	14.7	57.2	7.5	9.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.1	8.6	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	87.3
HCM 6th LOS	F

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	117	117	125	87	152	99	1542	150	163	1192	75
Future Volume (veh/h)	112	117	117	125	87	152	99	1542	150	163	1192	75
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		1.00	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	1585	1585	1585	1572	1572	1572	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	115	121	121	129	90	157	102	1590	155	168	1229	77
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	113	228	187	103	216	176	248	1827	811	297	1793	112
Arrive On Green	0.08	0.14	0.14	0.07	0.14	0.14	0.08	1.00	1.00	0.06	0.62	0.62
Sat Flow, veh/h	1509	1585	1301	1497	1572	1283	1509	3011	1336	1509	2875	180
Grp Volume(v), veh/h	115	121	121	129	90	157	102	1590	155	168	643	663
Grp Sat Flow(s),veh/h/ln	1509	1585	1301	1497	1572	1283	1509	1506	1336	1509	1506	1549
Q Serve(g_s), s	12.0	11.3	14.1	11.0	8.4	19.2	4.2	0.0	0.0	6.8	44.9	45.1
Cycle Q Clear(g_c), s	12.0	11.3	14.1	11.0	8.4	19.2	4.2	0.0	0.0	6.8	44.9	45.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	113	228	187	103	216	176	248	1827	811	297	939	966
V/C Ratio(X)	1.02	0.53	0.65	1.25	0.42	0.89	0.41	0.87	0.19	0.57	0.68	0.69
Avail Cap(c_a), veh/h	113	317	260	103	305	249	283	1827	811	354	939	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.21	0.21	0.21	0.71	0.71	0.71
Uniform Delay (d), s/veh	74.0	63.5	64.7	74.5	63.2	67.8	17.4	0.0	0.0	10.2	19.8	19.8
Incr Delay (d2), s/veh	88.9	1.9	3.7	171.4	1.3	23.8	0.2	1.4	0.1	1.2	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.1	8.3	8.5	15.2	6.3	12.1	2.2	0.6	0.0	4.3	21.9	22.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	162.9	65.5	68.4	245.9	64.4	91.6	17.6	1.4	0.1	11.4	22.7	22.7
LnGrp LOS	F	E	E	F	E	F	B	A	A	B	C	C
Approach Vol, veh/h		357			376			1847			1474	
Approach Delay, s/veh		97.9			138.1			2.2			21.4	
Approach LOS		F			F			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	102.1	16.0	28.0	11.3	104.8	17.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	82.0	11.0	32.0	10.0	87.0	12.0	31.0
Max Q Clear Time (g_c+I1), s	8.8	2.0	13.0	16.1	6.2	47.1	14.0	21.2
Green Ext Time (p_c), s	0.2	24.3	0.0	1.0	0.1	12.3	0.0	0.7

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	55	0	43	1	1697	42	57	1496	0
Future Volume (veh/h)	0	0	2	55	0	43	1	1697	42	57	1496	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	0.89		0.96	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	1610	1610	1610	1572	1572	1572	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	0	0	2	57	0	44	1	1749	43	59	1542	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	3	3	3	1	1	1	1	1	1
Cap, veh/h	0	0	93	139	0	97	317	2408	59	234	2515	0
Arrive On Green	0.00	0.00	0.08	0.08	0.00	0.08	0.00	0.80	0.80	0.05	1.00	0.00
Sat Flow, veh/h	0	0	1219	1256	0	1275	1521	3027	74	1521	3115	0
Grp Volume(v), veh/h	0	0	2	57	0	44	1	874	918	59	1542	0
Grp Sat Flow(s),veh/h/ln	0	0	1219	1256	0	1275	1521	1518	1584	1521	1518	0
Q Serve(g_s), s	0.0	0.0	0.2	7.0	0.0	5.3	0.0	44.5	45.1	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	7.3	0.0	5.3	0.0	44.5	45.1	1.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	93	139	0	97	317	1207	1260	234	2515	0
V/C Ratio(X)	0.00	0.00	0.02	0.41	0.00	0.45	0.00	0.72	0.73	0.25	0.61	0.00
Avail Cap(c_a), veh/h	0	0	190	239	0	199	390	1207	1260	267	2515	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.60	0.60	0.60	0.34	0.34	0.00
Uniform Delay (d), s/veh	0.0	0.0	68.4	71.8	0.0	70.7	3.3	7.9	8.0	10.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	2.8	0.0	4.7	0.0	2.3	2.3	0.3	0.4	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(95%),veh/ln	0.0	0.0	0.1	4.3	0.0	3.4	0.0	18.3	19.2	1.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	68.5	74.6	0.0	75.4	3.3	10.2	10.2	11.1	0.4	0.0
LnGrp LOS	A	A	E	E	A	E	A	B	B	B	A	A
Approach Vol, veh/h		2			101			1793			1601	
Approach Delay, s/veh		68.5			74.9			10.2			0.8	
Approach LOS		E			E			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	132.3		17.2	5.3	137.6		17.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	111.0		25.0	8.0	112.0		25.0				
Max Q Clear Time (g_c+I1), s	3.0	47.1		2.2	2.0	2.0		9.3				
Green Ext Time (p_c), s	0.1	38.3		0.0	0.0	35.8		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			7.8									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	98	157	171	117	166	144	1481	46	136	1267	175
Future Volume (veh/h)	152	98	157	171	117	166	144	1481	46	136	1267	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1597	1597	1597	1585	1585	1585	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	158	102	164	178	122	173	150	1543	48	142	1320	182
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	165	207	174	139	205	173	372	1831	57	150	1449	644
Arrive On Green	0.06	0.13	0.13	0.06	0.13	0.13	0.21	0.61	0.61	0.05	0.32	0.32
Sat Flow, veh/h	1521	1597	1344	1509	1585	1337	1509	2981	93	1521	3035	1350
Grp Volume(v), veh/h	158	102	164	178	122	173	150	778	813	142	1320	182
Grp Sat Flow(s),veh/h/ln	1521	1597	1344	1509	1585	1337	1509	1506	1568	1521	1518	1350
Q Serve(g_s), s	9.2	9.5	13.4	10.0	11.6	17.6	6.8	66.0	66.6	10.1	66.8	16.1
Cycle Q Clear(g_c), s	9.2	9.5	13.4	10.0	11.6	17.6	6.8	66.0	66.6	10.1	66.8	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	165	207	174	139	205	173	372	925	963	150	1449	644
V/C Ratio(X)	0.96	0.49	0.94	1.28	0.59	1.00	0.40	0.84	0.84	0.95	0.91	0.28
Avail Cap(c_a), veh/h	165	339	286	139	337	284	372	925	963	150	1574	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	0.56	0.56	0.56	0.79	0.79	0.79
Uniform Delay (d), s/veh	72.3	64.7	33.1	71.4	65.7	50.2	51.4	24.6	24.7	46.8	51.2	33.9
Incr Delay (d2), s/veh	51.2	1.1	21.6	168.8	2.0	39.8	0.4	5.4	5.3	50.6	8.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.3	7.0	9.1	13.8	8.5	12.5	7.9	30.4	31.7	12.2	35.8	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.5	65.9	54.7	240.2	67.7	90.0	51.8	30.0	30.0	97.4	59.5	34.8
LnGrp LOS	F	E	D	F	E	F	D	C	C	F	E	C
Approach Vol, veh/h		424			473			1741			1644	
Approach Delay, s/veh		83.0			140.8			31.9			60.0	
Approach LOS		F			F			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.9	81.4	15.0	25.7	16.0	103.3	15.0	25.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	33.0	83.0	10.0	34.0	11.0	85.0	10.0	34.0
Max Q Clear Time (g_c+I1), s	8.8	68.8	11.2	19.6	12.1	68.6	12.0	15.4
Green Ext Time (p_c), s	0.1	7.6	0.0	0.9	0.0	9.1	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1021	96	201	958	47	53	131	138	33	60	21
Future Volume (veh/h)	40	1021	96	201	958	47	53	131	138	33	60	21
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		0.97	1.00		0.96	0.97		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	42	1064	100	209	998	49	55	136	144	34	62	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	74	1598	149	334	2127	104	67	313	256	182	126	45
Arrive On Green	0.62	0.62	0.62	0.14	1.00	1.00	0.04	0.20	0.20	0.11	0.11	0.11
Sat Flow, veh/h	67	2568	239	1509	2917	143	1521	1597	1306	1070	1104	392
Grp Volume(v), veh/h	617	0	589	209	515	532	55	136	144	34	0	84
Grp Sat Flow(s),veh/h/ln	1466	0	1408	1509	1506	1554	1521	1597	1306	1070	0	1495
Q Serve(g_s), s	7.7	0.0	32.6	6.2	0.0	0.0	4.3	9.0	12.0	3.5	0.0	6.3
Cycle Q Clear(g_c), s	30.0	0.0	32.6	6.2	0.0	0.0	4.3	9.0	12.0	3.5	0.0	6.3
Prop In Lane	0.07		0.17	1.00		0.09	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	944	0	876	334	1098	1133	67	313	256	182	0	171
V/C Ratio(X)	0.65	0.00	0.67	0.63	0.47	0.47	0.82	0.43	0.56	0.19	0.00	0.49
Avail Cap(c_a), veh/h	944	0	876	361	1098	1133	133	552	452	296	0	330
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	0.50	0.50	0.50	0.56	0.56	0.56	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	14.7	13.3	0.0	0.0	56.9	42.4	43.6	48.6	0.0	49.9
Incr Delay (d2), s/veh	3.5	0.0	4.1	1.5	0.7	0.7	12.4	0.5	1.1	0.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.0	0.0	16.2	4.1	0.4	0.4	3.4	6.0	6.4	1.7	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	18.8	14.8	0.7	0.7	69.3	42.9	44.7	49.1	0.0	52.1
LnGrp LOS	B	A	B	B	A	A	E	D	D	D	A	D
Approach Vol, veh/h		1206			1256			335			118	
Approach Delay, s/veh		18.2			3.1			48.0			51.2	
Approach LOS		B			A			D			D	

Timer - Assigned Phs		2		4	5	6	7	8
Phs Duration (G+Y+Rc), s		28.0		92.0	9.8	18.2	12.8	79.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		41.5		69.5	10.5	26.5	10.5	54.5
Max Q Clear Time (g_c+I1), s		14.0		2.0	6.3	8.3	8.2	34.6
Green Ext Time (p_c), s		1.3		9.1	0.0	0.5	0.1	8.9

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
31: Naval Ave & 11th St

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1132	19	21	1004	18	303	76	87	12	41	22
Future Volume (veh/h)	25	1132	19	21	1004	18	303	76	87	12	41	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	0.99		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	1597	1597	1597	1585	1585	1585	1597	1597	1597	1597	1597	1597
Adj Flow Rate, veh/h	27	1230	21	23	1091	20	329	83	95	13	45	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	45	1586	27	40	1563	29	326	230	263	47	81	38
Arrive On Green	0.01	0.17	0.17	0.05	1.00	1.00	0.21	0.34	0.34	0.09	0.09	0.09
Sat Flow, veh/h	1521	3053	52	1509	3025	55	1521	673	770	133	905	429
Grp Volume(v), veh/h	27	611	640	23	543	568	329	0	178	82	0	0
Grp Sat Flow(s),veh/h/ln	1521	1518	1588	1509	1506	1575	1521	0	1443	1467	0	0
Q Serve(g_s), s	2.1	46.2	46.2	1.8	0.0	0.0	25.7	0.0	11.1	1.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	46.2	46.2	1.8	0.0	0.0	25.7	0.0	11.1	6.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.04	1.00		0.53	0.16		0.29
Lane Grp Cap(c), veh/h	45	788	825	40	778	814	326	0	492	166	0	0
V/C Ratio(X)	0.60	0.78	0.78	0.57	0.70	0.70	1.01	0.00	0.36	0.49	0.00	0.00
Avail Cap(c_a), veh/h	77	788	825	77	778	814	326	0	628	301	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.39	0.78	0.78	0.78	0.64	0.00	0.64	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.7	43.0	43.0	56.1	0.0	0.0	47.2	0.0	29.7	52.6	0.0	0.0
Incr Delay (d2), s/veh	4.9	3.0	2.9	9.5	4.1	3.9	42.3	0.0	0.3	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(95%),veh/ln	1.6	24.0	25.0	1.4	1.6	1.6	18.5	0.0	6.6	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	46.0	45.9	65.6	4.1	3.9	89.5	0.0	30.0	54.9	0.0	0.0
LnGrp LOS	E	D	D	E	A	A	F	A	C	D	A	A
Approach Vol, veh/h		1278			1134			507			82	
Approach Delay, s/veh		46.3			5.2			68.6			54.9	
Approach LOS		D			A			E			D	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	66.8	30.2	15.2	8.1	66.5		45.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.1	48.2	25.7	22.0	6.1	48.2		52.2				
Max Q Clear Time (g_c+I1), s	3.8	48.2	27.7	8.4	4.1	2.0		13.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	9.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay			34.8									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary
32: High Ave & 11th St

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1200	10	19	1113	15	21	23	14	37	11	56
Future Volume (veh/h)	34	1200	10	19	1113	15	21	23	14	37	11	56
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		0.97	1.00		0.94	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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	37	1304	11	21	1210	16	23	25	15	40	12	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	264	1997	17	364	1939	26	41	98	59	56	26	130
Arrive On Green	0.07	1.00	1.00	0.02	0.43	0.43	0.03	0.11	0.11	0.04	0.12	0.12
Sat Flow, veh/h	1521	3084	26	1509	3042	40	1533	920	552	1509	219	1113
Grp Volume(v), veh/h	37	642	673	21	599	627	23	0	40	40	0	73
Grp Sat Flow(s),veh/h/ln	1521	1518	1593	1509	1506	1576	1533	0	1471	1509	0	1332
Q Serve(g_s), s	1.0	0.0	0.0	0.6	37.3	37.3	1.8	0.0	3.0	3.1	0.0	6.1
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.6	37.3	37.3	1.8	0.0	3.0	3.1	0.0	6.1
Prop In Lane	1.00		0.02	1.00		0.03	1.00		0.38	1.00		0.84
Lane Grp Cap(c), veh/h	264	983	1031	364	960	1005	41	0	157	56	0	156
V/C Ratio(X)	0.14	0.65	0.65	0.06	0.62	0.62	0.56	0.00	0.25	0.72	0.00	0.47
Avail Cap(c_a), veh/h	317	983	1031	433	960	1005	96	0	337	94	0	305
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	7.0	23.1	23.1	57.7	0.0	49.2	57.2	0.0	49.5
Incr Delay (d2), s/veh	0.1	1.7	1.6	0.1	3.1	2.9	11.4	0.0	0.8	16.0	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.8	0.8	0.3	21.2	22.0	1.5	0.0	2.1	2.6	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	1.7	1.6	7.1	26.2	26.1	69.1	0.0	50.0	73.1	0.0	51.7
LnGrp LOS	B	A	A	A	C	C	E	A	D	E	A	D
Approach Vol, veh/h		1352			1247			63			113	
Approach Delay, s/veh		1.9			25.8			57.0			59.3	
Approach LOS		A			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	18.3	8.5	83.2	8.7	19.5	9.8	82.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	7.5	27.5	8.5	54.5	7.5	27.5	8.5	54.5				
Max Q Clear Time (g_c+I1), s	5.1	5.0	2.6	2.0	3.8	8.1	3.0	39.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	13.0	0.0	0.3	0.0	7.4				
Intersection Summary												
HCM 6th Ctrl Delay			16.2									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	469	99	6	506	23	165	98	29	8	44	34
Future Volume (veh/h)	19	469	99	6	506	23	165	98	29	8	44	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.95	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	1572	1572	1572	1560	1560	1560	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	21	521	110	7	562	26	183	109	32	9	49	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	2	2	2
Cap, veh/h	44	727	591	16	656	30	200	80	412	64	220	413
Arrive On Green	0.03	0.46	0.46	0.01	0.44	0.44	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1497	1572	1279	1485	1477	68	344	252	1298	0	692	1300
Grp Volume(v), veh/h	21	521	110	7	0	588	292	0	32	58	0	38
Grp Sat Flow(s),veh/h/ln	1497	1572	1279	1485	0	1545	596	0	1298	692	0	1300
Q Serve(g_s), s	0.9	17.2	3.3	0.3	0.0	22.0	0.0	0.0	1.1	0.0	0.0	1.3
Cycle Q Clear(g_c), s	0.9	17.2	3.3	0.3	0.0	22.0	20.5	0.0	1.1	20.5	0.0	1.3
Prop In Lane	1.00		1.00	1.00		0.04	0.63		1.00	0.16		1.00
Lane Grp Cap(c), veh/h	44	727	591	16	0	686	280	0	412	284	0	413
V/C Ratio(X)	0.48	0.72	0.19	0.43	0.00	0.86	1.04	0.00	0.08	0.20	0.00	0.09
Avail Cap(c_a), veh/h	476	1596	1299	472	0	1569	280	0	412	284	0	413
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	14.0	10.2	31.7	0.0	16.1	25.0	0.0	15.4	16.6	0.0	15.5
Incr Delay (d2), s/veh	8.0	1.3	0.2	16.9	0.0	3.2	65.1	0.0	0.1	0.3	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(95%),veh/ln	0.7	9.4	1.5	0.3	0.0	11.8	14.7	0.0	0.6	1.1	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	15.3	10.4	48.6	0.0	19.3	90.1	0.0	15.5	17.0	0.0	15.6
LnGrp LOS	D	B	B	D	A	B	F	A	B	B	A	B
Approach Vol, veh/h		652			595			324			96	
Approach Delay, s/veh		15.2			19.7			82.7			16.4	
Approach LOS		B			B			F			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	25.0	5.2	34.3	25.0	6.4	33.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	20.5	65.5	20.5	20.5	65.5
Max Q Clear Time (g_c+I1), s	22.5	2.3	19.2	22.5	2.9	24.0
Green Ext Time (p_c), s	0.0	0.0	4.3	0.0	0.0	4.6

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

MOVEMENT SUMMARY

Site: 34 [Washington Ave & Manette Bridge (Site Folder: 2044 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Washington Ave (NB)															
8	T1	All MCs	326	4.0	326	4.0	1.013	32.7	LOS F	31.2	805.4	1.00	1.99	2.57	18.2
18	R2	All MCs	586	4.0	586	4.0	1.013	33.1	LOS F	31.2	805.4	1.00	1.99	2.57	19.1
Approach			912	4.0	912	4.0	1.013	32.9	LOS C	31.2	805.4	1.00	1.99	2.57	18.8
East: Manette Bridge (WB)															
1	L2	All MCs	435	3.0	435	3.0	0.606	9.1	LOS A	4.9	125.1	0.68	0.69	0.73	24.5
16	R2	All MCs	179	3.0	179	3.0	0.606	5.8	LOS A	4.9	125.1	0.68	0.69	0.73	24.6
Approach			614	3.0	614	3.0	0.606	8.1	LOS A	4.9	125.1	0.68	0.69	0.73	24.5
North: Washington Ave (SB)															
7	L2	All MCs	444	2.0	444	2.0	0.512	8.7	LOS A	3.8	95.3	0.71	0.71	0.75	24.2
4	T1	All MCs	28	2.0	28	2.0	0.512	5.1	LOS A	3.8	95.3	0.71	0.71	0.75	22.8
Approach			471	2.0	471	2.0	0.512	8.5	LOS A	3.8	95.3	0.71	0.71	0.75	24.1
All Vehicles			1997	3.2	1997	3.2	1.013	19.5	LOS B	31.2	805.4	0.83	1.29	1.58	21.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	21	9	1023	4	47	2	345	931	24	304	0
Future Volume (veh/h)	20	21	9	1023	4	47	2	345	931	24	304	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.96	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	1610	1610	1610	1597	1597	1597	1585	1585	1585	1585	1585	1585
Adj Flow Rate, veh/h	20	21	9	1092	0	0	2	352	950	24	310	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	1	1	1	2	2	2	2	2	2
Cap, veh/h	132	138	59	1105	580	0	39	441	1490	56	614	0
Arrive On Green	0.22	0.22	0.22	0.36	0.00	0.00	0.28	0.28	0.28	0.28	0.28	0.00
Sat Flow, veh/h	611	642	275	3043	1597	0	2	1583	2265	44	2273	0
Grp Volume(v), veh/h	50	0	0	1092	0	0	354	0	950	157	177	0
Grp Sat Flow(s),veh/h/ln	1528	0	0	1521	1597	0	1584	0	1132	875	1370	0
Q Serve(g_s), s	2.5	0.0	0.0	33.9	0.0	0.0	0.0	0.0	24.6	1.6	10.2	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	33.9	0.0	0.0	19.7	0.0	24.6	21.3	10.2	0.0
Prop In Lane	0.40		0.18	1.00		0.00	0.01		1.00	0.15		0.00
Lane Grp Cap(c), veh/h	330	0	0	1105	580	0	480	0	1490	288	382	0
V/C Ratio(X)	0.15	0.00	0.00	0.99	0.00	0.00	0.74	0.00	0.64	0.54	0.46	0.00
Avail Cap(c_a), veh/h	330	0	0	1105	580	0	480	0	1490	288	382	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	0.00	0.65	0.00	0.00	1.00	0.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	30.2	0.0	0.0	30.0	0.0	0.0	31.8	0.0	10.5	28.0	28.4	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	19.2	0.0	0.0	6.4	0.0	1.1	2.4	1.1	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(95%),veh/ln	1.7	0.0	0.0	20.1	0.0	0.0	12.9	0.0	16.9	5.5	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	0.0	0.0	49.3	0.0	0.0	38.2	0.0	11.5	30.4	29.5	0.0
LnGrp LOS	C	A	A	D	A	A	D	A	B	C	C	A
Approach Vol, veh/h		50			1092			1304			334	
Approach Delay, s/veh		30.4			49.3			18.8			29.9	
Approach LOS		C			D			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		25.0		31.0		39.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		26.5		20.5		26.5		34.5				
Max Q Clear Time (g_c+I1), s		26.6		4.5		23.3		35.9				
Green Ext Time (p_c), s		0.0		0.2		0.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			32.3
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	880	6	6	1299	11	6	69	56	71	6	52
Future Volume (veh/h)	57	880	6	6	1299	11	6	69	56	71	6	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		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	1585	1585	1585	1597	1597	1597	1610	1610	1610	1610	1610	1610
Adj Flow Rate, veh/h	61	946	6	6	1397	12	6	74	60	76	6	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	0	0	0
Cap, veh/h	124	1823	12	43	2265	19	45	123	95	149	23	75
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	105	2425	16	3	3013	26	25	830	641	589	155	508
Grp Volume(v), veh/h	465	0	548	741	0	674	140	0	0	138	0	0
Grp Sat Flow(s),veh/h/ln	1107	0	1439	1592	0	1449	1496	0	0	1252	0	0
Q Serve(g_s), s	4.5	0.0	13.7	0.0	0.0	19.4	0.0	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	23.9	0.0	13.7	19.3	0.0	19.4	8.0	0.0	0.0	9.7	0.0	0.0
Prop In Lane	0.13		0.01	0.01		0.02	0.04		0.43	0.55		0.41
Lane Grp Cap(c), veh/h	877	0	1082	1238	0	1089	263	0	0	247	0	0
V/C Ratio(X)	0.53	0.00	0.51	0.60	0.00	0.62	0.53	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	877	0	1082	1238	0	1089	692	0	0	629	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)	0.85	0.00	0.85	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.3	0.0	4.5	5.2	0.0	5.2	36.0	0.0	0.0	36.7	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	1.4	2.1	0.0	2.6	2.0	0.0	0.0	2.4	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(95%),veh/ln	5.1	0.0	6.4	9.5	0.0	9.0	5.4	0.0	0.0	5.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	0.0	5.9	7.3	0.0	7.8	38.1	0.0	0.0	39.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	A
Approach Vol, veh/h		1013			1415			140			138	
Approach Delay, s/veh		6.1			7.6			38.1			39.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.8		72.2		17.8		72.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		39.5		41.5		39.5		41.5
Max Q Clear Time (g_c+I1), s		10.0		25.9		11.7		21.4
Green Ext Time (p_c), s		1.0		10.4		1.0		15.7

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	839	6	25	921	23	266	365	137	46	61	151
Future Volume (veh/h)	161	839	6	25	921	23	266	365	137	46	61	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	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	1597	1597	1597	1597	1597	1597	1610	1610	1610	1597	1597	1597
Adj Flow Rate, veh/h	177	922	7	27	1012	25	292	401	151	51	67	166
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	200	1392	11	46	1058	26	314	516	424	64	252	210
Arrive On Green	0.13	0.45	0.45	0.03	0.35	0.35	0.20	0.32	0.32	0.04	0.16	0.16
Sat Flow, veh/h	1521	3087	23	1521	3027	75	1533	1610	1322	1521	1597	1331
Grp Volume(v), veh/h	177	453	476	27	507	530	292	401	151	51	67	166
Grp Sat Flow(s),veh/h/ln	1521	1518	1593	1521	1518	1584	1533	1610	1322	1521	1597	1331
Q Serve(g_s), s	13.2	26.9	26.9	2.0	37.6	37.6	21.5	25.9	10.1	3.8	4.2	13.8
Cycle Q Clear(g_c), s	13.2	26.9	26.9	2.0	37.6	37.6	21.5	25.9	10.1	3.8	4.2	13.8
Prop In Lane	1.00		0.01	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	684	718	46	531	554	314	516	424	64	252	210
V/C Ratio(X)	0.89	0.66	0.66	0.59	0.96	0.96	0.93	0.78	0.36	0.80	0.27	0.79
Avail Cap(c_a), veh/h	200	684	718	81	534	558	320	547	449	97	311	259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	24.7	24.7	55.1	36.5	36.5	44.9	35.4	30.0	54.6	42.6	46.6
Incr Delay (d2), s/veh	34.8	2.5	2.4	13.6	28.2	27.4	32.5	6.9	0.6	26.3	0.7	13.4
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(95%),veh/ln	11.3	15.3	15.9	1.7	24.9	25.7	16.5	16.6	6.0	3.5	3.1	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.0	27.3	27.2	68.7	64.7	64.0	77.4	42.2	30.6	81.0	43.3	60.0
LnGrp LOS	F	C	C	E	E	E	E	D	C	F	D	E
Approach Vol, veh/h		1106			1064			844			284	
Approach Delay, s/veh		36.3			64.5			52.3			59.8	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	41.4	8.0	56.4	28.1	22.6	19.6	44.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.3	39.1	6.1	49.5	24.0	22.4	15.1	40.5
Max Q Clear Time (g_c+I1), s	15.8	27.9	4.0	28.9	23.5	15.8	15.2	39.6
Green Ext Time (p_c), s	0.0	2.9	0.0	7.6	0.1	0.6	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	51.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1019	16	10	822	8	125	16	15	0	20	6
Future Volume (veh/h)	76	1019	16	10	822	8	125	16	15	0	20	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.72		0.79	1.00		0.67
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	1585	1585	1585	1572	1572	1572	1585	1585	1585	1560	1560	1560
Adj Flow Rate, veh/h	81	1084	17	11	874	9	133	17	16	0	21	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	4	4	4
Cap, veh/h	139	1774	28	28	1162	12	180	19	17	0	193	55
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.19	0.19	0.19	0.00	0.19	0.19
Sat Flow, veh/h	150	2333	36	8	1528	16	760	101	92	0	1039	297
Grp Volume(v), veh/h	513	0	669	894	0	0	166	0	0	0	0	27
Grp Sat Flow(s),veh/h/ln	1084	0	1436	1552	0	0	953	0	0	0	0	1335
Q Serve(g_s), s	6.0	0.0	34.7	0.0	0.0	0.0	25.9	0.0	0.0	0.0	0.0	2.8
Cycle Q Clear(g_c), s	58.7	0.0	34.7	52.7	0.0	0.0	28.7	0.0	0.0	0.0	0.0	2.8
Prop In Lane	0.16		0.03	0.01		0.01	0.80		0.10	0.00		0.22
Lane Grp Cap(c), veh/h	849	0	1091	1202	0	0	216	0	0	0	0	248
V/C Ratio(X)	0.60	0.00	0.61	0.74	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.11
Avail Cap(c_a), veh/h	849	0	1091	1202	0	0	220	0	0	0	0	253
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)	0.75	0.00	0.75	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	0.0	8.9	11.1	0.0	0.0	68.1	0.0	0.0	0.0	0.0	56.2
Incr Delay (d2), s/veh	2.4	0.0	1.9	4.2	0.0	0.0	13.4	0.0	0.0	0.0	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(95%),veh/ln	16.8	0.0	15.8	25.9	0.0	0.0	12.4	0.0	0.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	0.0	10.9	15.3	0.0	0.0	81.5	0.0	0.0	0.0	0.0	56.3
LnGrp LOS	B	A	B	B	A	A	F	A	A	A	A	E
Approach Vol, veh/h		1182			894			166			27	
Approach Delay, s/veh		11.6			15.3			81.5			56.3	
Approach LOS		B			B			F			E	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		130.7		35.3		130.7		35.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		125.5		31.5		125.5		31.5
Max Q Clear Time (g_c+I1), s		60.7		4.8		54.7		30.7
Green Ext Time (p_c), s		20.3		0.1		16.0		0.1

Intersection Summary			
HCM 6th Ctrl Delay			18.7
HCM 6th LOS			B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	575	497	59	15	132
Future Volume (veh/h)	68	575	497	59	15	132
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1572	1572	1597	1597	1610	1610
Adj Flow Rate, veh/h	92	777	672	80	20	178
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	1	1	0	0
Cap, veh/h	232	1290	1376	164	26	233
Arrive On Green	0.50	0.50	0.50	0.50	0.19	0.19
Sat Flow, veh/h	168	2628	2807	324	138	1225
Grp Volume(v), veh/h	445	424	374	378	199	0
Grp Sat Flow(s),veh/h/ln	1365	1359	1518	1534	1370	0
Q Serve(g_s), s	0.7	6.6	4.8	4.8	4.1	0.0
Cycle Q Clear(g_c), s	6.0	6.6	4.8	4.8	4.1	0.0
Prop In Lane	0.21			0.21	0.10	0.89
Lane Grp Cap(c), veh/h	836	686	766	774	261	0
V/C Ratio(X)	0.53	0.62	0.49	0.49	0.76	0.00
Avail Cap(c_a), veh/h	2136	2098	2342	2367	1185	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.1	5.3	4.8	4.8	11.3	0.0
Incr Delay (d2), s/veh	0.4	0.7	0.4	0.4	3.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	1.8	1.4	1.4	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.4	5.9	5.2	5.2	14.8	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		869	752		199	
Approach Delay, s/veh		5.7	5.2		14.8	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		19.4		10.1		19.4
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		45.5		25.5		45.5
Max Q Clear Time (g_c+I1), s		8.6		6.1		6.8
Green Ext Time (p_c), s		6.3		0.5		4.7

Intersection Summary						
HCM 6th Ctrl Delay			6.5			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
42: Pacific Ave & Burwell St (SR 304)

07/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	291	242	132	283	67	0	0	0	53	106	41
Future Volume (veh/h)	25	291	242	132	283	67	0	0	0	53	106	41
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.87	0.97		0.96				1.00		0.67
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	1572	1572	1572	1572	1572	1572				1597	1597	1597
Adj Flow Rate, veh/h	28	327	272	148	318	75				60	119	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3				1	1	1
Cap, veh/h	103	800	624	220	409	87				113	224	87
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54				0.31	0.31	0.31
Sat Flow, veh/h	53	1493	1165	246	763	162				364	722	279
Grp Volume(v), veh/h	355	0	272	541	0	0				225	0	0
Grp Sat Flow(s),veh/h/ln	1545	0	1165	1171	0	0				1364	0	0
Q Serve(g_s), s	0.0	0.0	7.4	14.0	0.0	0.0				7.1	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	7.4	21.1	0.0	0.0				7.1	0.0	0.0
Prop In Lane	0.08		1.00	0.27		0.14				0.27		0.20
Lane Grp Cap(c), veh/h	902	0	624	716	0	0				424	0	0
V/C Ratio(X)	0.39	0.00	0.44	0.76	0.00	0.00				0.53	0.00	0.00
Avail Cap(c_a), veh/h	1426	0	1030	1136	0	0				813	0	0
HCM Platoon Ratio	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	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	7.3	10.4	0.0	0.0				14.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.5	1.7	0.0	0.0				1.0	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
%ile BackOfQ(95%),veh/ln	3.5	0.0	2.7	8.0	0.0	0.0				3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.5	0.0	7.8	12.1	0.0	0.0				15.8	0.0	0.0
LnGrp LOS	A	A	A	B	A	A				B	A	A
Approach Vol, veh/h		627			541						225	
Approach Delay, s/veh		7.6			12.1						15.8	
Approach LOS		A			B						B	

Timer - Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		31.9		20.1		31.9		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		46.0		31.0		46.0		
Max Q Clear Time (g_c+I1), s		9.4		9.1		23.1		
Green Ext Time (p_c), s		4.0		1.5		4.8		

Intersection Summary			
HCM 6th Ctrl Delay			10.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	6	0	0	3	3	168	337	0	6	0	162
Future Volume (veh/h)	291	6	0	0	3	3	168	337	0	6	0	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.96		1.00	0.97		0.93
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	1610	1610	0	0	1610	1610	1535	1535	1535	1547	1547	1547
Adj Flow Rate, veh/h	355	7	0	0	4	4	205	411	0	7	0	198
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	0	0	0	0	6	6	6	5	5	5
Cap, veh/h	450	9	0	0	9	9	417	734	0	85	12	467
Arrive On Green	0.30	0.30	0.00	0.00	0.01	0.01	0.40	0.40	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1505	30	0	0	730	730	734	1927	0	12	30	1182
Grp Volume(v), veh/h	362	0	0	0	0	8	327	289	0	205	0	0
Grp Sat Flow(s),veh/h/ln	1535	0	0	0	0	1460	1264	1327	0	1224	0	0
Q Serve(g_s), s	10.0	0.0	0.0	0.0	0.0	0.3	3.8	7.8	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0	0.0	0.0	0.3	9.4	7.8	0.0	5.6	0.0	0.0
Prop In Lane	0.98		0.00	0.00		0.50	0.63		0.00	0.03		0.97
Lane Grp Cap(c), veh/h	459	0	0	0	0	19	627	524	0	565	0	0
V/C Ratio(X)	0.79	0.00	0.00	0.00	0.00	0.43	0.52	0.55	0.00	0.36	0.00	0.00
Avail Cap(c_a), veh/h	849	0	0	0	0	491	1620	1598	0	1542	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	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	0.0	0.0	0.0	22.6	11.1	10.8	0.0	10.1	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.0	0.0	5.8	0.8	1.1	0.0	0.5	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(95%),veh/ln	5.9	0.0	0.0	0.0	0.0	0.2	4.2	3.7	0.0	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	0.0	0.0	0.0	28.4	11.9	11.9	0.0	10.6	0.0	0.0
LnGrp LOS	B	A	A	A	A	C	B	B	A	B	A	A
Approach Vol, veh/h		362			8			616			205	
Approach Delay, s/veh		17.1			28.4			11.9			10.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.7		18.3		22.7		5.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		25.5		55.5		15.5				
Max Q Clear Time (g_c+I1), s		11.4		12.0		7.6		2.3				
Green Ext Time (p_c), s		6.0		1.6		2.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	36	69	545	182	144	35	1064	0	40	1211	6
Future Volume (veh/h)	40	36	69	545	182	144	35	1064	0	40	1211	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1547	1547	1547	1597	1597	1597	1597	1597	0	1585	1585	1585
Adj Flow Rate, veh/h	43	38	73	580	194	0	37	1132	0	43	1288	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	1	1	1	1	1	0	2	2	2
Cap, veh/h	66	127	107	551	357		62	1501	0	68	1531	7
Arrive On Green	0.04	0.08	0.08	0.19	0.22	0.00	0.04	0.49	0.00	0.04	0.50	0.50
Sat Flow, veh/h	1474	1547	1311	2951	1597	1354	1521	3115	0	1509	3073	14
Grp Volume(v), veh/h	43	38	73	580	194	0	37	1132	0	43	631	663
Grp Sat Flow(s),veh/h/ln	1474	1547	1311	1476	1597	1354	1521	1518	0	1509	1506	1582
Q Serve(g_s), s	2.5	2.0	4.6	16.0	9.2	0.0	2.1	25.8	0.0	2.4	31.0	31.1
Cycle Q Clear(g_c), s	2.5	2.0	4.6	16.0	9.2	0.0	2.1	25.8	0.0	2.4	31.0	31.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.01
Lane Grp Cap(c), veh/h	66	127	107	551	357		62	1501	0	68	750	788
V/C Ratio(X)	0.65	0.30	0.68	1.05	0.54		0.59	0.75	0.00	0.64	0.84	0.84
Avail Cap(c_a), veh/h	481	505	428	551	357		284	3025	0	282	1501	1577
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	37.1	38.3	34.9	29.4	0.0	40.4	17.5	0.0	40.3	18.6	18.6
Incr Delay (d2), s/veh	10.3	1.3	7.3	53.2	1.7	0.0	3.3	0.6	0.0	3.6	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	1.4	3.1	15.2	6.6	0.0	1.5	13.1	0.0	1.7	15.5	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	38.4	45.6	88.1	31.1	0.0	43.8	18.1	0.0	43.9	20.6	20.5
LnGrp LOS	D	D	D	F	C		D	B	A	D	C	C
Approach Vol, veh/h		154			774			1169			1337	
Approach Delay, s/veh		45.2			73.8			18.9			21.3	
Approach LOS		D			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	47.2	20.0	11.0	7.8	46.9	7.8	23.2
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	85.5	16.0	28.0	16.0	85.5	28.0	16.0
Max Q Clear Time (g_c+I1), s	4.1	33.1	18.0	6.6	4.4	27.8	4.5	11.2
Green Ext Time (p_c), s	0.0	9.7	0.0	0.4	0.0	9.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] 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)	29	2	43	406	16	63	10	1036	5	10	1666	35
Future Volume (veh/h)	29	2	43	406	16	63	10	1036	5	10	1666	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1610	1610	1610	1585	1585	1585	1597	1597	1597
Adj Flow Rate, veh/h	30	2	44	491	0	0	10	1068	5	10	1718	36
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	1	1	1
Cap, veh/h	36	2	53	582	306	0	22	1726	770	22	2323	49
Arrive On Green	0.07	0.07	0.07	0.19	0.00	0.00	0.01	0.57	0.57	0.01	0.57	0.57
Sat Flow, veh/h	543	36	796	3067	1610	0	1509	3011	1343	1521	4053	85
Grp Volume(v), veh/h	76	0	0	491	0	0	10	1068	5	10	1083	671
Grp Sat Flow(s),veh/h/ln	1375	0	0	1533	1610	0	1509	1506	1343	1521	1278	1582
Q Serve(g_s), s	6.3	0.0	0.0	17.8	0.0	0.0	0.8	27.1	0.2	0.8	36.3	36.3
Cycle Q Clear(g_c), s	6.3	0.0	0.0	17.8	0.0	0.0	0.8	27.1	0.2	0.8	36.3	36.3
Prop In Lane	0.39		0.58	1.00		0.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	92	0	0	582	306	0	22	1726	770	22	1465	907
V/C Ratio(X)	0.82	0.00	0.00	0.84	0.00	0.00	0.46	0.62	0.01	0.46	0.74	0.74
Avail Cap(c_a), veh/h	190	0	0	1739	913	0	202	2215	988	204	1880	1164
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	0.0	0.0	45.2	0.0	0.0	56.5	16.3	10.6	56.5	18.3	18.3
Incr Delay (d2), s/veh	16.5	0.0	0.0	2.6	0.0	0.0	5.7	0.5	0.0	5.6	1.4	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(95%),veh/ln	4.7	0.0	0.0	11.4	0.0	0.0	0.6	13.3	0.1	0.6	15.8	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	0.0	0.0	47.7	0.0	0.0	62.2	16.8	10.6	62.1	19.7	20.6
LnGrp LOS	E	A	A	D	A	A	E	B	B	E	B	C
Approach Vol, veh/h		76			491			1083			1764	
Approach Delay, s/veh		69.7			47.7			17.2			20.3	
Approach LOS		E			D			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	71.2		26.4	6.1	71.2		11.7
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.0
Max Green Setting (Gmax), s	15.5	85.0		65.5	15.5	85.0		16.0
Max Q Clear Time (g_c+I1), s	2.8	38.3		19.8	2.8	29.1		8.3
Green Ext Time (p_c), s	0.0	27.9		1.4	0.0	13.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	148	105	469	167	90	38	65	134	167	375	14
Future Volume (veh/h)	6	148	105	469	167	90	38	65	134	167	375	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1547	1547	1547	1572	1572	1572	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	6	156	111	494	176	95	40	68	0	176	395	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, %	5	5	5	3	3	3	2	2	2	3	3	3
Cap, veh/h	14	188	134	500	511	276	124	471		428	447	17
Arrive On Green	0.01	0.22	0.22	0.33	0.53	0.53	0.30	0.30	0.00	0.30	0.30	0.30
Sat Flow, veh/h	1474	840	598	1497	961	518	976	1585	1343	1319	1505	57
Grp Volume(v), veh/h	6	0	267	494	0	271	40	68	0	176	0	410
Grp Sat Flow(s),veh/h/ln	1474	0	1438	1497	0	1479	976	1585	1343	1319	0	1562
Q Serve(g_s), s	0.4	0.0	16.4	30.5	0.0	9.8	3.8	2.9	0.0	10.5	0.0	23.2
Cycle Q Clear(g_c), s	0.4	0.0	16.4	30.5	0.0	9.8	27.0	2.9	0.0	13.4	0.0	23.2
Prop In Lane	1.00		0.42	1.00		0.35	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	14	0	321	500	0	787	124	471		428	0	464
V/C Ratio(X)	0.44	0.00	0.83	0.99	0.00	0.34	0.32	0.14		0.41	0.00	0.88
Avail Cap(c_a), veh/h	389	0	689	500	0	787	124	471		476	0	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.8	0.0	34.4	30.7	0.0	12.5	44.0	24.0	0.0	28.9	0.0	31.1
Incr Delay (d2), s/veh	28.6	0.0	7.7	37.1	0.0	0.4	2.1	0.2	0.0	1.1	0.0	16.3
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(95%),veh/ln	0.4	0.0	10.3	22.0	0.0	5.5	1.8	2.0	0.0	6.2	0.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	0.0	42.1	67.9	0.0	12.8	46.1	24.1	0.0	30.0	0.0	47.4
LnGrp LOS	E	A	D	E	A	B	D	C		C	A	D
Approach Vol, veh/h		273			765			108			586	
Approach Delay, s/veh		42.8			48.4			32.3			42.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	54.9		31.6	35.0	26.2		31.6
Change Period (Y+Rc), s	5.5	* 5.5		4.0	4.0	5.5		4.0
Max Green Setting (Gmax), s	24.5	* 36		26.0	31.0	44.5		31.0
Max Q Clear Time (g_c+I1), s	2.4	11.8		29.0	32.5	18.4		25.2
Green Ext Time (p_c), s	0.0	2.3		0.0	0.0	2.3		2.4

Intersection Summary		
HCM 6th Ctrl Delay		44.4
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] 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)	19	455	27	146	678	129	19	17	114	211	53	121
Future Volume (veh/h)	19	455	27	146	678	129	19	17	114	211	53	121
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		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1585	1585	1560	1560	1560	1547	1547	1547	1547	1547	1547
Adj Flow Rate, veh/h	20	474	28	152	706	0	20	18	0	220	55	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	4	4	4	5	5	5	5	5	5
Cap, veh/h	45	872	51	200	1206		457	381		492	381	
Arrive On Green	0.03	0.30	0.30	0.13	0.41	0.00	0.25	0.25	0.00	0.25	0.25	0.00
Sat Flow, veh/h	1509	2884	170	1485	2964	1322	1317	1547	0	1362	1547	0
Grp Volume(v), veh/h	20	247	255	152	706	0	20	18	0	220	55	0
Grp Sat Flow(s),veh/h/ln	1509	1506	1548	1485	1482	1322	1317	1547	0	1362	1547	0
Q Serve(g_s), s	0.6	5.8	5.9	4.2	7.9	0.0	0.5	0.4	0.0	6.3	1.2	0.0
Cycle Q Clear(g_c), s	0.6	5.8	5.9	4.2	7.9	0.0	1.7	0.4	0.0	6.6	1.2	0.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	45	455	468	200	1206		457	381		492	381	
V/C Ratio(X)	0.45	0.54	0.54	0.76	0.59		0.04	0.05		0.45	0.14	
Avail Cap(c_a), veh/h	372	1431	1472	1063	4208		1075	1108		1132	1108	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.3	12.4	12.4	17.8	9.8	0.0	13.2	12.2	0.0	14.8	12.5	0.0
Incr Delay (d2), s/veh	9.6	1.4	1.4	8.2	0.5	0.0	0.1	0.1	0.0	1.4	0.4	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(95%),veh/ln	0.5	3.1	3.2	3.0	3.4	0.0	0.3	0.2	0.0	3.3	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	13.8	13.8	26.0	10.4	0.0	13.3	12.3	0.0	16.1	12.9	0.0
LnGrp LOS	C	B	B	C	B		B	B		B	B	
Approach Vol, veh/h		522			858			38			275	
Approach Delay, s/veh		14.4			13.2			12.8			15.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	5.8	21.8	15.0	10.2	17.4	15.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	60.5	30.5	30.5	40.5	30.5
Max Q Clear Time (g_c+I1), s	2.6	9.9	3.7	6.2	7.9	8.6
Green Ext Time (p_c), s	0.0	6.8	0.2	0.7	4.6	2.1

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

Notes

Unsignalized Delay for [NBR, WBR, SBR] 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)	250	244	150	27	601	10	167	93	27	6	88	333
Future Volume (veh/h)	250	244	150	27	601	10	167	93	27	6	88	333
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	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	1572	1572	1572	1597	1597	1597	1585	1585	1585	1560	1560	1560
Adj Flow Rate, veh/h	272	265	163	29	653	11	182	101	29	7	96	362
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	1	1	1	2	2	2	4	4	4
Cap, veh/h	214	668	398	53	805	14	192	106	251	21	281	256
Arrive On Green	0.14	0.37	0.37	0.03	0.26	0.26	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1497	1798	1070	1521	3054	51	987	548	1296	106	1449	1318
Grp Volume(v), veh/h	272	219	209	29	324	340	283	0	29	103	0	362
Grp Sat Flow(s),veh/h/ln	1497	1494	1375	1521	1518	1588	1536	0	1296	1554	0	1318
Q Serve(g_s), s	12.5	9.4	9.9	1.6	17.5	17.5	15.9	0.0	1.6	5.0	0.0	17.0
Cycle Q Clear(g_c), s	12.5	9.4	9.9	1.6	17.5	17.5	15.9	0.0	1.6	5.0	0.0	17.0
Prop In Lane	1.00		0.78	1.00		0.03	0.64		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	214	555	511	53	400	419	298	0	251	302	0	256
V/C Ratio(X)	1.27	0.39	0.41	0.55	0.81	0.81	0.95	0.00	0.12	0.34	0.00	1.42
Avail Cap(c_a), veh/h	214	716	659	104	615	644	298	0	251	302	0	256
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	37.5	20.3	20.4	41.6	30.2	30.2	34.9	0.0	29.1	30.5	0.0	35.3
Incr Delay (d2), s/veh	154.1	0.5	0.5	8.6	4.7	4.6	38.7	0.0	0.2	0.7	0.0	208.4
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(95%),veh/ln	21.6	5.7	5.5	1.3	10.8	11.2	14.0	0.0	0.9	3.5	0.0	32.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	191.6	20.7	20.9	50.2	34.9	34.8	73.6	0.0	29.3	31.1	0.0	243.7
LnGrp LOS	F	C	C	D	C	C	E	A	C	C	A	F
Approach Vol, veh/h		700			693			312			465	
Approach Delay, s/veh		87.2			35.5			69.5			196.6	
Approach LOS		F			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	37.1		21.5	17.0	27.6		21.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.0	42.0		17.0	12.5	35.5		17.0				
Max Q Clear Time (g_c+I1), s	13.6	11.9		19.0	14.5	19.5		17.9				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	3.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			91.6									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	61.4
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	97	0	169	0	0	803
Future Vol, veh/h	97	0	169	0	0	803
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.92
Heavy Vehicles, %	4	4	3	3	1	1
Mvmt Flow	107	0	186	0	0	873
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	11.1	10.2	78.4
HCM LOS	B	B	F

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	100%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	169	97	803
LT Vol	0	97	0
Through Vol	169	0	803
RT Vol	0	0	0
Lane Flow Rate	186	107	873
Geometry Grp	1	1	1
Degree of Util (X)	0.266	0.188	1.088
Departure Headway (Hd)	5.315	6.62	4.487
Convergence, Y/N	Yes	Yes	Yes
Cap	680	546	812
Service Time	3.315	4.62	2.531
HCM Lane V/C Ratio	0.274	0.196	1.075
HCM Control Delay	10.2	11.1	78.4
HCM Lane LOS	B	B	F
HCM 95th-tile Q	1.1	0.7	22.9

Intersection						
Int Delay, s/veh	6.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	141	79	81	227	207	90
Future Vol, veh/h	141	79	81	227	207	90
Conflicting Peds, #/hr	3	1	1	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	1	1	4	4
Mvmt Flow	147	82	84	236	216	94

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	673	267	313	0	-	0
Stage 1	266	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.209	-	-	-
Pot Cap-1 Maneuver	419	769	1253	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	385	767	1250	-	-	-
Mov Cap-2 Maneuver	385	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.8	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1250	-	469	-	-
HCM Lane V/C Ratio	0.068	-	0.489	-	-
HCM Control Delay (s)	8.1	0	19.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.6	-	-

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	126	172	3	2	118	9	4	10	1	5	18	96
Future Vol, veh/h	126	172	3	2	118	9	4	10	1	5	18	96
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	6	6	6
Mvmt Flow	158	215	4	3	148	11	5	13	1	6	23	120
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	9.1	8.6	9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	42%	2%	4%
Vol Thru, %	67%	57%	91%	15%
Vol Right, %	7%	1%	7%	81%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	301	129	119
LT Vol	4	126	2	5
Through Vol	10	172	118	18
RT Vol	1	3	9	96
Lane Flow Rate	19	376	161	149
Geometry Grp	1	1	1	1
Degree of Util (X)	0.028	0.481	0.212	0.198
Departure Headway (Hd)	5.374	4.607	4.734	4.791
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	779	755	745
Service Time	3.446	2.65	2.785	2.844
HCM Lane V/C Ratio	0.029	0.483	0.213	0.2
HCM Control Delay	8.6	11.9	9.1	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	2.6	0.8	0.7

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	71	240	57	72	4	258	65	68	3	92	19
Future Vol, veh/h	18	71	240	57	72	4	258	65	68	3	92	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	0	0	0	3	3	3	6	6	6
Mvmt Flow	19	76	258	61	77	4	277	70	73	3	99	20
Number of Lanes	1	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	15.3	12.5	14.8	11.5
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	1%	43%	100%	0%
Vol Thru, %	0%	49%	0%	23%	54%	0%	83%
Vol Right, %	0%	51%	0%	77%	3%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	258	133	16	313	133	3	111
LT Vol	258	0	16	2	57	3	0
Through Vol	0	65	0	71	72	0	92
RT Vol	0	68	0	240	4	0	19
Lane Flow Rate	277	143	17	336	143	3	120
Geometry Grp	5	5	5	5	4b	5	5
Degree of Util (X)	0.525	0.236	0.034	0.549	0.272	0.006	0.225
Departure Headway (Hd)	6.814	5.942	6.925	5.877	6.837	7.392	6.76
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	527	602	515	612	522	481	528
Service Time	4.58	3.707	4.695	3.646	4.922	5.179	4.546
HCM Lane V/C Ratio	0.526	0.238	0.033	0.549	0.274	0.006	0.227
HCM Control Delay	16.9	10.6	9.9	15.6	12.5	10.2	11.5
HCM Lane LOS	C	B	A	C	B	B	B
HCM 95th-tile Q	3	0.9	0.1	3.3	1.1	0	0.9

MOVEMENT SUMMARY

Site: 74 [Wheaton Way & Manette Bridge (Site Folder: 2044 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
East: Harkins St (WB)															
6	T1	All MCs	278	1.8	278	1.8	0.387	8.4	LOS A	2.5	62.5	0.73	0.69	0.73	33.7
16	R2	All MCs	39	1.8	39	1.8	0.387	8.2	LOS A	2.5	62.5	0.73	0.69	0.73	33.4
Approach			317	1.8	317	1.8	0.387	8.4	LOS A	2.5	62.5	0.73	0.69	0.73	33.6
North: Wheaton Way (SB)															
7u	U	All MCs	1	2.4	1	2.4	0.356	12.6	LOS B	2.3	57.5	0.54	0.60	0.54	33.8
7	L2	All MCs	44	2.4	44	2.4	0.356	10.6	LOS B	2.3	57.5	0.54	0.60	0.54	33.8
14	R2	All MCs	324	2.4	324	2.4	0.356	6.1	LOS A	2.3	57.5	0.54	0.60	0.54	34.1
Approach			369	2.4	369	2.4	0.356	6.6	LOS A	2.3	57.5	0.54	0.60	0.54	34.1
West: Manette Bridge (EB)															
5	L2	All MCs	589	2.1	589	2.1	0.776	9.7	LOS A	11.6	295.8	0.49	0.51	0.49	32.9
2	T1	All MCs	407	2.1	407	2.1	0.776	5.4	LOS A	11.6	295.8	0.49	0.51	0.49	33.4
Approach			997	2.1	997	2.1	0.776	7.9	LOS A	11.6	295.8	0.49	0.51	0.49	33.1
All Vehicles			1683	2.1	1683	2.1	0.776	7.7	LOS A	11.6	295.8	0.54	0.56	0.54	33.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection												
Int Delay, s/veh	2.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	202	21	0	0	0	0	0	1	75
Future Vol, veh/h	0	0	0	202	21	0	0	0	0	0	1	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	6	6	6	0	0	0	1	1	1
Mvmt Flow	0	0	0	227	24	0	0	0	0	0	1	84

Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	478	27
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.16	-	-	-	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.254	-	-	-	4.009	3.309
Pot Cap-1 Maneuver	-	-	0	0	488	1051
Stage 1	-	-	0	0	557	-
Stage 2	-	-	0	0	-	-
Platoon blocked, %		-				
Mov Cap-1 Maneuver	-	-	-	-	0	1051
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB	SB
HCM Control Delay, s		8.7
HCM LOS		A

Minor Lane/Major Mvmt	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1051
HCM Lane V/C Ratio	-	-	0.08
HCM Control Delay (s)	-	-	8.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

Intersection						
Int Delay, s/veh	2.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	72	363	44	53	215
Future Vol, veh/h	30	72	363	44	53	215
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	31	75	378	46	55	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	735	401	0	0	424	0
Stage 1	401	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	390	653	-	-	1146	-
Stage 1	681	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	371	653	-	-	1146	-
Mov Cap-2 Maneuver	371	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	534	1146	-
HCM Lane V/C Ratio	-	-	0.199	0.048	-
HCM Control Delay (s)	-	-	13.4	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Intersection	
Intersection Delay, s/veh	38.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	372	53	13	411	10	87	43	66	53	27	7
Future Vol, veh/h	8	372	53	13	411	10	87	43	66	53	27	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	5	5	5	2	2	2	0	0	0
Mvmt Flow	9	433	62	15	478	12	101	50	77	62	31	8
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	45.5	46.6	16.5	13.5
HCM LOS	E	E	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	44%	100%	0%	100%	0%	61%
Vol Thru, %	22%	0%	88%	0%	98%	31%
Vol Right, %	34%	0%	12%	0%	2%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	8	425	13	421	87
LT Vol	87	8	0	13	0	53
Through Vol	43	0	372	0	411	27
RT Vol	66	0	53	0	10	7
Lane Flow Rate	228	9	494	15	490	101
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.461	0.019	0.914	0.031	0.92	0.228
Departure Headway (Hd)	7.286	7.261	6.659	7.298	6.769	8.115
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	492	491	544	488	534	445
Service Time	5.38	5.038	4.436	5.077	4.547	6.115
HCM Lane V/C Ratio	0.463	0.018	0.908	0.031	0.918	0.227
HCM Control Delay	16.5	10.2	46.2	10.3	47.7	13.5
HCM Lane LOS	C	B	E	B	E	B
HCM 95th-tile Q	2.4	0.1	11	0.1	11.1	0.9

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	111	4	227	150	110	0	0	103	280
Future Vol, veh/h	0	0	0	111	4	227	150	110	0	0	103	280
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	2	2	2	2	2	4	4	4
Mvmt Flow	0	0	0	116	4	236	156	115	0	0	107	292

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	534	534	115	107	0	-	-	-	0
Stage 1	427	427	-	-	-	-	-	-	-
Stage 2	107	107	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	507	452	937	1484	-	0	0	-	-
Stage 1	658	585	-	-	-	0	0	-	-
Stage 2	917	807	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	450	0	937	1484	-	-	-	-	-
Mov Cap-2 Maneuver	450	0	-	-	-	-	-	-	-
Stage 1	584	0	-	-	-	-	-	-	-
Stage 2	917	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	4.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1484	-	450	937	-	-
HCM Lane V/C Ratio	0.105	-	0.266	0.252	-	-
HCM Control Delay (s)	7.7	0	15.9	10.1	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.1	1	-	-

Intersection	
Int Delay, s/veh	13.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	0	362	0	0	0	0	187	23	235	200	0
Future Vol, veh/h	87	0	362	0	0	0	0	187	23	235	200	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	0	0	0	7	7	7	2	2	2
Mvmt Flow	87	0	362	0	0	0	0	187	23	235	200	0

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	869	880	200				-	0	0	210	0	0
Stage 1	670	670	-				-	-	-	-	-	-
Stage 2	199	210	-				-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.21				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.41	5.51	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-				-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	324	287	843				0	-	-	1361	-	0
Stage 1	510	457	-				0	-	-	-	-	0
Stage 2	837	730	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	261	0	843				-	-	-	1361	-	-
Mov Cap-2 Maneuver	261	0	-				-	-	-	-	-	-
Stage 1	510	0	-				-	-	-	-	-	-
Stage 2	675	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28	0	4.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	589	1361	-
HCM Lane V/C Ratio	-	-	0.762	0.173	-
HCM Control Delay (s)	-	-	28	8.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	6.9	0.6	-

Intersection	
Int Delay, s/veh	32.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	456	358	373	746	0	0	0	0	46	0	119
Future Vol, veh/h	0	456	358	373	746	0	0	0	0	46	0	119
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	175	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	0	0	0	4	4	4
Mvmt Flow	0	490	385	401	802	0	0	0	0	49	0	128

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	-	493	0	0	1851	2097	403
Stage 1	-	-	-	-	-	-	1604	1604	-
Stage 2	-	-	-	-	-	-	247	493	-
Critical Hdwy	-	-	-	4.16	-	-	6.88	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	5.88	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.88	5.58	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.54	4.04	3.34
Pot Cap-1 Maneuver	0	-	0	1060	-	0	64	50	591
Stage 1	0	-	0	-	-	0	147	160	-
Stage 2	0	-	0	-	-	0	765	540	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	1060	-	-	~ 20	0	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 20	0	-
Stage 1	-	-	-	-	-	-	147	0	-
Stage 2	-	-	-	-	-	-	243	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.7	$ 308.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	1060	-	20	590
HCM Lane V/C Ratio	-	0.378	-	2.473	0.217
HCM Control Delay (s)	-	10.4	1.8	$ 1073.4	12.8
HCM Lane LOS	-	B	A	F	B
HCM 95th %tile Q(veh)	-	1.8	-	6.5	0.8

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	334	0	0	859	282	453	0	279	0	0	0
Future Volume (veh/h)	184	334	0	0	859	282	453	0	279	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1585	1585	0	0	1585	1585	1560	1560	1560			
Adj Flow Rate, veh/h	196	355	0	0	914	0	482	0	297			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	4	4	4			
Cap, veh/h	0	1299	0	0	1299		589	0	521			
Arrive On Green	0.00	0.43	0.00	0.00	0.43	0.00	0.40	0.00	0.40			
Sat Flow, veh/h	0	3091	0	0	3170	0	1485	0	1315			
Grp Volume(v), veh/h	0	355	0	0	914	0	482	0	297			
Grp Sat Flow(s),veh/h/ln	0	1506	0	0	1506	0	1485	0	1315			
Q Serve(g_s), s	0.0	4.1	0.0	0.0	13.2	0.0	15.5	0.0	9.4			
Cycle Q Clear(g_c), s	0.0	4.1	0.0	0.0	13.2	0.0	15.5	0.0	9.4			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1299	0	0	1299		589	0	521			
V/C Ratio(X)	0.00	0.27	0.00	0.00	0.70		0.82	0.00	0.57			
Avail Cap(c_a), veh/h	0	4141	0	0	3633		840	0	744			
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	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	9.8	0.0	0.0	12.4	0.0	14.4	0.0	12.6			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.7	0.0	4.3	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	2.0	0.0	0.0	6.5	0.0	8.5	0.0	4.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.9	0.0	0.0	13.1	0.0	18.7	0.0	13.5			
LnGrp LOS	A	A	A	A	B		B	A	B			
Approach Vol, veh/h		355			914			779				
Approach Delay, s/veh		9.9			13.1			16.8				
Approach LOS		A			B			B				

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	0.0	27.6		25.8		27.6						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	5.0	64.4		30.2		73.4						
Max Q Clear Time (g_c+I1), s	0.0	15.2		17.5		6.1						
Green Ext Time (p_c), s	0.0	7.8		3.5		2.5						

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

Notes
Unsignalized Delay for [WBR] 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)	55	0	33	39	1	24	43	1670	51	42	1463	45
Future Volume (veh/h)	55	0	33	39	1	24	43	1670	51	42	1463	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.96	0.97		0.96	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	1397	1397	1397	1572	1572	1572	1597	1597	1597	1585	1585	1585
Adj Flow Rate, veh/h	57	0	34	40	1	25	44	1722	53	43	1508	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	17	17	17	3	3	3	1	1	1	2	2	2
Cap, veh/h	142	0	114	142	5	124	284	2392	73	226	2374	72
Arrive On Green	0.10	0.00	0.10	0.10	0.10	0.10	0.03	0.80	0.80	0.03	0.80	0.80
Sat Flow, veh/h	1182	0	1141	1323	50	1244	1521	3004	92	1509	2982	91
Grp Volume(v), veh/h	57	0	34	40	0	26	44	866	909	43	760	794
Grp Sat Flow(s),veh/h/ln	1182	0	1141	1323	0	1294	1521	1518	1578	1509	1506	1567
Q Serve(g_s), s	7.3	0.0	4.3	4.5	0.0	2.9	0.8	42.3	43.1	0.8	32.4	32.7
Cycle Q Clear(g_c), s	10.1	0.0	4.3	8.8	0.0	2.9	0.8	42.3	43.1	0.8	32.4	32.7
Prop In Lane	1.00		1.00	1.00		0.96	1.00		0.06	1.00		0.06
Lane Grp Cap(c), veh/h	142	0	114	142	0	129	284	1208	1257	226	1199	1248
V/C Ratio(X)	0.40	0.00	0.30	0.28	0.00	0.20	0.15	0.72	0.72	0.19	0.63	0.64
Avail Cap(c_a), veh/h	267	0	234	281	0	265	340	1208	1257	282	1199	1248
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	0.19	0.19	0.19	0.75	0.75	0.75
Uniform Delay (d), s/veh	69.2	0.0	65.2	69.2	0.0	64.5	6.4	7.5	7.6	9.6	6.6	6.6
Incr Delay (d2), s/veh	1.8	0.0	1.4	1.1	0.0	0.8	0.0	0.7	0.7	0.3	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	0.0	2.4	2.9	0.0	1.8	0.6	14.7	15.5	0.9	14.2	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	0.0	66.6	70.3	0.0	65.3	6.5	8.3	8.3	9.9	8.5	8.5
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		91			66			1819			1597	
Approach Delay, s/veh		69.3			68.3			8.3			8.5	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	128.2		19.6	8.3	128.2		19.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	86.0		32.0	10.0	102.0		32.0				
Max Q Clear Time (g_c+I1), s	2.8	45.1		12.1	2.8	34.7		10.8				
Green Ext Time (p_c), s	0.0	21.0		0.3	0.0	19.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			11.0
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	970	480	37	495	4	610	141	33	225	559	53
Future Volume (veh/h)	76	970	480	37	495	4	610	141	33	225	559	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1560	1560	1560	1522	1522	1522	1510	1510	1510	1585	1585	1585
Adj Flow Rate, veh/h	79	1010	0	39	516	4	635	147	34	234	582	55
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	4	7	7	7	8	8	8	2	2	2
Cap, veh/h	50	651		46	627	5	227	249	58	257	356	302
Arrive On Green	0.03	0.42	0.00	0.03	0.42	0.42	0.16	0.21	0.21	0.17	0.22	0.22
Sat Flow, veh/h	1485	1560	1322	1450	1508	12	1438	1186	274	1509	1585	1343
Grp Volume(v), veh/h	79	1010	0	39	0	520	635	0	181	234	582	55
Grp Sat Flow(s),veh/h/ln	1485	1560	1322	1450	0	1520	1438	0	1460	1509	1585	1343
Q Serve(g_s), s	4.0	50.0	0.0	3.2	0.0	36.4	18.9	0.0	13.4	18.2	26.9	4.0
Cycle Q Clear(g_c), s	4.0	50.0	0.0	3.2	0.0	36.4	18.9	0.0	13.4	18.2	26.9	4.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	50	651		46	0	632	227	0	306	257	356	302
V/C Ratio(X)	1.59	1.55		0.85	0.00	0.82	2.80	0.00	0.59	0.91	1.64	0.18
Avail Cap(c_a), veh/h	50	651		48	0	641	227	0	306	285	356	302
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	34.9	0.0	57.7	0.0	31.1	50.4	0.0	42.7	48.8	46.4	37.6
Incr Delay (d2), s/veh	342.6	255.6	0.0	72.7	0.0	9.3	821.9	0.0	2.6	29.5	298.3	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(95%),veh/ln	11.2	99.0	0.0	3.7	0.0	20.6	91.8	0.0	8.6	13.9	62.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	400.5	290.5	0.0	130.4	0.0	40.4	872.3	0.0	45.3	78.4	344.8	37.8
LnGrp LOS	F	F		F	A	D	F	A	D	E	F	D
Approach Vol, veh/h		1089			559			816			871	
Approach Delay, s/veh		298.5			46.7			688.9			253.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	55.4	24.0	32.0	8.6	55.2	25.8	30.2
Change Period (Y+Rc), s	4.6	5.4	5.1	5.1	4.6	* 5.4	5.4	* 5.1
Max Green Setting (Gmax), s	4.0	50.0	18.9	26.9	4.0	* 51	22.6	* 23
Max Q Clear Time (g_c+I1), s	5.2	52.0	20.9	28.9	6.0	38.4	20.2	15.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.1	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	340.1
HCM 6th LOS	F

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)	546	27	306	92	33	277	49	598	13	109	671	3
Future Volume (veh/h)	546	27	306	92	33	277	49	598	13	109	671	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1572	1572	1572	1560	1560	1560	1510	1510	1510	1560	1560	1560
Adj Flow Rate, veh/h	593	29	333	100	36	0	53	650	14	118	729	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	4	4	4	8	8	8	4	4	4
Cap, veh/h	553	31	351	185	67		106	675	572	159	728	617
Arrive On Green	0.32	0.28	0.28	0.08	0.04	0.00	0.04	0.45	0.45	0.06	0.47	0.47
Sat Flow, veh/h	1497	108	1241	1485	1560	1322	1438	1510	1279	1485	1560	1322
Grp Volume(v), veh/h	593	0	362	100	36	0	53	650	14	118	729	3
Grp Sat Flow(s),veh/h/ln	1497	0	1349	1485	1560	1322	1438	1510	1279	1485	1560	1322
Q Serve(g_s), s	44.0	0.0	36.6	8.8	3.1	0.0	2.7	58.2	0.9	5.9	65.0	0.2
Cycle Q Clear(g_c), s	44.0	0.0	36.6	8.8	3.1	0.0	2.7	58.2	0.9	5.9	65.0	0.2
Prop In Lane	1.00		0.92	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	553	0	381	185	67		106	675	572	159	728	617
V/C Ratio(X)	1.07	0.00	0.95	0.54	0.54		0.50	0.96	0.02	0.74	1.00	0.00
Avail Cap(c_a), veh/h	553	0	381	199	67		114	675	572	210	728	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	0.0	49.0	57.9	65.2	0.0	33.1	37.4	21.5	32.1	37.1	19.8
Incr Delay (d2), s/veh	59.2	0.0	33.2	2.5	8.1	0.0	3.6	25.6	0.0	9.4	33.6	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(95%),veh/ln	16.7	0.0	22.5	6.3	2.6	0.0	1.9	34.6	0.5	4.5	40.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.1	0.0	82.1	60.4	73.3	0.0	36.8	63.0	21.5	41.5	70.7	19.8
LnGrp LOS	F	A	F	E	E		D	E	C	D	F	B
Approach Vol, veh/h		955			136			717			850	
Approach Delay, s/veh		95.1			63.8			60.2			66.5	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	68.3	14.6	43.9	9.7	71.0	48.0	10.5
Change Period (Y+Rc), s	4.5	6.0	4.0	4.5	4.5	6.0	4.0	4.5
Max Green Setting (Gmax), s	12.8	58.2	12.0	38.0	6.0	65.0	44.0	6.0
Max Q Clear Time (g_c+I1), s	7.9	60.2	10.8	38.6	4.7	67.0	46.0	5.1
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.0
HCM 6th LOS	E

Notes
Unsignalized Delay for [WBR] 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)	28	115	35	7	199	17	79	25	15	8	23	12
Future Volume (veh/h)	28	115	35	7	199	17	79	25	15	8	23	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1597	1597	1597	1585	1585	1585	1585	1585	1585	1535	1535	1535
Adj Flow Rate, veh/h	30	124	38	8	214	18	85	27	16	9	25	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	6	6	6
Cap, veh/h	251	301	84	196	401	33	547	144	55	256	285	123
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	138	1064	297	24	1415	117	780	465	178	122	921	399
Grp Volume(v), veh/h	192	0	0	240	0	0	128	0	0	47	0	0
Grp Sat Flow(s),veh/h/ln	1499	0	0	1556	0	0	1423	0	0	1442	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0	0.0	2.6	0.0	0.0	1.3	0.0	0.0	0.5	0.0	0.0
Prop In Lane	0.16		0.20	0.03		0.07	0.66		0.12	0.19		0.28
Lane Grp Cap(c), veh/h	636	0	0	630	0	0	745	0	0	665	0	0
V/C Ratio(X)	0.30	0.00	0.00	0.38	0.00	0.00	0.17	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	2526	0	0	2637	0	0	2524	0	0	2466	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	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	6.0	0.0	0.0	5.1	0.0	0.0	4.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	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(95%),veh/ln	0.6	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	0.0	6.3	0.0	0.0	5.2	0.0	0.0	4.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		192			240			128			47	
Approach Delay, s/veh		6.0			6.3			5.2			4.9	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.1		9.6		10.1		9.6				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		31.0		31.0		31.0		31.0				
Max Q Clear Time (g_c+I1), s		3.3		4.0		2.5		4.6				
Green Ext Time (p_c), s		0.7		1.2		0.2		1.5				

Intersection Summary			
HCM 6th Ctrl Delay			5.9
HCM 6th LOS			A

MOVEMENT SUMMARY

Site: 328 [SR 3 & Ariport Rd (Site Folder: 2044 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing RAB
Site Category: (None)
Roundabout

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total	HV]	Arrival Flows [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: SR 3															
8	T1	All MCs	1615	4.0	1615	4.0	1.391	185.1	LOS F	174.7	4506.9	1.00	3.35	5.26	9.5
18	R2	All MCs	83	4.0	83	4.0	1.391	184.9	LOS F	174.7	4506.9	1.00	3.35	5.26	8.9
Approach			1698	4.0	1698	4.0	1.391	185.1	LOS F	174.7	4506.9	1.00	3.35	5.26	9.5
East: Ariport Rd															
1	L2	All MCs	203	8.0	203	8.0	1.928	441.9	LOS F	97.3	2588.5	1.00	4.53	7.65	4.4
16	R2	All MCs	385	8.0	385	8.0	1.928	437.9	LOS F	97.3	2588.5	1.00	4.53	7.65	4.4
Approach			588	8.0	588	8.0	1.928	439.3	LOS F	97.3	2588.5	1.00	4.53	7.65	4.4
North: SR 3															
7	L2	All MCs	157	5.0	157	5.0	0.880	12.2	LOS D	15.0	390.8	0.87	0.55	0.88	28.0
4	T1	All MCs	952	5.0	952	5.0	0.880	6.5	LOS D	15.0	390.8	0.87	0.55	0.88	35.5
Approach			1109	5.0	1109	5.0	0.880	7.3	LOS A	15.0	390.8	0.87	0.55	0.88	34.2
All Vehicles			3395	5.0	3395	5.0	1.928	171.1	LOS F	174.7	4506.9	0.96	2.64	4.24	9.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰	↑↑		↰		↱	↰↰	↱	
Traffic Volume (veh/h)	0	346	165	268	214	0	33	0	153	504	124	7
Future Volume (veh/h)	0	346	165	268	214	0	33	0	153	504	124	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1547	1547	1522	1522	0	1384	0	1384	1560	1560	1560
Adj Flow Rate, veh/h	0	402	192	312	249	0	38	0	0	586	144	8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	5	5	7	7	0	18	0	18	4	4	4
Cap, veh/h	0	1528	682	361	1983	0	0	0		690	350	19
Arrive On Green	0.00	0.52	0.52	0.21	1.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24
Sat Flow, veh/h	0	3017	1311	2812	2968	0		0		2882	1464	81
Grp Volume(v), veh/h	0	402	192	312	249	0		0.0		586	0	152
Grp Sat Flow(s),veh/h/ln	0	1470	1311	1406	1446	0				1441	0	1545
Q Serve(g_s), s	0.0	9.1	9.9	12.8	0.0	0.0				23.3	0.0	10.0
Cycle Q Clear(g_c), s	0.0	9.1	9.9	12.8	0.0	0.0				23.3	0.0	10.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.05
Lane Grp Cap(c), veh/h	0	1528	682	361	1983	0				690	0	370
V/C Ratio(X)	0.00	0.26	0.28	0.86	0.13	0.00				0.85	0.00	0.41
Avail Cap(c_a), veh/h	0	1528	682	434	1983	0				973	0	521
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.98	0.98	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	16.2	46.1	0.0	0.0				43.6	0.0	38.5
Incr Delay (d2), s/veh	0.0	0.4	1.0	15.3	0.1	0.0				5.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.6	5.6	8.4	0.1	0.0				13.6	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.4	17.2	61.4	0.1	0.0				49.2	0.0	39.4
LnGrp LOS	A	B	B	E	A	A				D	A	D
Approach Vol, veh/h		594			561						738	
Approach Delay, s/veh		16.7			34.2						47.2	
Approach LOS		B			C						D	

Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			19.9	66.9		33.2		86.8				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			18.5	31.5		40.5		54.5				
Max Q Clear Time (g_c+I1), s			14.8	11.9		25.3		2.0				
Green Ext Time (p_c), s			0.6	3.8		3.4		2.1				

Intersection Summary		
HCM 6th Ctrl Delay		33.8
HCM 6th LOS		C

Notes

Unsignalized Delay for [NBR] 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)	57	959	41	29	1064	40	47	27	53	89	21	158
Future Volume (veh/h)	57	959	41	29	1064	40	47	27	53	89	21	158
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	0.98		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	1560	1560	1560	1572	1572	1572	1572	1572	1572	1560	1560	1560
Adj Flow Rate, veh/h	62	1042	45	32	1157	43	51	29	58	97	23	172
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	3	3	3	3	3	3	4	4	4
Cap, veh/h	455	1074	464	391	1349	50	121	118	98	312	27	199
Arrive On Green	0.61	0.72	0.72	0.26	0.32	0.32	0.04	0.07	0.07	0.13	0.17	0.17
Sat Flow, veh/h	1485	2964	1281	1497	4243	158	1497	1572	1311	1485	158	1182
Grp Volume(v), veh/h	62	1042	45	32	780	420	51	29	58	97	0	195
Grp Sat Flow(s),veh/h/ln	1485	1482	1281	1497	1431	1539	1497	1572	1311	1485	0	1340
Q Serve(g_s), s	2.1	39.1	1.2	1.9	30.7	30.7	0.0	2.1	5.1	0.0	0.0	17.0
Cycle Q Clear(g_c), s	2.1	39.1	1.2	1.9	30.7	30.7	0.0	2.1	5.1	0.0	0.0	17.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		0.88
Lane Grp Cap(c), veh/h	455	1074	464	391	910	489	121	118	98	312	0	226
V/C Ratio(X)	0.14	0.97	0.10	0.08	0.86	0.86	0.42	0.25	0.59	0.31	0.00	0.86
Avail Cap(c_a), veh/h	455	1111	480	391	1025	552	160	472	393	312	0	413
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)	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	15.9	10.7	33.5	38.4	38.4	55.2	52.3	53.7	43.6	0.0	48.5
Incr Delay (d2), s/veh	0.1	16.5	0.3	0.1	10.3	17.5	4.9	1.1	5.6	0.6	0.0	9.4
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(95%),veh/ln	1.3	11.4	0.7	1.3	17.5	19.8	3.0	1.6	3.3	4.7	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	32.4	11.0	33.5	48.7	55.9	60.1	53.4	59.3	44.2	0.0	58.0
LnGrp LOS	B	C	B	C	D	E	E	D	E	D	A	E
Approach Vol, veh/h		1149			1232			138			292	
Approach Delay, s/veh		30.7			50.7			58.4			53.4	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.2	14.0	36.4	48.5	9.9	25.2	41.7	43.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	36.0	10.0	45.0	8.0	37.0	12.0	43.0
Max Q Clear Time (g_c+I1), s	12.0	7.1	3.9	41.1	2.0	19.0	4.1	32.7
Green Ext Time (p_c), s	0.1	0.3	0.0	2.4	0.1	1.1	0.1	5.4

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

MOVEMENT SUMMARY

Site: 8 [Kitsap Way & Marine Dr (Site Folder: 2044 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Adele Ave (NB)															
3	L2	All MCs	51	3.0	51	3.0	0.211	9.0	LOS A	0.8	21.6	0.66	0.73	0.66	26.2
8	T1	All MCs	29	3.0	29	3.0	0.211	4.3	LOS A	0.8	21.6	0.66	0.73	0.66	23.3
18	R2	All MCs	58	3.0	58	3.0	0.211	4.9	LOS A	0.8	21.6	0.66	0.73	0.66	26.4
Approach			138	3.0	138	3.0	0.211	6.3	LOS A	0.8	21.6	0.66	0.73	0.66	25.6
East: Kitsap Way (WB)															
1	L2	All MCs	32	3.0	32	3.0	0.437	9.4	LOS A	3.1	79.4	0.42	0.43	0.42	26.9
6	T1	All MCs	1157	3.0	1157	3.0	0.437	4.2	LOS A	3.2	81.3	0.40	0.42	0.40	31.7
16	R2	All MCs	43	3.0	43	3.0	0.437	4.3	LOS A	3.2	81.3	0.39	0.41	0.39	27.2
Approach			1232	3.0	1232	3.0	0.437	4.3	LOS A	3.2	81.3	0.40	0.42	0.40	31.3
North: Marine Dr (SB)															
7	L2	All MCs	97	4.0	97	4.0	0.455	10.5	LOS B	2.2	57.0	0.73	0.87	0.87	25.8
4	T1	All MCs	23	4.0	23	4.0	0.455	5.9	LOS A	2.2	57.0	0.73	0.87	0.87	23.0
14	R2	All MCs	172	4.0	172	4.0	0.455	6.5	LOS A	2.2	57.0	0.73	0.87	0.87	26.0
Approach			291	4.0	291	4.0	0.455	7.8	LOS A	2.2	57.0	0.73	0.87	0.87	25.6
West: Kitsap Way (EB)															
5	L2	All MCs	62	4.0	62	4.0	0.420	9.4	LOS A	3.0	78.3	0.45	0.46	0.45	26.8
2	T1	All MCs	1042	4.0	1042	4.0	0.420	4.2	LOS A	3.1	81.0	0.43	0.44	0.43	31.5
12	R2	All MCs	45	4.0	45	4.0	0.420	4.3	LOS A	3.1	81.0	0.42	0.42	0.42	27.1
Approach			1149	4.0	1149	4.0	0.420	4.5	LOS A	3.1	81.0	0.43	0.44	0.43	31.1
All Vehicles			2810	3.5	2810	3.5	0.455	4.8	LOS A	3.2	81.3	0.46	0.49	0.48	30.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 9 [Kitsap Way & Corbett Dr (Site Folder: 2044 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Wilbert Ave (NB)															
3	L2	All MCs	13	22.0	13	22.0	0.068	10.3	LOS B	0.2	6.3	0.59	0.71	0.59	25.7
8	T1	All MCs	12	22.0	12	22.0	0.068	5.3	LOS A	0.2	6.3	0.59	0.71	0.59	23.1
18	R2	All MCs	10	22.0	10	22.0	0.068	6.2	LOS A	0.2	6.3	0.59	0.71	0.59	26.0
Approach			34	22.0	34	22.0	0.068	7.4	LOS A	0.2	6.3	0.59	0.71	0.59	24.8
East: Kitsap Way (WB)															
1	L2	All MCs	30	3.0	30	3.0	0.386	8.8	LOS A	2.7	68.9	0.22	0.35	0.22	27.4
6	T1	All MCs	1134	3.0	1134	3.0	0.386	3.3	LOS A	2.7	69.7	0.21	0.34	0.21	32.4
16	R2	All MCs	9	3.0	9	3.0	0.386	3.5	LOS A	2.7	69.7	0.21	0.33	0.21	27.7
Approach			1173	3.0	1173	3.0	0.386	3.5	LOS A	2.7	69.7	0.22	0.34	0.22	32.2
North: Corbett Dr (SB)															
7	L2	All MCs	24	0.0	24	0.0	0.127	8.4	LOS A	0.5	12.0	0.59	0.68	0.59	26.5
4	T1	All MCs	1	0.0	1	0.0	0.127	3.5	LOS A	0.5	12.0	0.59	0.68	0.59	23.6
14	R2	All MCs	72	0.0	72	0.0	0.127	4.4	LOS A	0.5	12.0	0.59	0.68	0.59	26.7
Approach			97	0.0	97	0.0	0.127	5.4	LOS A	0.5	12.0	0.59	0.68	0.59	26.7
West: Kitsap Way (EB)															
5	L2	All MCs	17	4.0	17	4.0	0.383	8.9	LOS A	2.6	66.1	0.23	0.35	0.23	27.4
2	T1	All MCs	1128	4.0	1128	4.0	0.383	3.4	LOS A	2.6	66.7	0.23	0.34	0.23	32.3
12	R2	All MCs	3	4.0	3	4.0	0.383	3.5	LOS A	2.6	66.7	0.22	0.33	0.22	27.7
Approach			1148	4.0	1148	4.0	0.383	3.5	LOS A	2.6	66.7	0.23	0.34	0.23	32.2
All Vehicles			2453	3.6	2453	3.6	0.386	3.6	LOS A	2.7	69.7	0.24	0.36	0.24	31.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	537	295	228	46	82	517
Future Volume (veh/h)	537	295	228	46	82	517
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	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	1585	1585	1522	1522	1547	1547
Adj Flow Rate, veh/h	559	307	238	48	85	539
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	7	7	5	5
Cap, veh/h	615	613	280	234	397	887
Arrive On Green	0.41	0.41	0.18	0.18	0.27	0.27
Sat Flow, veh/h	1509	1585	1522	1269	1474	1311
Grp Volume(v), veh/h	559	307	238	48	85	539
Grp Sat Flow(s),veh/h/ln	1509	1506	1522	1269	1474	1311
Q Serve(g_s), s	37.5	16.3	16.3	3.5	4.8	24.3
Cycle Q Clear(g_c), s	37.5	16.3	16.3	3.5	4.8	24.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	615	613	280	234	397	887
V/C Ratio(X)	0.91	0.50	0.85	0.21	0.21	0.61
Avail Cap(c_a), veh/h	645	643	424	354	397	887
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	23.8	42.5	37.2	30.5	9.6
Incr Delay (d2), s/veh	17.6	1.4	11.0	0.5	0.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.0	10.1	11.3	2.0	3.2	21.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.6	25.1	53.4	37.8	31.2	11.7
LnGrp LOS	D	C	D	D	C	B
Approach Vol, veh/h		866	286		624	
Approach Delay, s/veh		39.7	50.8		14.3	
Approach LOS		D	D		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	48.8	34.0	24.8
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	46.0	29.0	30.0
Max Q Clear Time (g_c+I1), s	39.5	26.3	18.3
Green Ext Time (p_c), s	4.3	1.4	1.4

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	96	186	156	27	106	75	890	100	169	1093	19
Future Volume (veh/h)	22	96	186	156	27	106	75	890	100	169	1093	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	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	1585	1585	1585	1585	1585	1585	1535	1535	1535	1572	1572	1572
Adj Flow Rate, veh/h	24	104	59	170	29	42	82	967	45	184	1188	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	3	3	3
Cap, veh/h	232	141	119	254	254	213	385	1089	481	420	1295	22
Arrive On Green	0.04	0.09	0.09	0.11	0.16	0.16	0.22	0.37	0.37	0.37	0.57	0.57
Sat Flow, veh/h	1509	1585	1339	1509	1585	1331	1462	2916	1288	1497	3006	51
Grp Volume(v), veh/h	24	104	59	170	29	42	82	967	45	184	590	618
Grp Sat Flow(s),veh/h/ln	1509	1585	1339	1509	1585	1331	1462	1458	1288	1497	1494	1563
Q Serve(g_s), s	2.0	9.0	4.0	13.9	2.2	2.2	0.4	43.5	2.2	12.9	49.8	49.8
Cycle Q Clear(g_c), s	2.0	9.0	4.0	13.9	2.2	2.2	0.4	43.5	2.2	12.9	49.8	49.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	232	141	119	254	254	213	385	1089	481	420	643	673
V/C Ratio(X)	0.10	0.74	0.50	0.67	0.11	0.20	0.21	0.89	0.09	0.44	0.92	0.92
Avail Cap(c_a), veh/h	351	249	210	286	272	228	385	1312	580	420	768	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	53.6	62.2	27.8	48.8	50.3	17.2	42.1	41.1	14.1	35.6	27.7	27.7
Incr Delay (d2), s/veh	0.2	7.4	3.2	5.0	0.2	0.4	0.3	10.8	0.4	0.5	15.5	15.0
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(95%),veh/ln	1.4	7.1	3.8	9.6	1.6	2.4	4.1	24.0	1.9	7.5	24.6	25.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	69.6	31.0	53.8	50.5	17.6	42.4	51.9	14.5	36.2	43.2	42.7
LnGrp LOS	D	E	C	D	D	B	D	D	B	D	D	D
Approach Vol, veh/h		187			241			1094			1392	
Approach Delay, s/veh		55.4			47.1			49.6			42.0	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.2	57.3	21.0	17.4	36.2	65.3	11.0	27.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	16.0	63.0	19.0	22.0	7.0	72.0	17.0	24.0
Max Q Clear Time (g_c+I1), s	14.9	45.5	15.9	11.0	2.4	51.8	4.0	4.2
Green Ext Time (p_c), s	0.1	6.8	0.1	0.5	0.1	8.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
104: SR 3 SB On Ramp/SR 3 SB Off Ramp & Loxie Eagans Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	457	114	194	555	0	0	0	0	154	0	156
Future Volume (veh/h)	0	457	114	194	555	0	0	0	0	154	0	156
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
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	0	1597	1597	1585	1585	0				1585	1585	1585
Adj Flow Rate, veh/h	0	497	0	211	603	0				167	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	2	2	0				2	2	2
Cap, veh/h	0	2175		495	1330	0				327	0	
Arrive On Green	0.00	1.00	0.00	0.72	0.72	0.00				0.22	0.00	0.00
Sat Flow, veh/h	0	3115	1354	624	1928	0				1509	0	1343
Grp Volume(v), veh/h	0	497	0	373	441	0				167	0	0
Grp Sat Flow(s),veh/h/ln	0	1518	1354	1110	1370	0				1509	0	1343
Q Serve(g_s), s	0.0	0.0	0.0	16.5	16.2	0.0				11.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	17.0	16.2	0.0				11.7	0.0	0.0
Prop In Lane	0.00		1.00	0.57		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2175		843	982	0				327	0	
V/C Ratio(X)	0.00	0.23		0.44	0.45	0.00				0.51	0.00	
Avail Cap(c_a), veh/h	0	2175		843	982	0				327	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.96	0.00	0.94	0.94	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	7.2	7.1	0.0				41.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	1.6	1.4	0.0				5.6	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
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	7.0	7.9	0.0				8.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	8.8	8.5	0.0				47.0	0.0	0.0
LnGrp LOS	A	A		A	A	A				D	A	
Approach Vol, veh/h		497			814						167	
Approach Delay, s/veh		0.2			8.6						47.0	
Approach LOS		A			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	90.0	30.0	90.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	86.0	26.0	86.0
Max Q Clear Time (g_c+I1), s	2.0	13.7	19.0
Green Ext Time (p_c), s	3.6	0.6	6.9

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

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

MOVEMENT SUMMARY

Site: 216 [SR 3 & Imperial Way (Site Folder: 2044 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SR 3															
3	L2	All MCs	211	5.0	211	5.0	0.359	15.3	LOS B	1.6	40.3	0.62	0.84	0.65	27.4
8	T1	All MCs	749	5.0	749	5.0	0.897	16.7	LOS D	12.5	325.2	0.94	1.11	1.64	34.4
18	R2	All MCs	115	5.0	115	5.0	0.897	16.3	LOS D	12.5	325.2	0.94	1.11	1.64	26.8
Approach			1075	5.0	1075	5.0	0.897	16.4	LOS B	12.5	325.2	0.87	1.05	1.45	31.8
East: Imperial Way															
1	L2	All MCs	41	0.0	41	0.0	0.236	8.9	LOS A	1.1	27.6	0.73	0.77	0.73	28.8
6	T1	All MCs	12	0.0	12	0.0	0.236	4.4	LOS A	1.1	27.6	0.73	0.77	0.73	26.6
16	R2	All MCs	88	0.0	88	0.0	0.236	5.0	LOS A	1.1	27.6	0.73	0.77	0.73	29.0
Approach			141	0.0	141	0.0	0.236	6.1	LOS A	1.1	27.6	0.73	0.77	0.73	28.7
North: SR 3															
7	L2	All MCs	358	8.0	358	8.0	0.353	12.9	LOS B	2.2	58.7	0.54	0.67	0.54	28.0
4	T1	All MCs	503	8.0	503	8.0	0.466	7.8	LOS A	3.4	90.7	0.57	0.57	0.57	38.3
14	R2	All MCs	78	8.0	78	8.0	0.466	7.4	LOS A	3.4	90.7	0.57	0.57	0.57	34.4
Approach			939	8.0	939	8.0	0.466	9.7	LOS A	3.4	90.7	0.56	0.61	0.56	33.3
West: Imperial Way															
5	L2	All MCs	169	47.0	169	47.0	0.355	27.8	LOS C	1.5	50.2	0.69	0.88	0.77	26.3
2	T1	All MCs	11	47.0	11	47.0	0.248	11.5	LOS B	0.8	28.9	0.68	0.82	0.68	25.4
12	R2	All MCs	74	47.0	74	47.0	0.248	11.7	LOS B	0.8	28.9	0.68	0.82	0.68	27.5
Approach			254	47.0	254	47.0	0.355	22.4	LOS C	1.5	50.2	0.69	0.86	0.74	26.6
All Vehicles			2408	10.3	2408	10.3	0.897	13.8	LOS B	12.5	325.2	0.72	0.84	0.98	31.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	542	481	511	626	0	99	0	291	922	298	12
Future Volume (veh/h)	0	542	481	511	626	0	99	0	291	922	298	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1560	1560	1560	1560	0	1535	1535	1535	1560	1560	1560
Adj Flow Rate, veh/h	0	553	491	521	639	0	101	0	0	941	304	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	4	4	4	4	0	6	6	6	4	4	4
Cap, veh/h	0	1072	583	595	1773	0	119	1		1110	348	14
Arrive On Green	0.00	0.36	0.36	0.07	0.20	0.00	0.08	0.00	0.00	0.35	0.23	0.23
Sat Flow, veh/h	0	3042	1313	2882	3042	0	1462	1535	0	2882	1490	59
Grp Volume(v), veh/h	0	553	491	521	639	0	101	0	0	941	0	316
Grp Sat Flow(s),veh/h/ln	0	1482	1313	1441	1482	0	1462	1535	0	1441	0	1548
Q Serve(g_s), s	0.0	22.0	49.9	26.9	27.9	0.0	10.2	0.0	0.0	47.1	0.0	29.5
Cycle Q Clear(g_c), s	0.0	22.0	49.9	26.9	27.9	0.0	10.2	0.0	0.0	47.1	0.0	29.5
Prop In Lane	0.00		1.00	1.00		0.00	1.00		0.00	1.00		0.04
Lane Grp Cap(c), veh/h	0	1072	583	595	1773	0	119	1		1110	0	362
V/C Ratio(X)	0.00	0.52	0.84	0.88	0.36	0.00	0.85	0.00		0.85	0.00	0.87
Avail Cap(c_a), veh/h	0	1072	583	740	1773	0	302	20		1422	0	387
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.65	0.65	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	37.6	37.1	68.0	35.4	0.0	67.9	0.0	0.0	46.7	0.0	55.4
Incr Delay (d2), s/veh	0.0	1.8	13.8	7.3	0.4	0.0	14.8	0.0	0.0	4.0	0.0	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	13.0	24.9	15.5	15.7	0.0	7.7	0.0	0.0	24.1	0.0	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.3	50.9	75.3	35.8	0.0	82.7	0.0	0.0	50.7	0.0	74.2
LnGrp LOS	A	D	D	E	D	A	F	A		D	A	E
Approach Vol, veh/h		1044			1160			101			1257	
Approach Delay, s/veh		44.8			53.5			82.7			56.6	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	55.8	0.0	35.5	58.8	16.3	39.5		94.2
Change Period (Y+Rc), s	3.0	* 4.5	4.5	4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	69.0	* 2	38.5	25.5	31.0	37.5		68.5
Max Q Clear Time (g_c+I1), s	49.1	0.0	28.9	51.9	12.2	31.5		29.9
Green Ext Time (p_c), s	3.7	0.0	2.1	0.0	0.2	1.0		5.8

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.
Unsignalized Delay for [NBR] 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)	196	1594	68	33	1657	96	76	38	67	102	30	150
Future Volume (veh/h)	196	1594	68	33	1657	96	76	38	67	102	30	150
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		0.99	0.99		0.99	0.99		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	1597	1597	1597	1585	1585	1585	1610	1610	1610	1585	1585	1585
Adj Flow Rate, veh/h	204	1660	71	34	1726	100	79	40	70	106	31	156
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	246	1781	773	46	1933	112	160	284	239	276	37	185
Arrive On Green	0.32	1.00	1.00	0.03	0.46	0.46	0.05	0.18	0.18	0.04	0.16	0.16
Sat Flow, veh/h	1521	3035	1318	1509	4182	242	1533	1610	1355	1509	226	1137
Grp Volume(v), veh/h	204	1660	71	34	1190	636	79	40	70	106	0	187
Grp Sat Flow(s),veh/h/ln	1521	1518	1318	1509	1442	1540	1533	1610	1355	1509	0	1363
Q Serve(g_s), s	18.6	0.0	0.0	3.4	56.6	56.8	6.4	3.1	6.7	6.0	0.0	20.0
Cycle Q Clear(g_c), s	18.6	0.0	0.0	3.4	56.6	56.8	6.4	3.1	6.7	6.0	0.0	20.0
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	246	1781	773	46	1333	712	160	284	239	276	0	222
V/C Ratio(X)	0.83	0.93	0.09	0.74	0.89	0.89	0.49	0.14	0.29	0.38	0.00	0.84
Avail Cap(c_a), veh/h	246	1781	773	91	1423	760	160	360	303	276	0	286
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)	0.22	0.22	0.22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.8	0.0	0.0	72.1	36.9	37.0	50.0	52.2	53.7	51.8	0.0	60.9
Incr Delay (d2), s/veh	5.6	2.8	0.1	20.9	9.4	16.0	4.9	0.2	0.7	0.9	0.0	16.1
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(95%),veh/ln	8.5	1.2	0.0	2.8	28.8	32.1	4.9	2.4	4.2	6.5	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	2.8	0.1	93.0	46.3	53.0	55.0	52.4	54.3	52.7	0.0	77.1
LnGrp LOS	D	A	A	F	D	D	D	D	D	D	A	E
Approach Vol, veh/h		1935			1860			189			293	
Approach Delay, s/veh		8.1			49.5			54.2			68.2	
Approach LOS		A			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	32.9	10.5	94.5	14.0	30.9	30.8	74.3
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	6.5	5.0
Max Green Setting (Gmax), s	6.0	33.5	9.0	* 78	8.0	31.5	12.5	74.0
Max Q Clear Time (g_c+I1), s	8.0	8.7	5.4	2.0	8.4	22.0	20.6	58.8
Green Ext Time (p_c), s	0.0	0.4	0.0	23.6	0.0	0.7	0.0	10.5

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Notes

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

MOVEMENT SUMMARY

Site: 8 [Kitsap Way & Marine Dr (Site Folder: 2044 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Adele Ave (NB)															
3	L2	All MCs	79	0.0	79	0.0	0.427	13.1	LOS B	2.3	56.6	0.85	0.97	1.00	25.0
8	T1	All MCs	40	0.0	40	0.0	0.427	8.4	LOS A	2.3	56.6	0.85	0.97	1.00	22.4
18	R2	All MCs	70	0.0	70	0.0	0.427	9.0	LOS A	2.3	56.6	0.85	0.97	1.00	25.2
Approach			189	0.0	189	0.0	0.427	10.6	LOS B	2.3	56.6	0.85	0.97	1.00	24.5
East: Kitsap Way (WB)															
1	L2	All MCs	34	2.0	34	2.0	0.746	13.4	LOS B	9.5	242.5	0.83	0.74	0.99	26.1
6	T1	All MCs	1726	2.0	1726	2.0	0.746	7.6	LOS A	9.6	242.9	0.81	0.71	0.94	30.6
16	R2	All MCs	100	2.0	100	2.0	0.746	7.2	LOS A	9.6	242.9	0.79	0.69	0.90	26.4
Approach			1860	2.0	1860	2.0	0.746	7.7	LOS A	9.6	242.9	0.81	0.71	0.94	30.2
North: Marine Dr (SB)															
7	L2	All MCs	106	2.0	106	2.0	0.737	18.5	LOS B	4.9	123.6	0.92	1.16	1.39	23.6
4	T1	All MCs	31	2.0	31	2.0	0.737	13.8	LOS B	4.9	123.6	0.92	1.16	1.39	21.3
14	R2	All MCs	156	2.0	156	2.0	0.737	14.4	LOS B	4.9	123.6	0.92	1.16	1.39	23.8
Approach			294	2.0	294	2.0	0.737	15.8	LOS B	4.9	123.6	0.92	1.16	1.39	23.4
West: Kitsap Way (EB)															
5	L2	All MCs	204	1.0	204	1.0	0.698	10.0	LOS A	7.6	192.3	0.69	0.54	0.69	26.3
2	T1	All MCs	1660	1.0	1660	1.0	0.698	4.7	LOS A	7.9	198.2	0.66	0.50	0.66	30.9
12	R2	All MCs	71	1.0	71	1.0	0.698	4.8	LOS A	7.9	198.2	0.64	0.48	0.64	26.7
Approach			1935	1.0	1935	1.0	0.698	5.3	LOS A	7.9	198.2	0.66	0.51	0.66	30.2
All Vehicles			4278	1.5	4278	1.5	0.746	7.3	LOS A	9.6	242.9	0.75	0.66	0.85	29.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 9 [Kitsap Way & Corbett Dr (Site Folder: 2044 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Wilbert Ave (NB)															
3	L2	All MCs	68	0.0	68	0.0	0.320	11.2	LOS B	1.5	37.2	0.76	0.86	0.82	25.5
8	T1	All MCs	1	0.0	1	0.0	0.320	6.3	LOS A	1.5	37.2	0.76	0.86	0.82	22.8
18	R2	All MCs	113	0.0	113	0.0	0.320	7.2	LOS A	1.5	37.2	0.76	0.86	0.82	25.7
Approach			182	0.0	182	0.0	0.320	8.7	LOS A	1.5	37.2	0.76	0.86	0.82	25.6
East: Kitsap Way (WB)															
1	L2	All MCs	55	2.0	55	2.0	0.615	9.8	LOS A	5.5	140.0	0.53	0.46	0.53	26.8
6	T1	All MCs	1671	2.0	1671	2.0	0.615	4.2	LOS A	5.6	142.4	0.51	0.44	0.51	31.5
16	R2	All MCs	18	2.0	18	2.0	0.615	4.2	LOS A	5.6	142.4	0.50	0.43	0.50	27.1
Approach			1743	2.0	1743	2.0	0.615	4.4	LOS A	5.6	142.4	0.51	0.44	0.51	31.3
North: Corbett Dr (SB)															
7	L2	All MCs	9	2.0	9	2.0	0.254	10.9	LOS B	1.1	28.6	0.77	0.82	0.77	26.0
4	T1	All MCs	1	2.0	1	2.0	0.254	6.0	LOS A	1.1	28.6	0.77	0.82	0.77	23.1
14	R2	All MCs	114	2.0	114	2.0	0.254	6.9	LOS A	1.1	28.6	0.77	0.82	0.77	26.2
Approach			125	2.0	125	2.0	0.254	7.2	LOS A	1.1	28.6	0.77	0.82	0.77	26.1
West: Kitsap Way (EB)															
5	L2	All MCs	85	1.0	85	1.0	0.582	9.0	LOS A	5.5	139.1	0.36	0.38	0.36	27.1
2	T1	All MCs	1677	1.0	1677	1.0	0.582	3.5	LOS A	5.6	139.9	0.34	0.37	0.34	32.0
12	R2	All MCs	18	1.0	18	1.0	0.582	3.6	LOS A	5.6	139.9	0.33	0.35	0.33	27.5
Approach			1779	1.0	1779	1.0	0.582	3.8	LOS A	5.6	139.9	0.34	0.37	0.34	31.7
All Vehicles			3830	1.4	3830	1.4	0.615	4.4	LOS A	5.6	142.4	0.45	0.44	0.46	30.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	467	484	514	123	143	355
Future Volume (veh/h)	467	484	514	123	143	355
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	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	1585	1585	1597	1597	1560	1560
Adj Flow Rate, veh/h	497	515	547	131	152	378
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	1	1	4	4
Cap, veh/h	518	586	547	678	248	704
Arrive On Green	0.37	0.37	0.34	0.34	0.17	0.17
Sat Flow, veh/h	1416	1683	1597	1322	1485	1322
Grp Volume(v), veh/h	531	481	547	131	152	378
Grp Sat Flow(s),veh/h/ln	1514	1506	1597	1322	1485	1322
Q Serve(g_s), s	41.1	35.6	41.0	6.5	11.4	20.0
Cycle Q Clear(g_c), s	41.1	35.6	41.0	6.5	11.4	20.0
Prop In Lane	0.94			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	554	551	547	678	248	704
V/C Ratio(X)	0.96	0.87	1.00	0.19	0.61	0.54
Avail Cap(c_a), veh/h	556	553	547	678	248	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	35.4	39.4	16.0	46.3	17.8
Incr Delay (d2), s/veh	28.5	15.2	38.7	0.2	7.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	26.7	21.8	29.5	5.1	8.3	17.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.7	50.7	78.1	16.2	53.9	19.6
LnGrp LOS	E	D	F	B	D	B
Approach Vol, veh/h		1012	678		530	
Approach Delay, s/veh		58.5	66.1		29.4	
Approach LOS		E	E		C	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	48.8	25.0	46.0
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	44.0	20.0	41.0
Max Q Clear Time (g_c+I1), s	43.1	22.0	43.0
Green Ext Time (p_c), s	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	65	147	156	73	84	247	1785	155	238	1054	39
Future Volume (veh/h)	54	65	147	156	73	84	247	1785	155	238	1054	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	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	1585	1585	1585	1597	1597	1597	1585	1585	1585	1572	1572	1572
Adj Flow Rate, veh/h	56	67	9	161	75	5	255	1840	108	245	1087	38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	3	3	3
Cap, veh/h	154	126	498	165	127	260	519	1800	864	170	1236	43
Arrive On Green	0.04	0.08	0.08	0.05	0.08	0.08	0.29	0.60	0.60	0.11	0.42	0.42
Sat Flow, veh/h	1509	1585	1328	1521	1597	1338	1509	3011	1342	1497	2944	103
Grp Volume(v), veh/h	56	67	9	161	75	5	255	1840	108	245	551	574
Grp Sat Flow(s),veh/h/ln	1509	1585	1328	1521	1597	1338	1509	1506	1342	1497	1494	1553
Q Serve(g_s), s	4.8	5.7	0.1	6.5	6.4	0.0	11.4	84.4	1.5	16.0	47.9	48.0
Cycle Q Clear(g_c), s	4.8	5.7	0.1	6.5	6.4	0.0	11.4	84.4	1.5	16.0	47.9	48.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	154	126	498	165	127	260	519	1800	864	170	627	652
V/C Ratio(X)	0.36	0.53	0.02	0.98	0.59	0.02	0.49	1.02	0.12	1.44	0.88	0.88
Avail Cap(c_a), veh/h	154	349	684	165	352	448	519	1800	864	170	883	918
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	56.6	62.4	15.7	63.5	62.7	29.6	37.2	28.4	2.9	62.6	37.7	37.7
Incr Delay (d2), s/veh	1.4	3.4	0.0	62.7	4.3	0.0	0.9	26.9	0.1	229.6	7.6	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	4.4	0.3	10.0	5.0	0.2	11.5	46.2	1.1	26.9	25.8	26.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	65.8	15.7	126.2	67.0	29.6	38.1	55.3	3.0	292.1	45.2	45.0
LnGrp LOS	E	E	B	F	E	C	D	F	A	F	D	D
Approach Vol, veh/h		132			241			2203			1370	
Approach Delay, s/veh		59.1			105.8			50.8			89.3	
Approach LOS		E			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	90.4	12.0	16.8	47.2	65.2	12.0	16.8
Change Period (Y+Rc), s	6.0	* 6	5.5	5.5	6.0	6.0	6.0	5.5
Max Green Setting (Gmax), s	16.0	* 84	6.5	31.1	16.0	83.4	6.0	31.1
Max Q Clear Time (g_c+I1), s	18.0	86.4	8.5	7.7	13.4	50.0	6.8	8.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.2	9.3	0.0	0.3

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	456	358	373	746	0	0	0	0	46	0	119
Future Volume (veh/h)	0	456	358	373	746	0	0	0	0	46	0	119
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
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	0	1560	1560	1572	1572	0				1560	1560	1560
Adj Flow Rate, veh/h	0	490	0	401	802	0				49	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	4	4	3	3	0				4	4	4
Cap, veh/h	0	2572		657	1301	0				73	0	
Arrive On Green	0.00	1.00	0.00	1.00	1.00	0.00				0.05	0.00	0.00
Sat Flow, veh/h	0	3042	1322	693	1571	0				1485	0	1322
Grp Volume(v), veh/h	0	490	0	482	721	0				49	0	0
Grp Sat Flow(s),veh/h/ln	0	1482	1322	834	1359	0				1485	0	1322
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				3.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				3.9	0.0	0.0
Prop In Lane	0.00		1.00	0.83		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2572		778	1180	0				73	0	
V/C Ratio(X)	0.00	0.19		0.62	0.61	0.00				0.67	0.00	
Avail Cap(c_a), veh/h	0	2572		778	1180	0				421	0	
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.84	0.00	0.55	0.55	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				56.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	2.0	1.3	0.0				10.3	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
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.8	0.8	0.0				3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	0.0	2.0	1.3	0.0				66.5	0.0	0.0
LnGrp LOS	A	A		A	A	A				E	A	
Approach Vol, veh/h		490			1203						49	
Approach Delay, s/veh		0.1			1.6						66.5	
Approach LOS		A			A						E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	109.1	10.9	109.1
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	76.0	34.0	76.0
Max Q Clear Time (g_c+I1), s	2.0	5.9	2.0
Green Ext Time (p_c), s	3.6	0.2	13.8

Intersection Summary	
HCM 6th Ctrl Delay	3.0
HCM 6th LOS	A

Notes

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

MOVEMENT SUMMARY

Site: 216 [SR 3 & Imperial Way (Site Folder: 2044 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
Vehicle Movement Performance															
South: SR 3															
3	L2	All MCs	53	8.0	53	8.0	0.112	15.5	LOS B	0.5	12.2	0.63	0.84	0.63	27.4
8	T1	All MCs	650	8.0	650	8.0	0.856	17.3	LOS D	10.4	276.3	0.97	1.08	1.60	33.7
18	R2	All MCs	14	8.0	14	8.0	0.856	17.0	LOS D	10.4	276.3	0.97	1.08	1.60	26.6
Approach			717	8.0	717	8.0	0.856	17.2	LOS B	10.4	276.3	0.95	1.06	1.53	33.0
East: Imperial Way															
1	L2	All MCs	100	4.0	100	4.0	0.750	14.1	LOS B	5.1	131.0	0.86	1.11	1.30	26.8
6	T1	All MCs	36	4.0	36	4.0	0.750	9.5	LOS A	5.1	131.0	0.86	1.11	1.30	25.1
16	R2	All MCs	301	4.0	301	4.0	0.750	10.2	LOS B	5.1	131.0	0.86	1.11	1.30	27.0
Approach			437	4.0	437	4.0	0.750	11.0	LOS B	5.1	131.0	0.86	1.11	1.30	26.8
North: SR 3															
7	L2	All MCs	118	4.0	118	4.0	0.126	12.2	LOS B	0.7	17.1	0.41	0.66	0.41	28.2
4	T1	All MCs	729	4.0	729	4.0	0.533	7.3	LOS A	4.5	115.5	0.54	0.54	0.54	38.9
14	R2	All MCs	3	4.0	3	4.0	0.533	6.9	LOS A	4.5	115.5	0.54	0.54	0.54	34.5
Approach			851	4.0	851	4.0	0.533	8.0	LOS A	4.5	115.5	0.52	0.55	0.52	36.9
West: Imperial Way															
5	L2	All MCs	593	3.0	593	3.0	0.745	34.7	LOS C	7.5	192.7	0.91	1.07	1.40	29.2
2	T1	All MCs	29	3.0	29	3.0	0.577	11.5	LOS B	4.0	101.9	0.82	0.92	1.08	25.4
12	R2	All MCs	333	3.0	333	3.0	0.577	11.5	LOS B	4.0	101.9	0.82	0.92	1.08	31.9
Approach			955	3.0	955	3.0	0.745	25.9	LOS C	7.5	192.7	0.88	1.01	1.28	29.9
All Vehicles			2961	4.6	2961	4.6	0.856	16.5	LOS B	10.4	276.3	0.79	0.91	1.13	31.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: TRANSPORTATION SOLUTIONS, INC. | Licence: NETWORK / 1PC | Processed: Monday, July 1, 2024 11:00:28 AM
Project: C:\Users\Daniel Hodun\TSI Dropbox\Daniel Hodun\TSI Projects\2023\223053 City of Bremerton 2024 Active Transportation Plan #554-1896-192\LOS\2044 Mitigated.sip9

Attachment D. Cost Estimate Methodology and Spreadsheet

Parametrix
let's create tomorrow, together

Technical Memorandum

DATE:	June 05, 2024
TO:	Vicki Grover
FROM:	Dan Harris & Jo Johnson
SUBJECT:	Cost Estimate Methodology
CC:	Vicki Grover, Gunnar Fridriksson
PROJECT NUMBER:	5541896192
PROJECT NAME:	City of Bremerton Transportation Element Update

Introduction

This memorandum documents assumptions for the development of the planning-level cost estimates, which are based on preliminary design concepts and engineering assumptions from, similar projects. This cost-estimating effort will be applied to all capital transportation projects, including new projects identified through transportation analysis. The projects will be divided into a six-year and 20-year project list. Small-scale improvements and maintenance projects that are part of broader capital programs such as regular roadway or sidewalk maintenance and sidewalk completion programs will not be included in conceptual design and costs estimates.

Conceptual Design:

Conceptual designs will be developed using a simple pdf layout and will not include survey data, topographic details, or field measurements.

- Develop simple pdf sketches of suggested improvements that come from the transportation evaluation, and include intersections that meet City concurrency
- Identify major design elements for the project based on the sketch layout and develop a list of design assumptions to support the cost estimate
- Determine if there are potential right of way needs using Kitsap County Parcel Search data and available aerial imagery.

Engineering Opinion of Probable Cost

The engineering team will develop a planning level estimate of probable cost from high-level conceptual design for potential transportation capital projects (described in the previous section). Opinions of probable cost will rely on the following assumptions.

- Opinions of probably cost will use available data from a pdf layout (if needed for roadway improvement alternatives) and estimate quantities for key design elements of the desired improvements.
- Itemize the key design elements and quantities in the Planning Level Cost Estimate (PLCE) spreadsheet. Add new cost items to the PLCE based on alternatives identified.
- The latest costs in the PLCE spreadsheet are based on unit bid tabs from recently bid projects completed by the City of Bremerton.

- Revenue projections will be based on funds for transportation included in the 2024 – 2029 six-year Capital Improvement Plan. Projects are matched to current funding, therefore, conceptual cost estimates will not include escalation to a future construction year.
- Total estimated project costs will be tabulated based on available information.
- A percentage of total construction cost provided by City staff was used to estimate design, right of way services, and construction engineering costs.
- The design, right of way services, and construction engineering costs will be added to the overall project cost to represent the base of the PLCE.
- State taxes will not be included in the estimates
- A contingency will be assigned based on the perceived level of risk

The planning level cost estimate template and unit cost sheets are included in the attached PLCE spreadsheet.

COST ESTIMATE

Input values in BOLD BLUE

PROJECT TITLE		DESCRIPTION OF WORK & ASSUMPTIONS
(TEXT)		***(TEXT)***
PROJECT NUMBER	***123-4567***	
YEAR OF COST ESTIMATE	***2024***	
YEAR OF CONSTRUCTION	***2025***	
INFLATION PER YEAR	***3.25%***	

PROJECT COST SUMMARY BREAKDOWN

CONSTRUCTION COSTS

ITEMS			
DRAINAGE, STORMWATER DETENTION, AND TREATMENT		$	390,000
GRADING / PREPARATION		$	100,000
STRUCTURES AND WALLS		$	10,000
CURBS, ASPHALT, AND SURFACING		$	10,000
TRAFFIC SERVICES AND SAFETY		$	690,000
ENVIRONMENTAL / ROADSIDE RESTORATION		$	10,000
CONSTRUCTION SUB-TOTAL		**$**	**1,170,000**
OTHER CONSTRUCTION COSTS			
MOBILIZATION	10%	$	120,000
TEMPORARY TRAFFIC CONTROL	10%	$	120,000
TEMP EROSION AND SEDIMENT CONTROL	3%	$	40,000
PERMANENT SIGNING	2%	$	30,000
UTILITY RELOCATION	1%	$	20,000
CONSTRUCTION TOTAL		**$**	**1,470,000**

ADMINISTRATIVE COSTS

15%	**PRELIMINARY ENGINEERING**	$	230,000
15%	**CONSTRUCTION MANAGEMENT**	$	230,000
3%	**RIGHT OF WAY SERVICES**	$	50,000
3%	**CITY STAFF TIME**	$	50,000
30%	**CONSTRUCTION CONTINGENCY**	$	450,000
	RIGHT OF WAY ACQUISITION	$	10,000

TOTAL PROJECT COST

YEAR OF COST ESTIMATE	2024
YEAR OF CONSTRUCTION	2025
INFLATION PER YEAR:	3.25%

PROJECT COST IN 2025 DOLLARS

$2,570,925

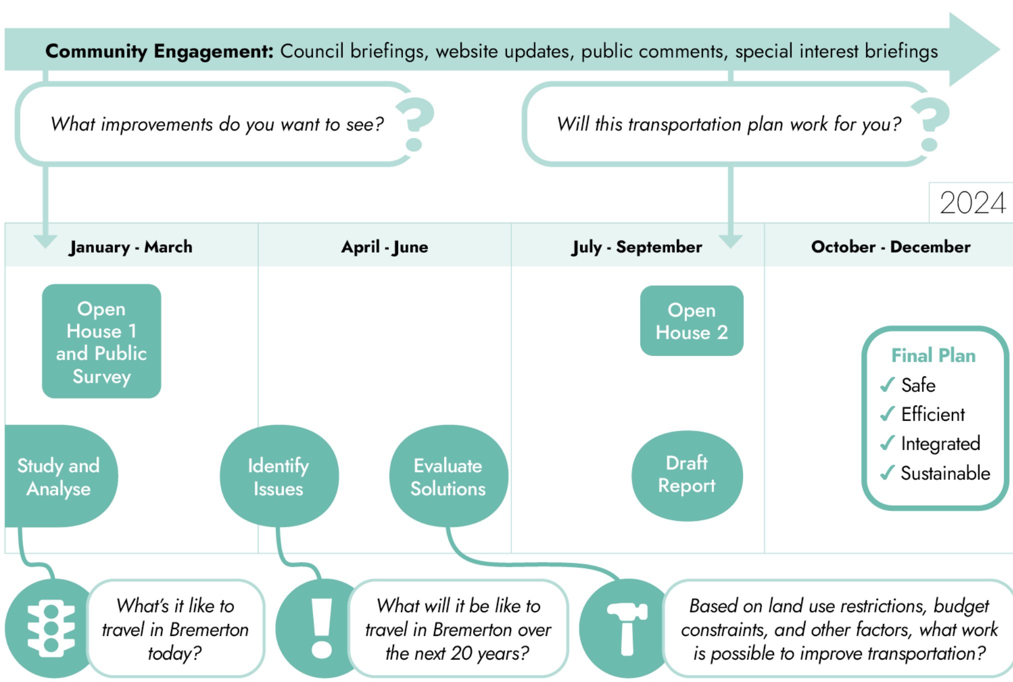
Attachment E. Summary of Public Engagement and Public Survey Report

City of Bremerton Transportation Plans Update
Comprehensive Plan and Active Transportation

Engagement Summary | November 18, 2024

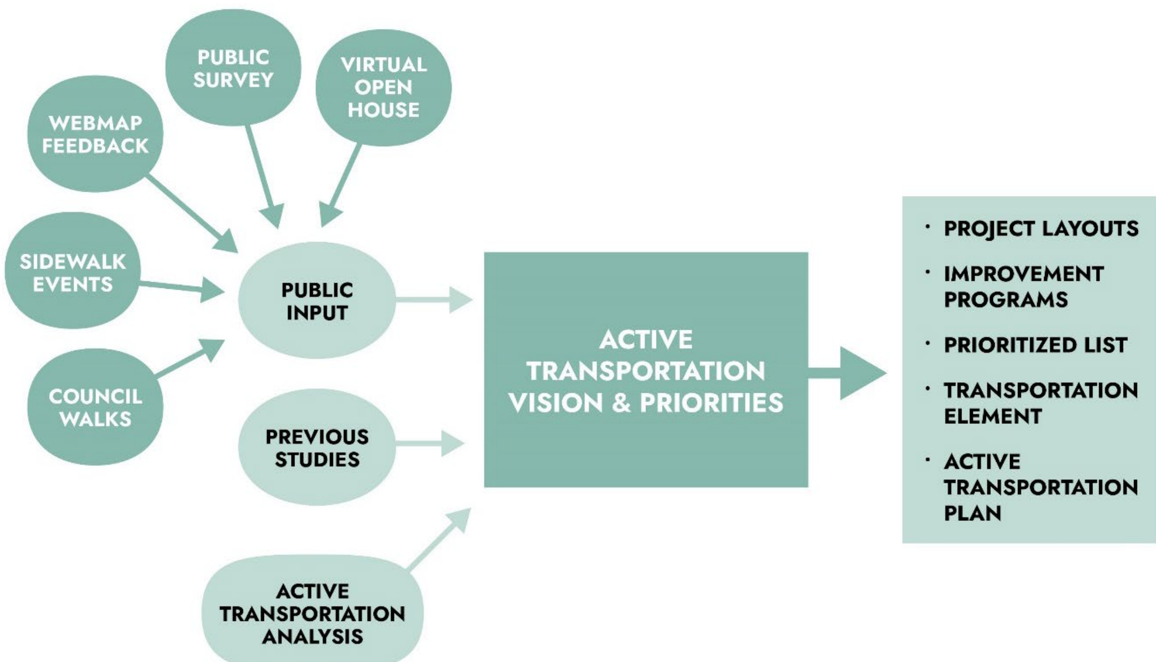
OVERVIEW

The City of Bremerton is updating its Comprehensive Plan to guide how the city grows and develops. The city started this work in late 2023. Part of this work is updating the city's transportation plans, both the Transportation Element of the Comprehensive Plan and the Active Transportation Plan to accommodate the city's projected 46 percent population growth over the next 20 years. The city's Transportation Element goal is to provide a transportation road map to maintain a safe, efficient, and integrated multimodal transportation system. Multimodal refers to all modes of transportation: vehicles, transit, bicycles, and pedestrians. Bremerton's Active Transportation Plan, formally known as the 2007 Non-Motorized Transportation Plan, focuses specifically on non-motorized transportation such as bicycle and walking routes. The city originally adopted the Non-Motorized Transportation Plan in 2007 and is updating it at the same time as the Transportation Element so these plans will work together.



This chart, shared during the first open house, gives a high-level overview of how the team incorporated public input into the transport plans development process. Note, the team updated the project schedule since this graphic was published with the creation of the final plan scheduled for early 2025.

The transportation team engaged the public during the creation of these plans throughout the year-long process. The city engaged with the Bremerton community at sidewalk events, council walks, through a transportation survey, open houses and through web map feedback collected on Bremerton's Comprehensive Plan Transportation Element webpage. The team also reached out directly to community-based organizations for input. The transportation team incorporated this feedback into the planning efforts. This report summarizes the engagement efforts by the city.



This chart, shared during the second open house, shows all the different ways Bremerton engaged the public in transportation planning.

ENGAGEMENT ACTIVITIES

An important part of developing the Transportation Element and Active Transportation Plan is feedback from those who live, work and travel throughout Bremerton. The transportation team sought input from the public through a variety of platforms and opportunities as outlined in the city's Public Participation Plan (PPP) The PPP includes standard processes and procedures the team should use to reach the public and facilitate feedback on the transportation plans.

The team engaged the public by sending a survey (Jan. 18 – Feb. 20, 2024), hosting two virtual open houses (Jan. 19 – Feb. 15, 2024, and Oct. 2 – 14, 2024) and an in-person open house (Oct. 8, 2024). The team also reached out to community-based organizations, attended council walks and sidewalk events throughout the process. City staff advertised these opportunities to provide input on the [Transportation webpage] and on the following platforms:

- City website
- City email list
- Facebook
- Twitter

Survey and mailer

To recruit survey respondents, researchers working with the transportation team mailed invitations to a statistically valid, random sample of 5,000 households with Bremerton addresses (See appendix B for recruitment materials).

In addition, the city promoted the survey to Bremerton residents through the following channels:

- The city's Transportation Plan website
- Social media posts by the mayor and PW
- The mayor's email listserv
- Flyers posted throughout the city
- Online open house
- Bremerton First Friday Art Walk event in Charleston and Downtown
- Partnership with Community-based organizations:
    - Kitsap Mesa Redonda
    - Kitsap County Veterans Assistance Program
    - Kitsap County Parent Coalition
    - The Conduit Network

Survey responses, by recruitment method

Recruitment method	Count	Percent
Postcard	321	53%
Web link	51	8%
Social media	70	12%
Bremerton website	163	27%
Total	605	100%

Note "Bremerton website" means the link provided with online Open House 1.

The online survey fielded from Jan. 18 to Feb. 15, 2024, in English. A total of 605 people took the survey. The response rate was 12.7%, and the margin of error was +/- 4%. Overall, many participants shared their thoughts and ideas on how to improve transportation in Bremerton. The key findings were:

- Bremerton should improve transportation infrastructure. Respondents thought the city should aim improvements at reducing traffic congestion and speeding on city streets and roads, addressing road maintenance issues, and improving parking management.
    - Respondents identified traffic congestion (64%), aggressive or reckless driving (64%), poor road conditions (53%), or wait times at lights (51%) as top traffic issues in Bremerton.

    - Respondents thought adaptive or "smart" traffic signals (67%) would improve traffic conditions.

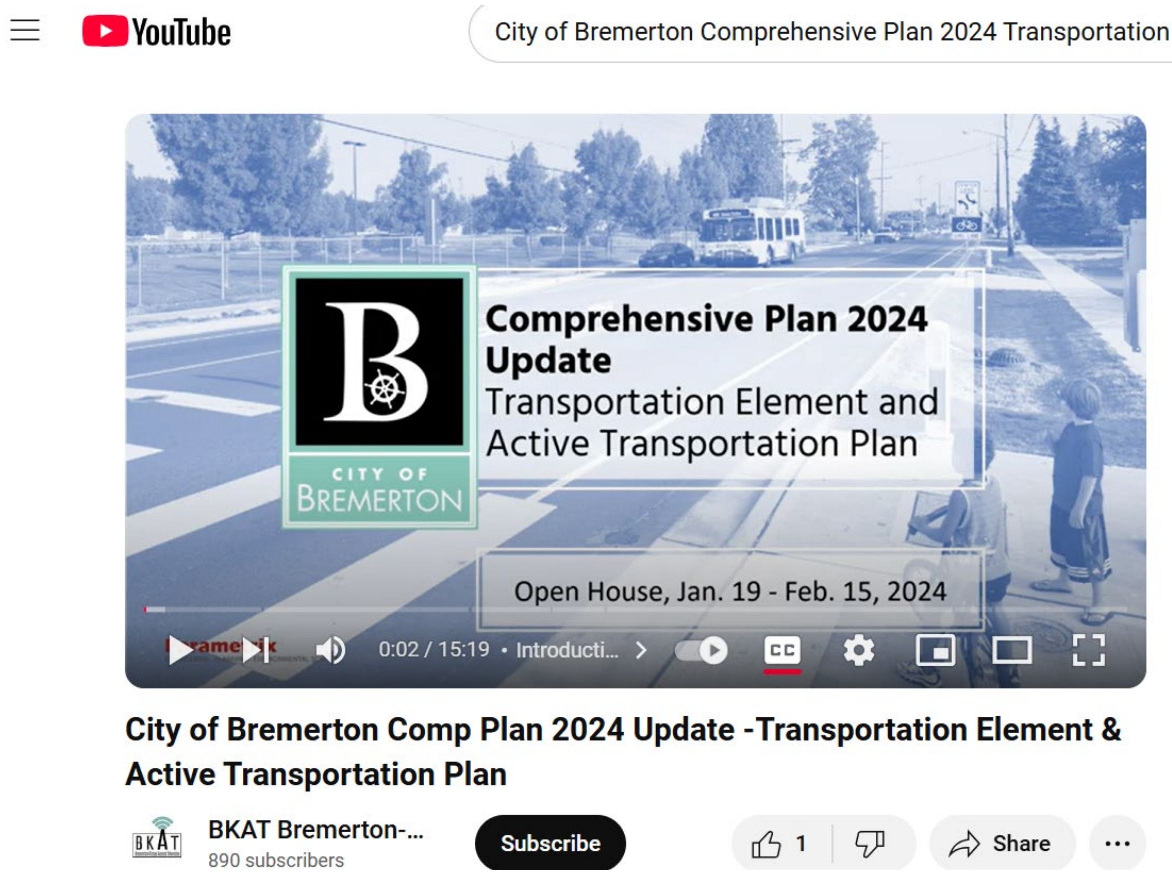
- Bremerton should reduce car dependency by connecting downtown through frequent, low-cost transit service, update zoning to develop walkable neighborhoods, and coordinate with major employers to reduce the number of cars on roadways during peak hours. Bremerton should increase transit services for the bus and ferry.
    - Top **barriers** to transit use:
        - Riding the bus takes too long (60%)
        - Taking the ferry is a challenge when routes are not frequent enough (89%) or the ferry is unreliable (83%)
    - Top **opportunities** to more transit ridership:
        - Riding the bus – more frequent service (29%)
        - Using the ferry – more frequent service (64%)
        - Vanpooling – free ride home for emergencies (14%), help establishing vanpool (13%), or learning more about the vanpool program (12%)
        - Carpooling – help establishing a carpool (18%), free ride home for emergencies (16%), or free or reserved parking (16%)

- Bremerton should improve bicycle and pedestrian infrastructure.
    - Top **barriers** to active transportation use:
        - Biking with incomplete or no bicycle lanes (93%) and navigating dangerous driver behavior (83%)
        - Walking with incomplete or no sidewalks (76%)
    - Top **opportunities** to active transportation:
        - Biking – new (42%) or improved (39%) bike lanes
        - Walking – new (55%) or improved (54%) sidewalks and crosswalks

Some participants also wanted the city to increase monitoring or control over transportation systems, including more enforcement. See the full survey report for more information. The full Survey Report is included in Attachment E of the Transportation Element Appendix.

Online open house 1 (https://www.youtube.com/watch?v=gSvO9TpLioQ)

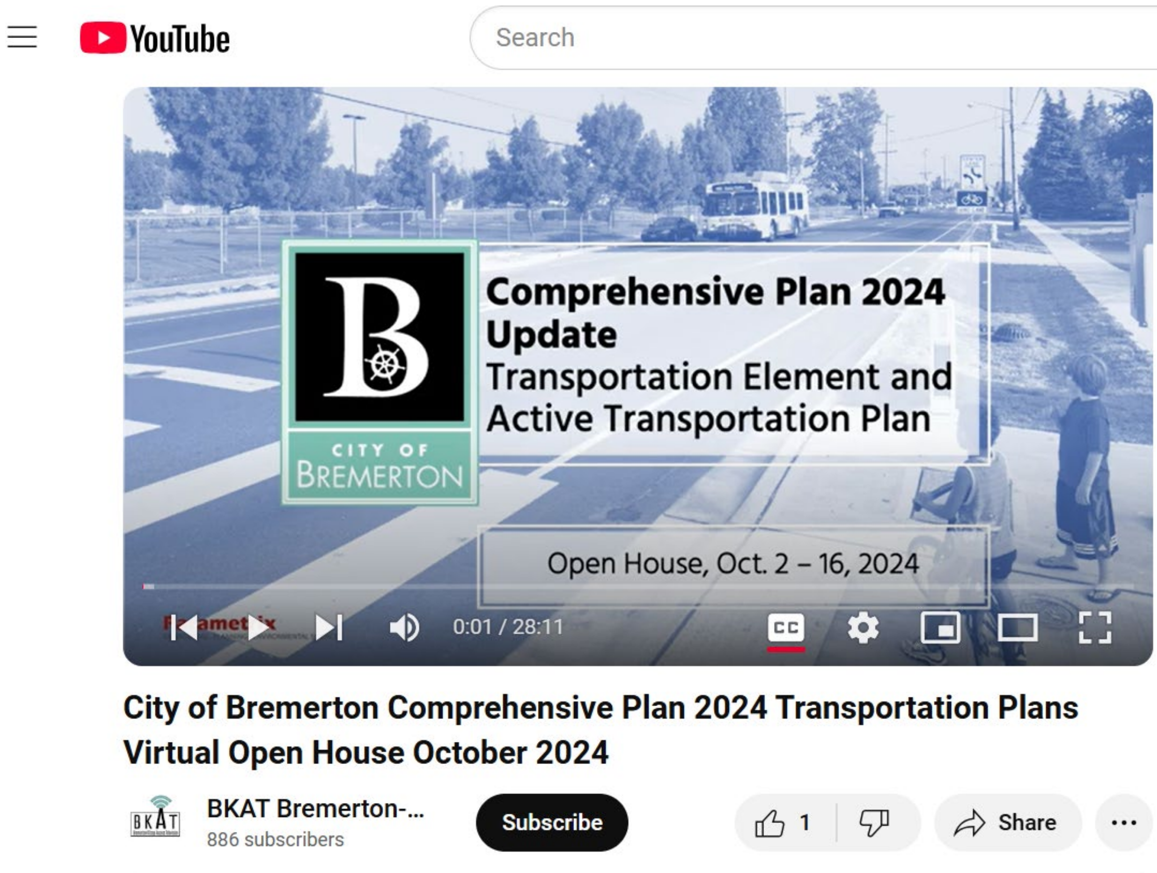
The City of Bremerton hosted a virtual open house (a pre-recorded narrated presentation via BKAT productions) to introduce the overall Comprehensive Plan update and the process to update the Transportation Element of the Comprehensive Plan and the City's Active Transportation Plan. The city posted the open house video on the Comprehensive Plan Transportation Element webpage from January 19, 2024, to February 15, 2024. The open house narrative explained how the community can be involved in shaping the future of Bremerton's transportation by submitting comments and participating in the survey. The City's project manager, Vicki Grover, shared the study timeline, including future outreach milestones, and encouraged attendees to participate in the public survey and visit the project website for updates.



As of November 7, 2024, 104 people viewed the online open house 1 video presentation posted on the Bremerton Kitsap YouTube channel. The team did not record any direct feedback from open house 1. While the project team provided contact information in the materials, they directed participants to share their feedback as part of the public survey. A total of 51 survey participants (8 percent of all respondents) shared feedback from the link posted with open house 1 on the webpage.

Online open house 2 (https://youtu.be/oj6eAL2cWHs?si=8Hda-kwxybcsoAPH)

The City of Bremerton hosted another virtual open house (a pre-recorded narrated presentation via BKAT productions) to update the Bremerton about progress on the transportation plans. The team posted the open house video on the Comprehensive Plan Transportation Element webpage from October 2 to 16, 2024. The City's Project Manager, Vicki Grover, narrated the presentation. First, Vicki shared a brief overview of the transportation plans the city is updating, then how the city evaluates what projects to include in the plans, feedback the city heard from the community through the process and what data was collected for both the Transportation Element of Bremerton's Comprehensive Plan update and the Active Transportation Plan. Finally, Vicki concluded with how the community can provide additional input and stay informed as the city finishes developing the plans.

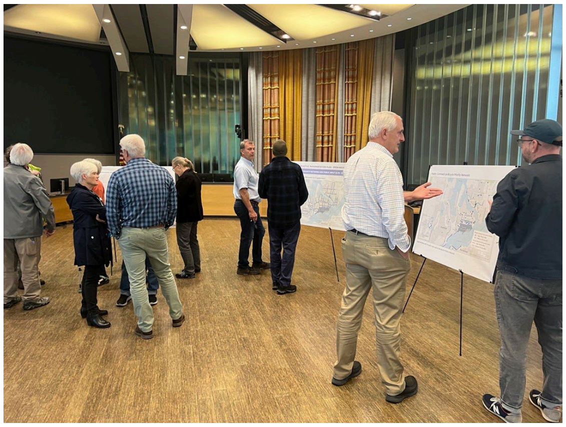
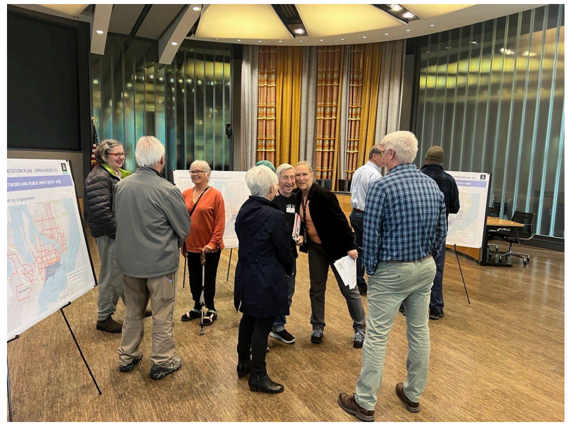


As of November 7, 2024, 117 people viewed the online open house 2 video presentation posted on the Bremerton Kitsap YouTube channel. Ten comments were received following the launch of the open house. Respondents sent six comments to the Comprehensive Plan email address and four directly to the project team. Comments received focused on prioritizing bike routes and protected bike lanes, ensuring safety was highlighted in the plans for bicyclists and pedestrians and specific locations community members would like to see improvements.

In-person open house

Bremerton hosted an in-person open house on Tuesday, Oct. 8, 2024, at the Norm Dicks Council Chambers. The team hosted the open house from 5 to 7 p.m. Ten community members attended the open house. The following city representatives hosted the meeting:

- Garrett Jackson, Planning Manager
- Gunnar Fridriksson, Managing Engineer
- Ned Lever, City Engineer
- Ryan Nash, Project Assistant Transportation Engineering
- Tom Knuckey, Director of Public Works & Utilities
- Vicki Grover, Project Manager

Attendees gather at the Norm Dicks Council Chambers for the City of Bremerton Transportation Plans Open House on Oct. 8, 2024.

Community-based organizations

The city of Bremerton reached out to various community-based organizations to engage historically marginalized communities in the city in the update of the transportation plans. Vicki Grover, project manager, reached out between Jan. 4 - 10, 2024. She received three responses and engaged with the following organizations:

- **Conduit Network, Marwan Cameron, Feb. 15, 2024: Marwan** explained how difficult it was for individuals the organization assists to use public transportation services when making doctor visits, being released from jail, and coming out of living on the street. This organization eventually purchased their own vehicles for transporting individuals in need of their assistance.
- **Kitsap County Parent Coalition, Melia Hughes, Jan. 30, 2024:** Melia provided the perspective of her clients that public transportation is important for getting kids to after school programs or to appointments that parents are not able to attend due to work commitments.
- **Department of Humans Services Veteran Program, Rick Becker, Feb. 13, 2024:** Rick shared what the veteran program does, and that transportation is an element of the services they help coordinate for veterans.

Community events

The city of Bremerton Public Works staff attended the following events with information about the transportation planning effort:

- St. Patrick's Day Parade, March 11, 2023; Vicki Grover attended with DCD.
- Island Fest, August 19, 2023; Vicki Grover attended.
- First Friday Art Walk – Callow, November 3, 2023; Vicki Grover and Gunnar Fridriksson attended.
- First Friday Art Walk – Downtown, December 1,2023; Vicki Grover and Gunnar Fridriksson attended with DCD.
- Kitsap Mesa Redonda meeting, January 10, 2024; Vicki Grover attended with DCD. Other attendees included:
    - Evergreen Goodwill
    - Kitsap County Immigration
    - Holly Ridge Center
    - Well Point WA

- Vroom
- Kitsap County Parents Coalition
- Kitsap Transit HR representative
- Job Source
- Kitsap County Public Health
- Peninsula Community Helat
- Catalyst School

- St. Patrick's Day Parade, March 16, 2024; Vicki Grover attended with DCD.
- Armed Forces Parade, May 18, 2024, Vicki attended with DCD.
- District 4 Meeting, September 5, 2024; Public Works attended.
- Joint District 1 & 2 Meeting, October 29, 2024; Public Works attended.
- Kitsap Mesa Redonda meeting on November 13, 2024; Vicki Grover attended with DCD. Attendees included: Kitsap County Immigration; Holly Ridge Center; Kitsap County Parents Coalition; Kitsap Transit HR representative; Kitsap School District; Kitsap Public Health; various legal services.
- District 7 Meeting, November 14, 2024; Public Works attended with DCD.
- District 3 Meeting November 18, 2024; Public Works attended with DCD.
- District 5 Meeting November 19, 2024; Public Works attended with DCD.
- District 4 Meeting November 21, 2024; Public Works attended with DCD.
- District 6 Meeting November 25, 2024; Public Works attended with DCD.
- Kitsap Public Health Equity Collaborative Meeting November 19, 2024; Public Works attended with DCD.
- District 6 Meeting December 9, 2024; Public Works attended with DCD.

Bremerton website updates

The team created a webpage: https://www.bremertonwa.gov/1352/Transportation for the updated Transportation Plans on the Comprehensive Plan – Bremerton 2044 webpage. The city posted updates about the transportation plans and development including:

- Open house 1
- Web Map feedback
- Open house 2
- Next steps

Bicycle and Pedestrian Priority Networks web map

The city of Bremerton posted an interactive map to the Comprehensive Plan Transportation Element webpage. The map showed the current bicycle and pedestrian priority networks considered high or medium priority for implementing active transportation projects over the next 20 years. The team posted the map on the webpage for three weeks and the city received a total of 225 comments and 8 emails and letters from the public (see Appendix C for more information on public comment received). The input gathered during this period will guide the city's approach to refining the networks and ensuring they align with public priorities.

Social media

The city advertised virtual open house 1, the survey and virtual open house 2 on Bremerton's X account and Facebook account. See Appendix B.

Sharing physical materials

The team created a fact sheet to share information about the Comprehensive Plan process, what considerations they would include in the Transportation Element and Active Transportation plan development, project timeline and contact information.

COMMENTS

The study team received comments from many different sources throughout the process including survey comments, email, in-person at open houses and community meetings. Most of the comments came through the survey that was fielded at the beginning of the process in January 2024.

Source	**Number of comments**
Survey	304
Online open house 1	N/A
Online open house 2	4
In-person open house	4
Web map feedback	8
Comprehensive Plan email	6
Comprehensive Plan website	22 as of Dec 2024
Total	**326**

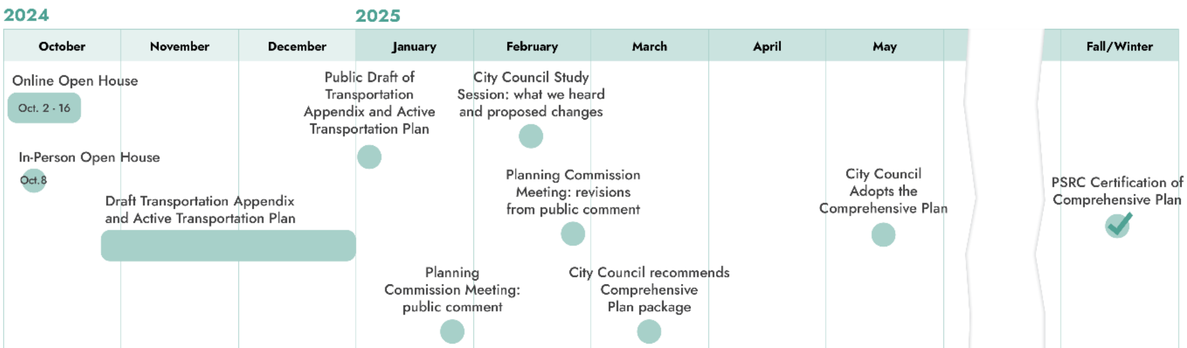
Note: Participants in virtual open house 1 submitted comments via the survey to the open-ended question "Did we miss anything? What else should we consider improving travel in Bremerton? Please briefly describe them here."

The team summarized comment themes from the survey in the survey section. Other comments received focused on prioritizing bike routes and protected bike lanes, ensuring safety was highlighted in the plans for bicyclists and pedestrians and specific locations community members would like to see improvements. See full comments in Appendix C.

OUTCOMES AND NEXT STEPS

The study team received feedback and engagement from the public at various touchpoints throughout the development of the transportation plans. The team is now drafting the plans which they will present to the Planning Commission for public comment and to the City Council Study Session in early 2025. Then the team will make revisions based on public comment and present the plan again to the Planning Commission. The City Council will then recommend the Comprehensive Plan Package including the transportation plans. The city will adopt the final plans later in 2025.

Next steps for Bremerton Transportation Plans



The team shared the above graphic during the second open house to show the public what opportunities they will have to comment on the draft transportation plans. Per the city's PPP, the team will accept and encourage written comments on the draft transportation plans in various forms, including email messages. The team will post notice of public comment periods and draft plans at the following locations according to the PPP:

1. Department of Community Development, 345 6th Street, Suite 600 Bremerton

2. Downtown Library, 612 5th Street, Bremerton

3. Kitsap Regional Library – Sylvan Way Branch. 1301 Sylvan Way, Bremerton

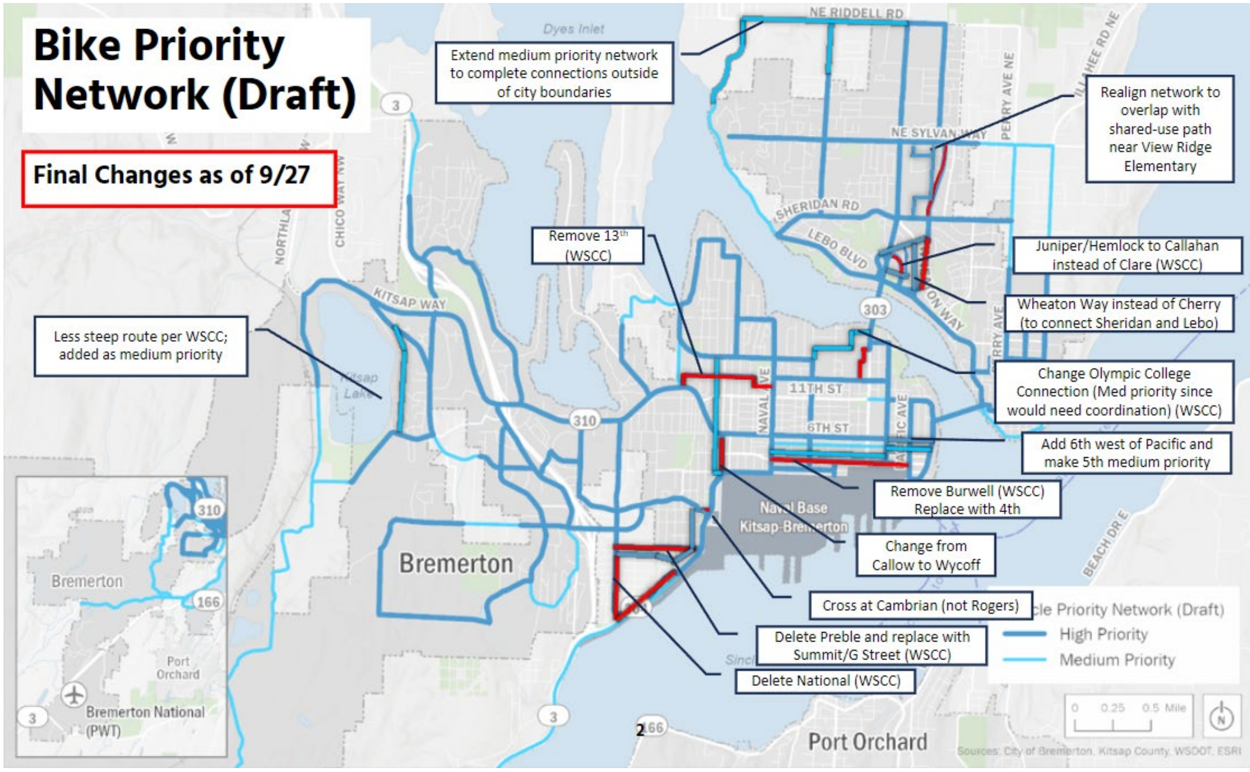
4. Sheridan Community Center, 680 Lebo Blvd., Bremerton

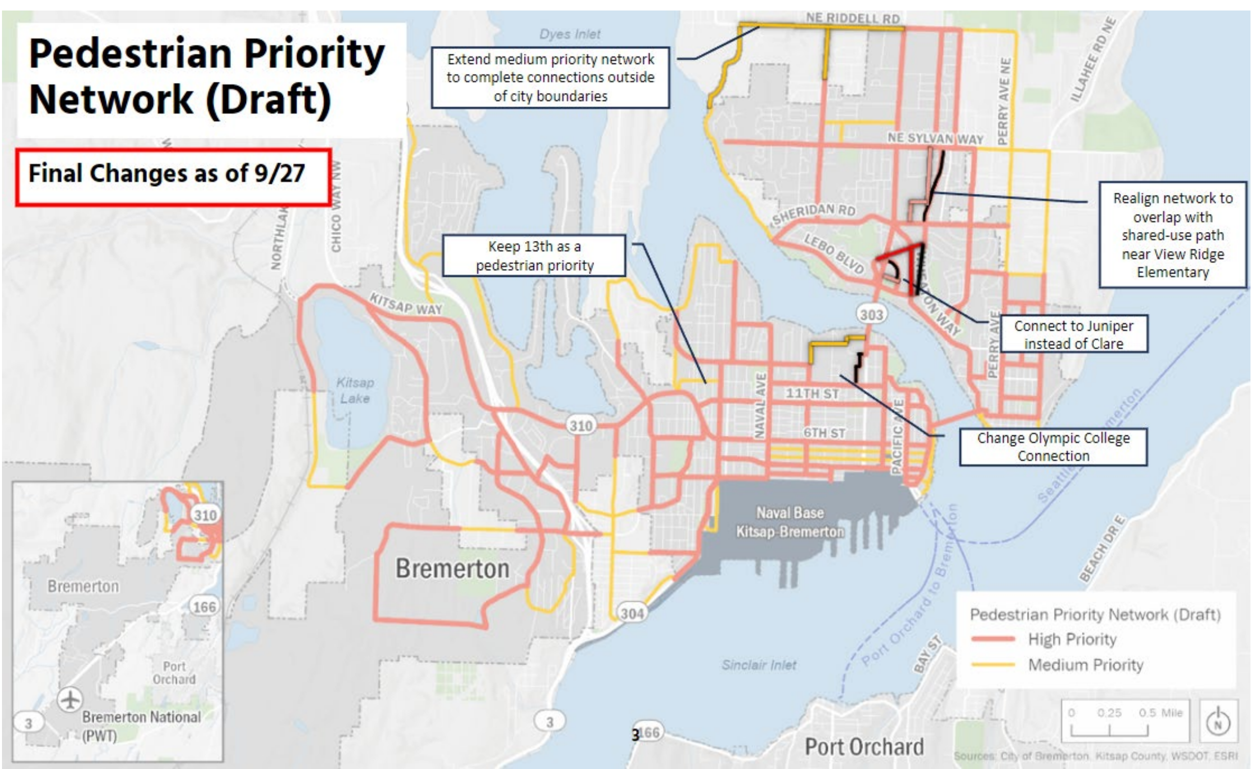
5. Olympic College Library, 1600 Chester Avenue, Bremerton 6. School District Office, 134 Marion Avenue, Bremerton

Comments should be addressed to the City of Bremerton Planning Commission at: (Mail Address) Department of Community Development, 345 6th Street Suite 600, Bremerton, Washington 98337; or (E-mail Address) compplan@ci.bremerton.wa.us. For specific questions, Planning Manager Garrett Jackson will be available throughout this process at (360) 473-5289. Planning staff will provide public comment cards at Commission meetings and at strategic locations throughout the city. The comment cards will be regularly collected but also designed for easy postcard mailing. In addition to this, assorted City of Bremerton swag will be handed out to those who are involved in the 2024 Comprehensive Plan – Public Participation Plan 3 commenting process.

Written comments will be presented to the Planning Commission during official public meetings (see tentative dates in the "Next Steps" schedule above. All comments on draft proposals and alternatives will be accepted and brought to the attention of the Planning Commission for their consideration. The team will keep written comments on file for public review. Those received prior to December 2024 are included in this report (see Appendix C) City Planning Staff will acknowledge the receipt of written comments by sending a letter with notification of opportunities for further involvement.

APPENDIX A: UPDATED BIKE AND PEDESTRIAN PRIORITY MAPS





APPENDIX B: SURVEY RECRUITMENT MATERIALS

Postcard

414 / 1-1-414

City of Bremerton
Engineering Division
345 6th Street, Suite 100
Bremerton, WA 98337

PRESORTED
FIRST CLASS MAIL
US POSTAGE PAID
AFTS

Complete our Transportation Survey for **a chance to win one of five $100 gift cards!** See reverse side for more information.

CURRENT RESIDENT
2321 NE 30TH ST
BREMERTON WA 98310-5320

CITY OF BREMERTON

Hello! The City of Bremerton is working to improve transportation throughout the city, and we want to hear from you! To help us meet the community's future transportation needs, we are inviting you to take our survey. **The survey takes about 10 minutes.**

Please complete the survey by **February 15th, 2024**, for a chance to win one of five $100 gift cards (must be 18 or older to win).

You can take the survey once by:

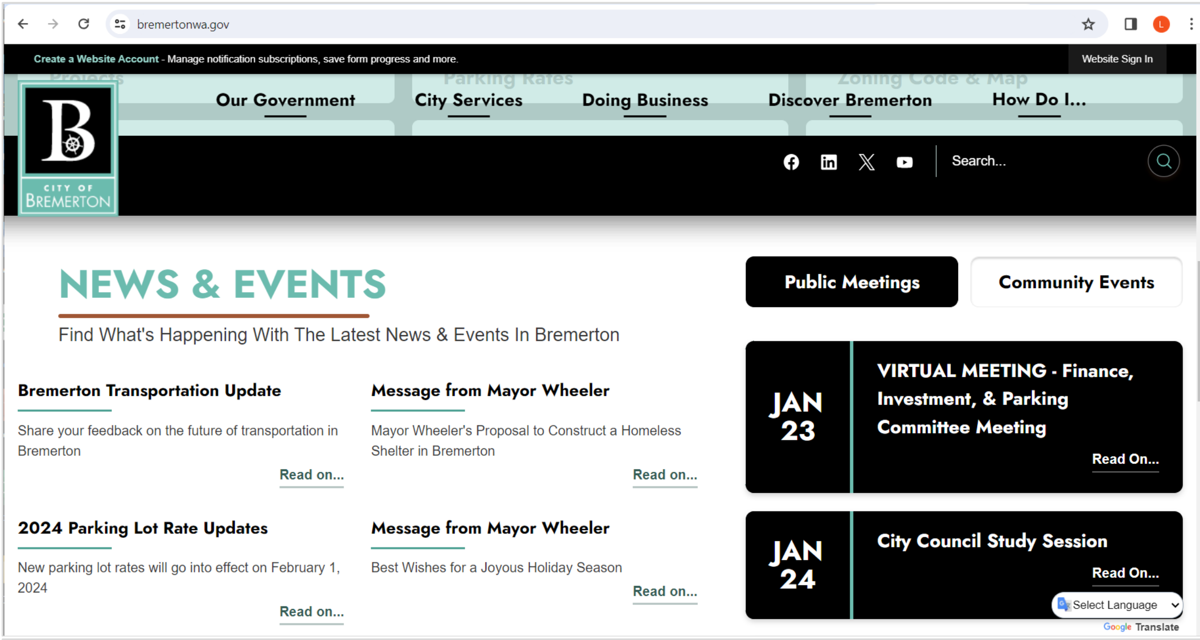
Link: https://rebrand.ly/brem44te-at-post

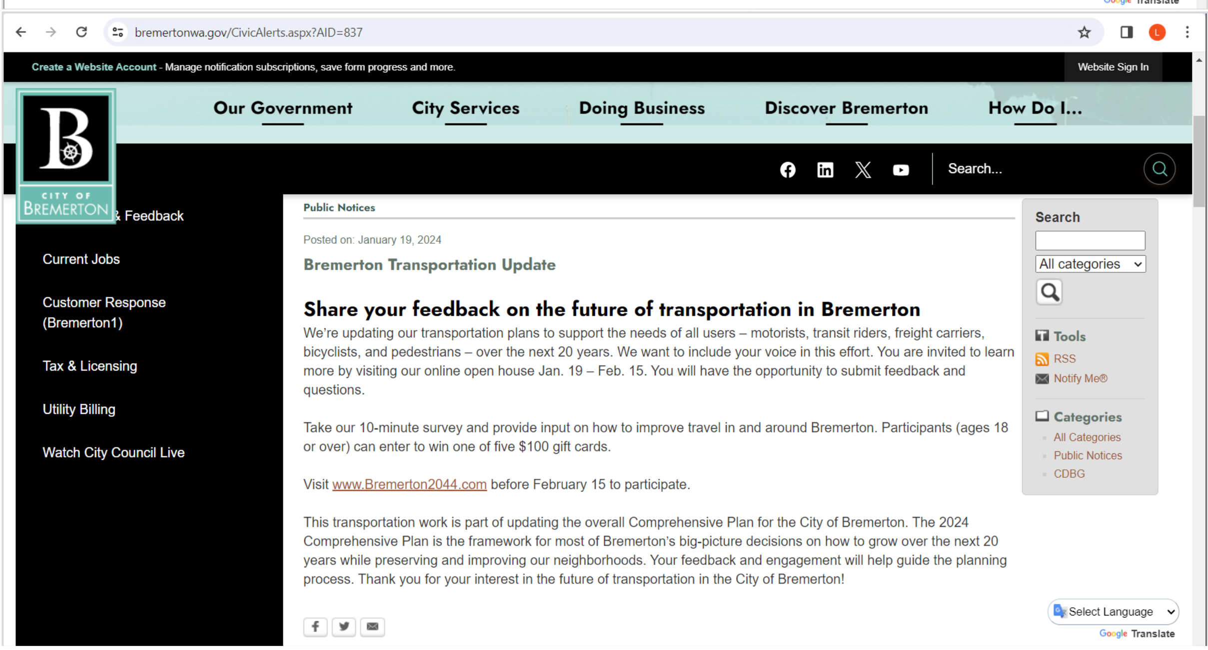
OR

Scan the QR code:

The City has hired PRR, an independent firm, to conduct this research. For questions or comments, please contact Vicki Grover at Vicki.grover@ci.bremerton.wa.us. Thank you!

Bremerton Website





Social Media

City of Bremerton - Public Works & Utilities
Jan 19 ·

We want to hear from you about the future of transportation in Bremerton! 🗣️

The city of Bremerton needs your feedback to help improve our city's transportation. We're updating our transportation plans as part of the Bremerton 2024 Comprehensive Plan update. The plan will be a framework for most of Bremerton's big-picture decisions on how to grow over the next 20 years while preserving and improving our neighborhoods. Your input on transportation challenges, solutions and ideas will help guide the planning process.

For more information, please visit: https://www.bremertonwa.gov/1352/Transportation

> City of Bremerton - Government · Follow
> Jan 19 ·
>
> Your input matters! Share your thoughts on the future of transportation in Bremerton by joining our online open house and survey. Survey participants (ages 18 or over) can enter to win one of five $100 gift cards. Start shaping the future at www.Bremerton2044.com.

2 · 1 share

Like · Send · Share

City of Bremerton - Public Works & Utilities
Oct 5 ·

Hey Bremerton! Come attend our open house and share your opinion! Your input will help guide Bremerton's future development. 🏠

Virtually from October 2nd through the 16th and in person at the Norm Dicks Government Center on October 8th from 5pm till 7pm.
#BremertonPublicWorks

Like · Send · Share

APPENDIX C: COMMENTS RECEIVED

Web map feedback

Email received	Summary of feedback
August 19, 2024	Email with reported safety concerns at the intersection of Adele Ave, Marion Ave N and 6th Street. The concerns include lack of sidewalks and crosswalk locations at this intersection and a lack of compliance with stop control at this intersection.
August 20, 2024	This email shared conceptual bike network for the city with recommendations for inclusion in the bicycle priority network. Recommendations include types of bike infrastructure by street type, similar to Seattle Bike Master Plan (now incorporated into Seattle Transportation Plan).
September 8, 2024	This follow-up email shared a revised map from Street Smart Bremerton consistent with WSCC.
August 25, 2024	Reported safety concerns related to traffic on 4th Avenue since construction of bulb-outs at the intersection near Kiwanis Park to narrow the roadway.
August 29, 2024	Email with reported safety concerns and request for more crosswalks. Recommendations in the email include a request for more crosswalks on Sheridan Avenue with rapid flashing beacons.
September 8, 2024	Shared at conceptual bike map including WSCC recommendations. The recommendation in the email includes a long-term vision for a connected network that is suitable for all ages and abilities and is implementable in a 15-year period.
WSCC Email	Email includes requests for additions and modifications to the priority networks, particularly for bike priorities. Additions include a connection under Warren Ave near 18th Street, connection to the Warren Ave Bridge, connection from Sheridan Park to Almira, modification to connection to Almira on the priority map. Other recommended changes include removal of sections of 13th Ave, National Ave, and the route through Olympic College from the bicycle priority network. The project team considered these comments in the summary of comments, refinement to the priority networks and development of projects.
WSCC Email 8-Attachment Summary	Detailed commentary on priority bike network echoing comments above with more detail on specific connections including addition of Harkins and Pitt in Manette modifications to networks near View Ride SRTS improvements, Harrison Heights Subarea transportation concepts, removal of sections of Broadway and 13th Avenue, addition of Lakehurst Dr ROW near Kitsap Lake, recommendation for different connections to replace Preble Street as an east-west route and changes in priority levels.

Open House 2

Email received	Summary of feedback or email text
Oct. 11, 2024	Mr. Knuckey, It's inaccurate for you to characterize our exchange as simply conveying minor, solvable maintenance issues. You were forcefully arguing against including protected bike lanes in our plan. For instance, you also used a poor argument based on road width

constraints and the cost of plastic bollards as reasons we probably shouldn't hope to protect the lanes in the upcoming 6th Street road diet project.

To put the issue of maintenance as a stumbling block fully to rest, I'd like you to inform you of the existence of the Federal Highway Administration's *Guide for Maintaining Active Transportation Infrastructure for Safety* (https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-10/Guide_for_Maintaining_Active_Transportation_FHWA-SA-23-005_0.pdf). Michelle Swanson, City of Olympia Senior Planner (mswanson@ci.olympia.wa.us), responded again today with this helpful guide, saying that anything from the FHWA should carry a lot of weight in your line of work. It specifically addresses protected and separated bike lanes and should assure folks that we can figure maintenance issues out, like other cities have.

To turn our attention forward to the upcoming Public Works Commission meetings, I've attached a photo (below) of the type of protection being installed in Seattle and lots of other cities nowadays. I urge you to strongly consider this type of protection if we truly want a network for all ages and abilities, as Ms. Grover stated as one of the few main goals of our bike plan. This could forcibly stop the huge pickup trucks and SUVs most people drive nowadays from killing people, vs. simple plastic bollards, and it would be more durable than bollards over time. Notice how little road width is needed for such a strong level of protection. Also, bike lanes needn't always be quite as wide as the one in this photo in narrow road sections. I know I'd gladly give up some lane width for a greatly increased level of protection, and I'm sure most other riders would agree.

To preempt further arguments against adding protections based on road width constraints, I'd like to remind you that the protection in Bremerton's only extant stretch of protected bike lane, downtown on Washington Avenue, is comprised of plastic

	bollards placed directly atop the paint of the line delineating the bike lane. It took no additional width to add that protection. Since protections can be added to a bike lane at virtually any road width, the cost of plastic bollards are one of the few remaining arguments against protecting the lanes of any particular section of the spines of our bike network. However, I can't imagine that the City Council and public wouldn't be in favor of trying to find the money for some plastic bollards (and hopefully better protections). Avoiding children biking through paint-only bike lanes on streets like 6^{th} (and likely preventing awful injuries and deaths) is worth some amount of the city's money. Protected bike lanes have been shown to slow traffic down, making roadways safer for all users, including pedestrians and those in vehicles. I suspect there are guidance documents and/or other cities' plans you and your staff can review to learn about the spectrum of lane separation and protection strategies available nowadays, and I encourage you to share them with the Public Works Commission at upcoming meetings if you already haven't. It's particularly notable that a review of them hasn't been presented to the public as part of this Active Transportation Plan process, and that all of the public's comments and the open house have occurred in the absence of one. In lieu of a more formal review though, I'd be happy to present more lane protection options to staff and/or the Public Works Commission. We're surrounded by cities that base their bike plans on protected lanes and their plans are easy to look up. Thank you, Erik Pedersen Bremerton Planning Commission
Oct. 10, 2024	Thanks a lot for your time at the Active Transportation Open House last night. I was saving my public comment for the open house but after our discussion we agreed it'd be easier for both of us if I submitted something electronically. I've also copied my District 3 Council Representative and the other city staff and councilmembers I spoke with last night because I'm concerned about the direction this process seems like it's headed. To expand on the points, we spoke about on the phone this summer and in the planning commission meeting where we addressed the Active Transportation Plan months ago: 1. Any network that isn't drastically more selective than the one you've shown on your maps to date will almost certainly not be completed in our lifetimes, at the rate Bremerton builds bike lanes. We should prioritize one, single, continuous, PROTECECTED east-west route, and one, single PROTECTED north-south route that we'll feel pressure to actually complete. Maybe two in each direction. Plugging gaps in our existing, scattered, paint-only lanes are a good secondary goal. This is what would increase safety and ridership most in Bremerton. Everything else on your maps should be a distant third in priority. 2. It's important to set goals that mean something. You've stated the goal of making something that's safe for all ages and abilities in our current plan draft, which is a worthy goal to have, but if we're not even considering the building of protected bike lanes, we're being disingenuous about this goal. Imagine a family with children reading about our goals and riding over to our up-and-coming 6th Street road diet project. After talking with you, Mr. Fridriksson and Director Knuckey last

	night, it sounds like nobody within our Public Works Department expects that to be a protected bike lane (despite consistent pleas from the biking public). Is that paint-only lane going to be safe for children? I wouldn't let my kids ride in it, would you? What about novice, disabled or elderly riders? We need to be honest about our goals. 3. Protected bike lanes are not a new-fangled, unproven or overly expensive option. EVERY SINGLE ONE of our main neighboring cities on Puget Sound has planned their bike networks around spines of separated and/or protected bike lanes - this includes Tacoma, Seattle, Olympia, Bellevue, Everett, and Bellingham. Furthermore, Olympia, Bellingham, Seattle, and Bellevue explicitly prioritize separated/protected bike lanes far above paint-only lanes because of their stated goals of building networks for all ages and abilities, as well as the growing body of evidence of their increased safety and ridership outcomes. Since I brought up this topic with you at the beginning of this process, it does not appear as though you've familiarized yourself with the various types of protected bike lanes that exist and are planned for throughout the other cities of our region, or considered what suite of them might work best through different parts of Bremerton. I'd start with reading Bellevue's plan, personally. It cites credible evidence that its bike network based on aggressively adding separated/protected lanes will save lives. They expect theirs to save 4.8 lives over 20 years vs their old approach! You might also look at Eldridge Avenue in Bellingham as an example of a protected bike lane on a road-diet street similar to 6th Street that appears like it was installed relatively quickly and cheaply. 4. All three planning staff members in attendance last night, including you, Mr. Knuckey, and Mr. Fridriksson, consistently discouraged the idea of considering any protected bike lanes for our plan to me and several other members of the public within earshot. This made the open house seem much less like a listening session than an expectation-lowering session. With such staff unanimity, from the Public Works Director down, members of the public are left to wonder if you're allowed to write a plan that even addresses the option of protected bike lanes. There's a strong appearance of preconceptions (and/or willful ignorance). Sadly, Director Knuckey cited simple issues with sweeping behind bollards and snow removal as reasons Bremerton can't hope to include protected bike lanes in our plan. He made the same argument at a recent public meeting about the 6th Street road diet as well. I asked him how all the other nearby cities with protected bike lanes handle these issues, and he hadn't seemed to consider that they routinely can and do. So, today I randomly picked Olympia from the list of the cities above with lots of protected bike lanes in their plan and reached out to them! I was easily able to get a hold of Michelle Swanson, Senior Planner with their Department of Public Works - Transportation (mswanson@ci.olympia.wa.us). Here's the most relevant section from her response: "We reached out and asked other jurisdictions about maintenance, too. We heard that Seattle DOT has had good luck with an extra-tough flex-post that sweepers can roll over, so that's worked for some of their lanes that are separated from traffic by flex-posts. We

	expect that we will likely need to buy some special equipment to clear separated bike lanes when the time comes, as we prefer more permanent types of infrastructure than flex-posts since that cuts down on maintenance costs. It's possible we'll team up with our stormwater utility to buy a piece of equipment that can also clean pervious sidewalks... We really haven't worried too much about snow. It snows so rarely here and the snow melts so quickly that we just let it play out." 5. It took me 10 minutes to get an idea of what some of the answers to Mr. Knuckey's issues might be. Do those sound like insurmountable obstacles, or is Director Knuckey using this issue as an excuse to stick with a comfortable status quo? A walk-behind street sweeper and a few extra staff hours per week might solve the issue. Mr. Knuckey said our parks department already owns one of these walk-behind sweepers, in fact. I hope we're not the only metropolitan city in our region to create a brand-new bike plan based on paint-only lanes. A plan that isn't based on a spine of protected bike lanes would be obsolete before it's finished and lead to preventable serious injuries and deaths for multiple Bremertonians. Let's be honest about our goals, look at what the other main cities around Puget Sound are doing, imagine yourself and a kid from your own family in one of these paint-only lanes, and change course. Thank you, Erik Pedersen
Oct. 16, 2024	Hi folks, I watched the 28-minute video about the transportation element and active transportation plan. Looks like a lot of good ideas are already included in the plan; however, nowhere on the web site could I find the actual draft document. Does that exist yet? It would be nice to provide that if so. Regardless, here are my comments: 1. In general, to implement a plan for improved active transportation, the city will need to provide additional resources above what it is currently providing. For example, it will be more expensive to maintain a proper active transportation system, such as more hand maintenance work around candlestick markers for bike lanes, more resources to maintain sidewalks, more resources to keep the street markings fresh, additional ADA investments, trip hazards, tree maintenance, sidewalk sweeping. In particular, additional resources need to be committed to street sweeping, it is important to keep gravel out of the bike lanes. Sidewalks along the arterials also accumulate gravel from snow/ice events that is never cleaned off. The gravel increases the chance of a slip/fall for pedestrians and is difficult for e-bikes, e-scooters, and motorized wheelchairs to navigate safely. 2. Based on my personal experience of walking downtown, along Washington Avenue, SR-303, Washington Avenue, and the Manettte Bridge, I feel strongly that the plan should include a goal to completely electrify busses. That's because of the noise the diesel buses make. Most walkers will tell you that the motorized buses are extremely noisy and in addition, have an air-brake feature that opens a valve at the bottom of the tanks to purge water. It is very loud and startling. This is really uncomfortable for pedestrians and bikes. On the other hand, the new electric buses are super quiet, a great new feature.

	3. The plan should include a goal to reduce lane widths. This will both calm traffic and keep vehicles further from the edges of the sidewalks within the existing right of way. 10.5 foot lanes should be the maximum arterial standard. 4. Related to above, the idea of walking and biking comfort (or discomfort) is important. Noise is a big part of that. That's why it is consistent with a good active transportation plan to adjust vehicular traffic, as much as feasible, more toward the center of the street to get the traffic further away from pedestrians. Even a few Inches are important for pedestrian comfort. Narrower lanes accomplish this. 5. Carefully plan for bike lane continuity. 6. The plan should include specific mention of repairing/widening sidewalks on main arterials, specifically the entire length of SR-303, the entire length of Burwell, 11th from SR-303 to Kitsap Way. I am not mentioning 6th street here, since that project is already in the works. 7. Pull the walk signal activation buttons from the core downtown area. Re-time the signals to provide pedestrian crossings at regular intervals. 8. Consider making Park Avenue, between 4th and Burwell, a pedestrian plaza. 9. Since this is a 20-year plan, there is one more thing to consider. There have been discussions about how Bus Rapid Transit might work for Bremerton in the future. The conversation about this concept goes quickly to the problem of getting buses across the Warren Avenue Bridge. The plan should consider a gondola system to connect Port Orchard and the 303 corridors to the downtown area. The reason this might be viable is because of the cost of constructing a new bridge across Port Washington Narrows. If the transit investment is eventually going to be made anyway, a gondola system might be cost competitive. This is Joe Keller's idea. It may initially sound a little crazy but the power of an idea like this is that it shows a willingness to consider what might be possible, instead of continually settling for minor incremental improvements that don't achieve the potential of what is possible. Given that we live in one of the most beautiful physical settings in the state, a gondola system would be functional, fun, practical, and iconic to the city. It would have the potential to re-draw and reinvigorate the SR-303 corridor and the downtown area. And it would attract many funding partners: Kitsap Transit, the city, possibly Kitsap County, the State, the Feds, private investment. Again – sounds a little crazy but give the concept a placeholder in the plan. **Chal A. Martin**
Oct. 16, 2024	I'm Rick Feeney of West Sound Cycling Club (WSCC) Advocacy Team (South Kitsap Rep.). I did a review of the Transportation Plan and here's a few comments. As the PSNS&IMF's Engineering Department's Personnel Safety Engineer for my last 8 years (serving 2000 engineers and technicians) and volunteer lead steward of South Kitsap Regional Park (SKRP); I have established knowledge on U.S. Navy Risk Assessments (e.g., comprised of probability and severity of a bad event or near miss and proactive fixes to prevent them). There are many government and vendor policy documents on this topic. I think your document could be strengthened documenting using established policies. I think it would enhance that policy a bit. Here's a few comments I noted to possibly incorporate: Rick Feeney Port Orchard

	https://wsdot.wa.gov/publications/fulltext/CEVP/ProjectRiskManagementGuide.pdf PSRC: 3rd para.: ...is published in Vision 2050. It's the first mention of it in this section. Obviously will need a hyperlink and/or home Internet address specified. Improving Safety for All Users: Include "The City of Bremerton will scrutinize all new projects, significantly revised projects, and alternatives practices/improvements, and concepts with the WSDOT's documented Risk Assessment protocol, to the appropriate level. The city also routinely coordinates... Include a most valuable ally the StreetSmart Bremerton. T3 & Goal T3: Add: "The City of Bremerton will scrutinize all new projects, significantly revised projects, alternatives practices/improvements, and concepts with the WSDOT's documented Risk Assessment protocol, to the appropriate level." TR1(S): The City of Bremerton will establish a Normal Operating Practice (NOP) routinely critiquing past accepted practices and production norms from all levels of personnel for the betterment of the policy and product in a cost-effective manner. (An example might be the WSCC gifted bike locking devices and modified usage policies which have resulted in a great report.) TR2(A): Add a bullet with: * Extending the useful life cycle (physical and esoteric/beautification) of the adopted products. Goal T5: Continuously improve the quality, safety, effectiveness, and efficiency of the transportation system. Somewhere in the Transportation policy section, include a policy similar the Kitsap County's new policy on incorporating bicycle parking policy (e.g., near front of building entrance, visible not hidden, proven pilferage designs, etc.

Feedback from Comprehensive Plan email

Email received	Email
Oct. 16, 2024	I urge the city to prioritize bicycle and pedestrian improvements over those for vehicle traffic. There are many families that live in Bremerton, and it is a challenge to find safe places to bike and walk. My son, partner, and daughter live on 6th street and their young child doesn't have a safe place to play outdoors. Also, making it easier to get to the ferry terminal and to Puget Sound Naval Shipyard by foot or bike will reduce traffic congestion and parking problems and should be a high priority. When my husband lived on Lebo, near Lions Park, he could walk to the Shipyard faster than taking the bus. Encouraging walking and cycling by providing safe paths could really make a difference as many people who live in Bremerton could otherwise get to the Shipyard fairly quickly

	without using a car. High speed fast ferries, combined with bike storage at the ferry terminal, also encourage commuters to leave their cars at home. E-bikes have allowed many more folks to try cycling and safe cycling paths leading to the Shipyard and the ferries could make all the difference as the unfortunately real safety concerns are the biggest barrier at this time. At the Washington Navy Yard in Washington D.C, bike paths have made a huge difference in the number of folks commuting by bike. When I used my bike to commute in Washington D.C., the Navy Yard bike racks were packed full because Washington D.C has added bike paths that make commuting by bike safe. Since bikes take up much less space than cars, bike commuters really did help with the parking problems at the Washington D.C. Navy Yard. This shows the real difference that safe bike paths make. Beth Anderson
Oct. 15, 2024	I've noticed in looking at the map for improvements to the city of Bremerton 18th street has not been considered a priority for the segment between Wheaton Way and Perry. This is a highly trafficked road between two main thoroughfares. It is currently in very bad condition and should be considered for improvement. Many people use this street to access the YMCA, Ice rink, the bridge loop walking path, and Bike lanes on Wheaton Way. When improvements were made on Wheaton Way, they brought a great sidewalk part way up 18th St. It would be nice to see that continued to allow for safe access to upper Manette. Please consider adding streets to your map that need improvements and not just streets that are already in much better shape. Thanks, Andrew Sharman
Oct. 16, 2024	Hi - As a district 3 resident with 4 small children invested in the long-term viability of this city I wanted to provide a couple brief thoughts on the 2044 Plan. My primary issue is inducing demand for parking. We have to reject the status quo. More of the same behavior (single owner-occupied cars traveling to the shipyard and bulldozing our downtown real estate for parking lots) is unsustainable for livability, building a sustainable tax base, supporting our local businesses or easing traffic. The definition of insanity is doing the same thing and expecting the same result. Behavioral economics says you need to raise the costs on those behaviors or provide viable alternatives such as biking, transit or carpooling. To add insult to injury, we tax parking lots at lesser rates than improved structures while also giving this land to residents who disproportionately are coming in from other municipalities. Said another way, we are directly subsidizing other communities through our policies and knee capping our own budgets. It has to end or else we just will continue to plant seeds for our own inevitable decline, turning Bremerton into an undesirable place to live because all of our money is being used to subsidize other communities. On the positives, and tangent to this, I applaud efforts to build a bike network. Again, no solutions to parking, congestion and driving work without viable alternatives. I would submit however that no such network will get used if it is simply painted gutter lanes. Paint doesn't protect 150lb humans traveling 15 MPH from 4k lb. vehicles traveling 25MPH. If all you want on bike paths is risk taking demographics that skew heavily to young men, then you are going to get your wish with painted gutter lanes. If you want to alleviate real traffic problems though and reach broader demographics, separated and protected infrastructure is mandatory. Thanks for your consideration. -Adam Doehrel

Oct. 16, 2024	To whom it may concern, I have been paying attention to the direction of Bremerton development and have concerns. Downtown Parking Bremerton already has an inordinate number of parking garages downtown. Increasing that number of parking garages would send a disappointingly clear message that city leaders, planners, and big employers prefer to prioritize car transport over safe streets and a bold, progressive vision for what Bremerton is and could be. We have an opportunity to design a city that has a vital downtown, community spaces, contiguous protected bike lanes, and walking paths. Where we can move around the city with a reduced dependency on cars. Downtown Bremerton is already full of vacant buildings which limits vital development. We can do better by increasing trees and community spaces, reducing concrete structures and encouraging non-single-car transport modes. Level Traffic Stress I often move around the city core by foot. I was a bike commuter for many years but have given up this mode of transport. Drivers here are aggressive and fast and there are few actual protected bike lanes. We have allowed Bremerton to be driver dominant and I feel it's time to really look at how we can create a more enjoyable place to navigate. As I understand, we have an opportunity to be first on the wave of planning for future LTS studies, by adding LTS to the 2044 TP. Let's be courageous and be on the forefront of new ways of development. Bike & Pedestrian Priority Network This needs major community involvement to understand the vision and create something truly safe and scalable as Bremerton grows. I was in Vancouver BC this week and they are developing a greenway through the city that has completely protected bike/ped lanes. It is rimmed with community gardens and gathering spaces. It is refreshing to see that they are even removing buildings to prioritize safe transport for bikes, walkers, families, commuters, across the city. We are a small city and have the opportunity NOW to create safe streets and pathways that are contiguous, connected, and useful. Speeding & traffic violence This is absolutely a problem in Bremerton and seems to be an accepted part of the culture. We need a solid vision of how, when, and where traffic calming will be implemented – not just a side note in the TP. As a citizen I want to understand the overall vision and how we will accomplish safer streets. Will we increase enforcement? Will we address the known unsafe streets that encourage people to speed to the shipyard in the morning? I live in this path and can offer firsthand experience of aggression and speeding. Having crossed the Manette bridge to traverse the city by bike many times, I can speak to the aggression and speeds, hence my concern. Thank you for the opportunity to share my concerns. Again, we have an opportunity as Bremerton grows, to build a city where we can be safe and part of a vital community. Where future generations of Bremerton citizens will look back with pride that we adopted a Livable Centered Vision. Thank you Heather Pugh

Oct. 15, 2024	My name is Jeff Kerr. I live on 10th Street in Manette. (10th street in Manette) My suggestion and/or concern is that 10th Street from lower Shore Drive by the Boat Shed to Trenton has been neglected for years. There are hardly any sidewalks and the street is rough, bumpy and potholes. I see lots of money being spent in the core of Manette and on other streets being repaved that are in much better shape than 10th Street and I would like to know if in the future you would consider taking a look at my concerns. To add sidewalks and repave 10th street in Manette. (upper shore drive) And on a second suggestion. Upper Shore Drive would make a great walking path from the park above the boat shed to Bachman Park gazebo. It gets a lot of traffic with Walkers, dog walkers and Bicyclists. it's very dangerous with cars in that one lane one way street not very friendly for walking at this point. I would suggest having a look at it. It would be a great area to upgrade to a more friendly walking path. and with great views. Thank you Jeff Kerr
Oct. 16, 2024	I am supportive of efforts to accommodate housing and jobs in Bremerton and Kitsap County. When the Comprehensive Plan Update is adopted, concurrency regulations will require that future development pay for infrastructure that is needed to support that *future* growth. It does not allow for developers to pay for the deficiencies that currently existing under existing conditions. The existing adopted Transportation Element identifies priorities: - Improve safety for all users through updated facilities and street designs that accommodate all modes - Create an interconnected multi-modal network that connects all users to City Centers, and major destinations within Bremerton, as well as Kitsap County. - Coordinate with local and regional partners to ensure that travel patterns do not disproportionately impact Bremerton residents' quality of life. - Increase transportation spending on maintaining, preserving and operating the existing transportation system. WAC 365-195-415 requires that jurisdictions identify improvements that are necessary to address existing deficiencies. A reassessment is required when gaps in funding do not allow for provision of facilities and services to support adopted land use plans. I am concerned that funding is lacking to address the deficiencies in infrastructure and services that are required to support *adopted* plan priorities. Can we truly say that street designs accommodate all modes under existing conditions, and that an inter-connected multi-modal network exists to support current adopted growth? Under the proposed plan, growth will increase by over 40 percent. Future development is expected to address impacts and necessary infrastructure. I would like to see where the Comprehensive Plan draft materials identify the gaps in service, infrastructure and funding that exist now, under adopted plans, and how those gaps are going to be filled. For example, I don't see on the ground enforcement of traffic regulations in my neighborhood, which would support safety and quality of life. There are gaps in sidewalk provision, and a very sporadic transit service. Will the EIS provide clarity on the gaps to meet existing needs and how those deficits are being addressed per WAC 365-195-415? Most sincerely, Jacq

In-person open house comment cards, Oct. 8, 2024

Comment	Comment card text translated (see appendix C.2)
Comment 1	Vision statement should be stronger than “strive for.”
Comment 2	As a pedestrian, I'd like to see more little parks in the more rural heavy areas and maybe an area for the homeless in multiple spots to help appease the general public so less time is spent trying to run them off.
Comment 3	The sidewalk plan needs to include Wycoff between 13th Street and either 9th or 6th Street. With the St. Vincent de Paul major project projected to have an entrance onto Wycoff, improving the pedestrian connection to 6th Street will serve as a viable connection to the Charleston Business District. The CBD/city project to have the Wycoff overpass improved with murals, improved lighting etc. this stretch of street must have a multi-modal update.
Comment 4	The 6th Street multimodal project will have a significant impact connecting downtown and the Charleston Business District Center. First it will improve all forms of travel between the one mile of distance and of the two areas. Next will allow the CBD a better opportunity to become a Creative District. It will also serve as another step in the CBD becoming a Main Street affiliate. Connecting the two retail/entertainment centers will benefit all of Bremerton.

APPENDIX C.2

Comment 1

Vision Statement should
be stronger than "strive
for."

Comment 2

As a pedestrian, I'd like to
see more little parks ~~between~~ in
the more rural heavy areas.
and maybe an area for
the homeless in multiple spots
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public so less time is spent
trying to run them off

Comment 3

The sidewalk plan needs to include Wycoff between 13th St and either 9th or 6th Street. With the St. Vincent de Paul major proctect projeted to have an entrance onto Wycoff, improving the pedestrian connection to 6th St. will serve as a viabale connection to the Charleston Business District. the CBD/city project to have the wycoff overpass improved with murals, improved lighting etc. this stretch of street must have a multi-modal update

Comment 4

The 6th street multi modal project will hav a significant impact connecting Down town and the Charleston Business District Center. First it will improve all forms of travel between the one mile of distance ~~betw~~ & of the two arears.

Next it will allow the CBD a better opportunity to become a Creative District It will also serve as another step in the CBD becoming a Main Street affiliate. Connecting the two retail/entertainment centers will benifit all of Bremerton

Attachment 1.

Bremerton Transportation Element Public Survey Report

Bremerton Transportation Element Public Survey Report

Transportation and Non-Motorized Element Updates | March 2024

Table of contents

Introduction

Survey Report Findings – cheat sheet!

- Project overview and concise summary of survey results (pages 4, 6-7)
- Detailed survey findings (pages 10-34)
- Community comments and feedback for the City about the Transportation Element update (pages 35-36)

Study Overview

Purpose

The City of Bremerton is updating the Transportation Element of their Comprehensive plan to improve multi-modal travel in and around Bremerton for all users over the next 20 years. The city will also update their Active Transportation Plan to consider how improvements to biking and walking infrastructure can benefit city residents. The City aims to survey community members who travel in or around Bremerton to obtain a better understanding of perceptions and barriers using transportation services and identifying potential transportation improvements.

The City conducted a public survey to learn more about the community's travel needs and support community engagement through online open houses.

This report summarizes key survey findings. The City will use the survey results and feedback learned through the online open houses to inform potential solutions to improve travel in and around Bremerton.

Survey objectives:

1. Describe overall perceptions of transportation services and potential motivating factors,
2. Describe barriers to using services,
3. Describe attitudes and priorities around improvements, and
4. Identify potential strategies to improve transportation in Bremerton.

Study Approach

To recruit survey respondents, researchers mailed invitations to a statistically valid, random sample of 5,000 households with Bremerton addresses.

In addition, the City promoted the survey to Bremerton residents through the following channels (See Appendix B for examples of recruitment materials):

- The City's Transportation Plan website
- Social media posts by the mayor and PW
- The mayor's email listserv
- Flyers post throughout the city
- Partnership with Community-based organizations:
    - Kitsap Mesa Redonda
    - Kitsap County Veterans Assistance Program
    - Kitsap County Parent Coalition
    - The Conduit Network
    - The Arc of the Peninsula

- Online open house
- Bremerton First Friday Art Walk event in Charleston and Downtown

The online survey fielded from January 19th to February 15th, 2024, in English. A total of 605 people took the survey. The response rate was 12.7%, and the margin of error was +/- 4%.

Analysis Methods

This report summarizes survey results using charts. The totals in some charts may add up to somewhat more or less than 100% due to rounding or where respondents could select multiple responses. In addition, the total number of respondents varies from chart to chart based on how many people answered the question.

Correlation analysis was used to determine the relationship between demographic characteristics of respondents (age, gender, income, etc.), their travel behavior (i.e., travel frequency, travel purpose, etc.), and their priorities for travel improvements (e.g., most important projects to improve travel in Bremerton). We analyzed correlations for the following demographic variables:

- Residency in the City of Bremerton
- Frequency of travel in and around Bremerton
- Age
- 2023 household income
- Identifying as male
- Identifying as female
  Identifying as Black, Indigenous, and/or a Person of Color (BIPOC)

Only statistically significant relationships are discussed throughout the report. When something is statistically significant, it means it is highly unlikely to be the result of random chance. To achieve the cut-off for statistical significance, estimates must have a 0.05 significance level (a 95 percent confidence level) and a correlation coefficient above 0.15 or below -0.15. If one or more of the demographic variables listed above does not appear in the correlation report for a question below, then we did not identify statistically significant relationships between those demographic variables and the question response options.

What are correlations and why did we use them?

Correlations are a statistical measurement that tell us if there is a linear relationship between two variables. Correlations usually have one of two directions: positive or negative. If the correlation is positive, both variables move in the same direction, meaning that as one variable increases, the other variable also increases. If the correlation is negative, the variables move in different directions, meaning that as one variable increases, the other variable decreases.

Correlations can identify ***trends*** and provide helpful insight into complex real-world relationships. For this report, correlations help identify important relationships between demographic variables and transportation use, barriers, and opportunities. Understanding relationships between these variables may help the City develop transportation improvement strategies that meet the needs of all groups of people who travel in or around Bremerton.

Additional guidance on interpreting correlation results:

- A **positive** correlation indicates two variables moving together in the same direction. To report a positive correlation, we say:
  - "If respondents reported X, they were also more likely to report Y."
  - "Respondents who identify as BIPOC were more likely to travel in or to Bremerton for school, as compared to respondents who do not identify as BIPOC."
- A **negative** correlation indicates two variables moving in different directions. To report a negative correlation, we say:
  - "If respondents reported X, they were less likely to report Y."
  - "City of Bremerton residents were less likely to travel in or to Bremerton to visit friends or family, for recreation, and/or for errands, as compared to non-resident respondents."
- **Descriptions of "younger / older" or "higher / lower income"** do not refer to a specific age or income category. Rather, it means that the relationship changes for respondents at opposite ends of the age or income spectrum. For example:
  - Younger respondents were **more** likely to travel in or to Bremerton as part of a work commute, for school, and/or for childcare, as compared to older respondents. Because age is a spectrum, it is also true that older respondents were **less** likely to travel in or to Bremerton as part of a work commute, for school, and/or for childcare.
  - Respondents with higher incomes were **more** likely to travel in or to Bremerton as part of a work commute and/or for recreation, as compared to respondents with lower incomes.
- Charts may include "I don't know" or "prefer not to say" responses, but we removed these cases from the statistical analysis.

Key findings and recommendations*+

Travel patterns

- Most respondents (86%) live in the City of Bremerton.
- Most respondents travel to or in Bremerton 4 to 7 days per week (79%); typically for errands (88%), social or recreational activities (76%) and work commute (56%).
- Most respondents typically travel during peak hours (64% between 9:00 a.m. and 2:00 p.m.; 86% between 2:00 p.m. and 7:00 p.m.).
- Most respondents (78%) drive alone or with friends or family (68%). Some use transit, such as ferry (34%) or the bus (18%), or other alternatives to single-occupancy vehicles such as walking (38%), biking (19%), ride share (8%), or carpooling (7%).
- Respondents identified traffic congestion (64%), aggressive or reckless driving (64%), poor road conditions (53%), or wait times at lights (51%) as top traffic issues in Bremerton.
- Respondents thought adaptive or "smart" traffic signals (67%) would improve traffic conditions.

Mode shifts

- Encouraging people to use alternatives to driving alone comes down to ease of use, flexibility, and/or independence. Among alternatives to driving alone, respondents were more interested in options that required less participation with others: bus and biking were most-preferred, followed by carpool, then vanpool.

- Top **barriers** to transit and active transportation use:
  - Riding the bus takes too long (60%)
  - Taking the ferry is a challenge when routes are not frequent enough (89%) or the ferry is unreliable (83%)
  - Biking with incomplete or no bicycle lanes (93%) and navigating dangerous driver behavior (83%)
  - Walking with incomplete or no sidewalks (76%)

- Top **opportunities** to more transit ridership and active transportation:
  - Riding the bus – more frequent service (29%)
  - Using the ferry – more frequent service (64%)
  - Vanpooling – free ride home for emergencies (14%), help establishing vanpool (13%), or learning more about the vanpool program (12%)
  - Carpooling – help establishing a carpool (18%), free ride home for emergencies (16%), or free or reserved parking (16%)
  - Biking – new (42%) or improved (39%) bike lanes
  - Walking – new (55%) or improved (54%) sidewalks and crosswalks

Transportation improvement priorities

- **Most important projects** needed to improve travel in Bremerton:
  - Ferry improvements (48%)
  - Pedestrian improvements (48%)
  - Traffic improvements (38%)
  - Biking improvements (34%)
  - Transit improvements (31%)

*Some questions and categories were not strictly defined, and interpretation left to the individual (i.e., “it costs too much”, “improved comfort at bus stops”, “improved comfort at ferry terminals”, “better information on bus routes”, etc.

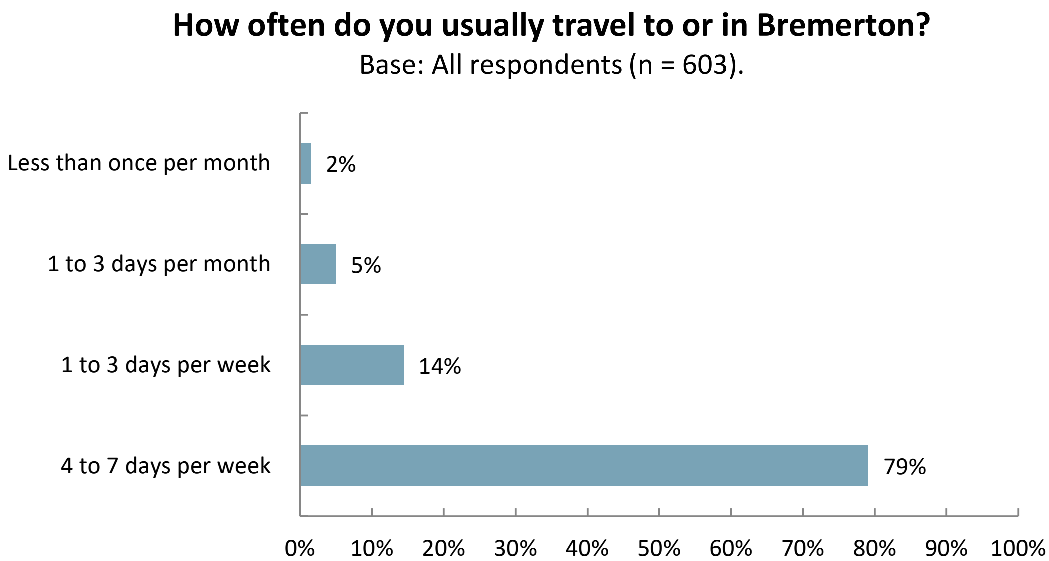
+Some response category explanations were removed to improve chart readability. Please see Appendix B (page 39) to see full list of survey questions and response categories.

Detailed Findings

Current travel behavior

Travel frequency

Most respondents (79%) travel to or in Bremerton 4 to 7 days per week.



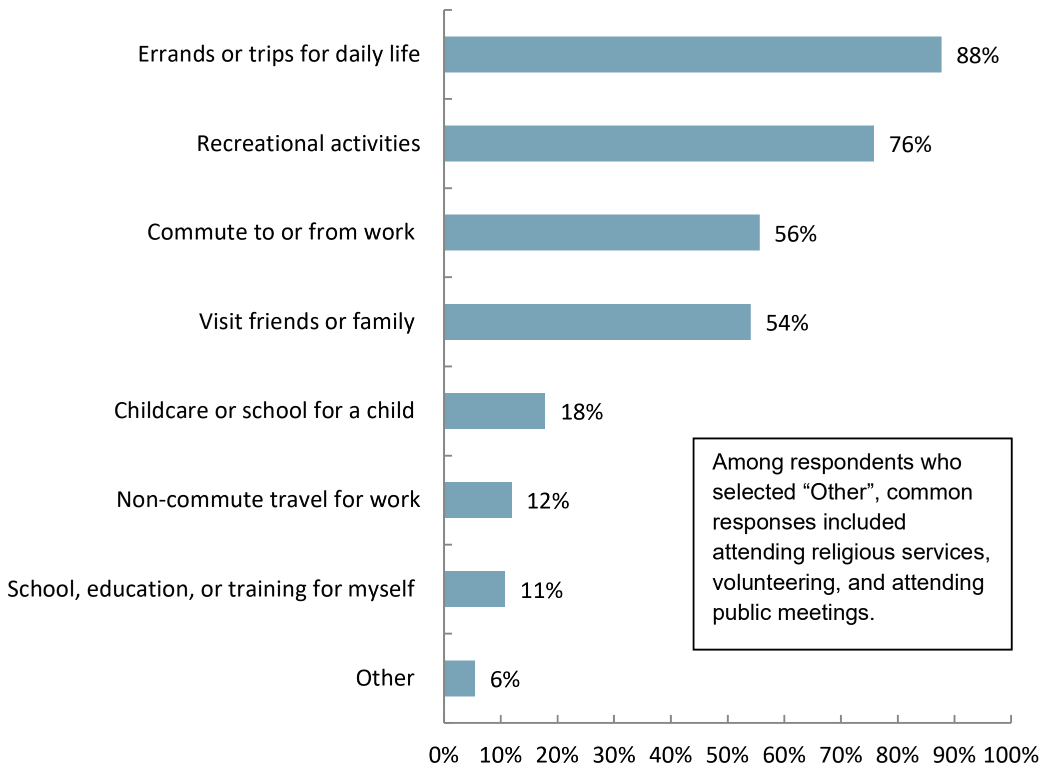
There were no significant correlations between demographic variables and travel frequency. As a reminder, we will only report on significant relationships. Please see page 5 for more information.

Travel purpose

Trips tend to be social, work-related, or for personal business. Errands (88%), recreational activities (76%), commuting to work (56%), and visiting friends or family (54%) make up the majority of trips made to or in Bremerton.

What is the purpose of your travel to or in Bremerton during a typical week?

Base: all respondents (n = 605). Multiple responses allowed. Percentages sum to more than 100%.



Correlations – for additional guidance on interpreting results, see page 5

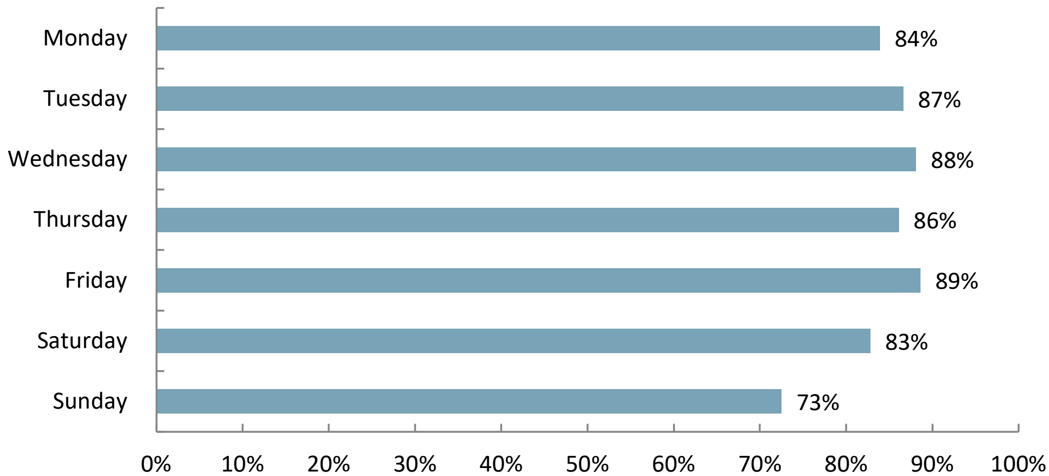
- **City of Bremerton residents** were more likely to travel in or to Bremerton to visit friends or family, for recreation, and/or for errands.
- **Respondents who travel in Bremerton more frequently** were more likely to do so as part of a work commute, to visit friends or family, for recreation, and/or for errands.
- **Younger respondents** were more likely to travel in or to Bremerton as part of a work commute, for school, and/or for childcare.
- **Respondents who identify as female** were less likely to travel in or to Bremerton as part of non-commute travel for work.
- **Respondents with higher incomes** were more likely to travel in or to Bremerton as part of a work commute and/or for recreation.
- **Respondents who identify as BIPOC** were more likely to travel in or to Bremerton for school.

Travel days

Apart from Sunday, results are similar in the number of respondents traveling on any given day of the week. Between 83% and 89% of respondents reported that they travel on a day between Monday and Saturday. Interestingly, the number of people who say they travel on a weekday is not much greater than the number of people who say they travel on a Saturday. Overall, fewer respondents (73%) reported traveling on Sunday.

Please select the days you typically travel in or around Bremerton.

Base: all respondents (n = 603). Multiple responses allowed. Percentages sum to more than 100%.



Correlations

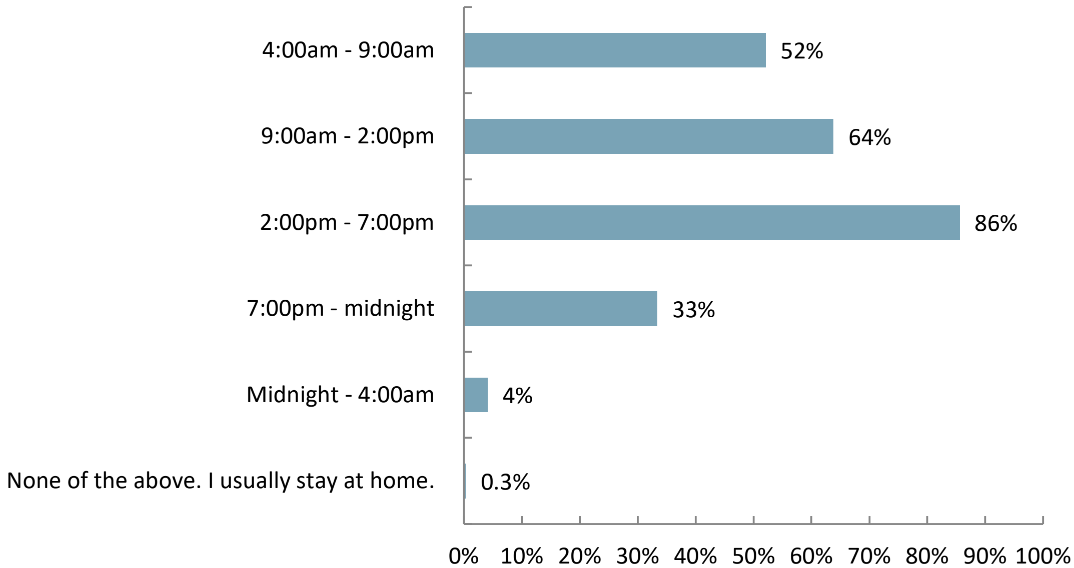
- **City of Bremerton residents** were more likely to typically travel on Friday, Saturday, or Sunday.
- **Younger respondents** were more likely to report travelling in or to Bremerton on Wednesday.

Travel times

Morning schedules appear to vary more widely, whereas most respondents (86%) travel during the afternoon peak. Few respondents said they stay home (0.3%) or travel between midnight and 4:00 a.m. (4%).

Thinking about your typical weekday, what time(s) of day do you usually travel in or around Bremerton?

Base: all respondents (n = 605). Multiple responses allowed.
Percentages sum to more than 100%.



Correlations

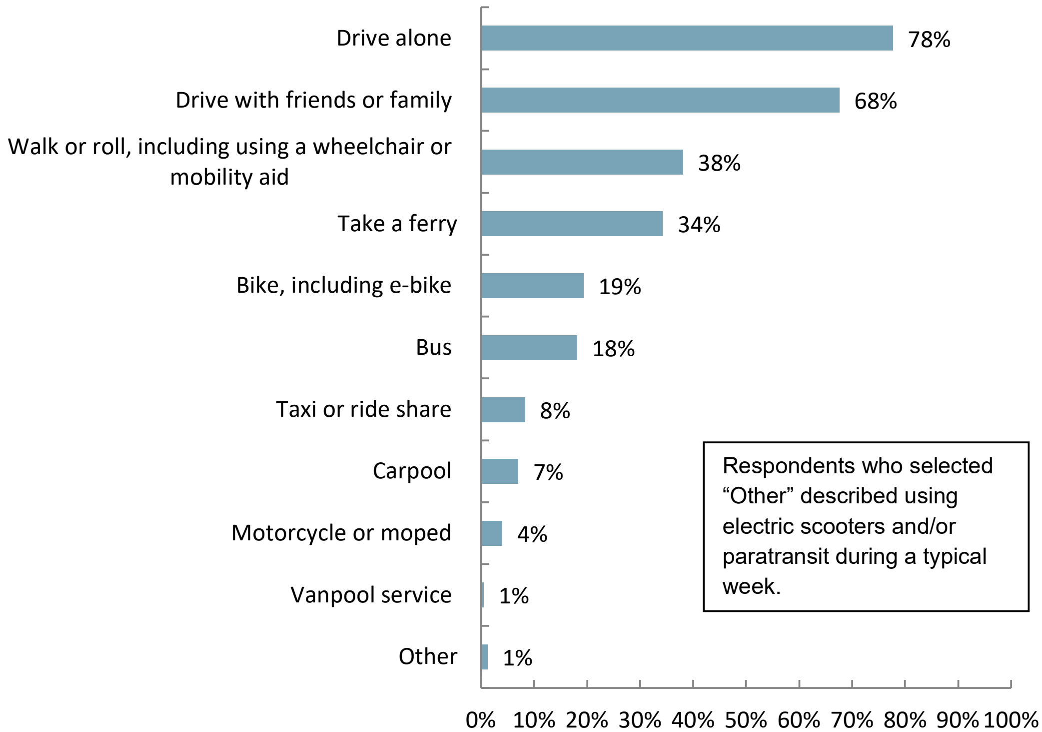
- **Respondents who travel in or around Bremerton more frequently** were more likely to do so between 4:00am and 9:00am, between 2:00pm and 7:00pm, and between 7:00pm and midnight.
- **Younger respondents** were more likely to travel in or around Bremerton from 4:00am to 9:00am.
- **Older respondents** were more likely to travel in or around Bremerton from 9:00am to 2:00pm.
- **Respondents with lower incomes** were more likely to travel in or around Bremerton from 9:00am to 2:00pm.
- **Respondents with higher incomes** were more likely to travel in or around Bremerton between 4:00am and 9:00am.

Travel modes

Driving in a personal vehicle, either alone (78%) or with a friend or family member (68%) remains the top travel mode. Active transportation modes like walking (38%) and biking (19%) ranked second, closely followed by transit modes like taking the ferry (34%) and riding the bus (18%).

Thinking about your travel during a typical week, which of the following do you use to travel?

Base: all respondents (n = 601). Multiple responses allowed. Percentages sum to more than 100%.



Correlations

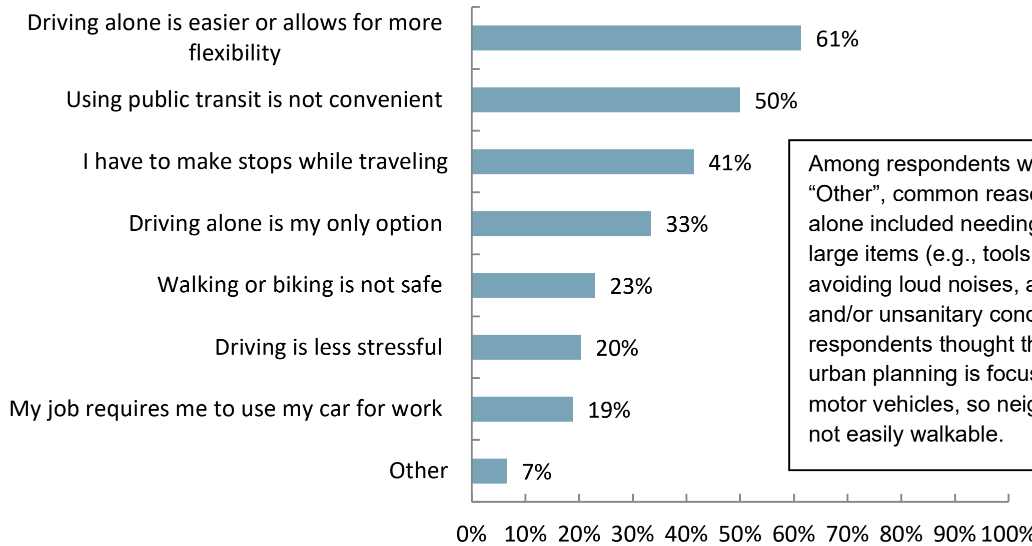
- **People who travel more frequently** were more likely to drive alone and/or walk to get to where they need to go.
- **City of Bremerton residents** were more likely to walk for their trips.
- **BIPOC** respondents were more likely to travel by bus.

Top reasons for driving alone

Reasons for driving alone related to convenience. About two-thirds (61%) reported they drive alone because it was easier or more flexible than other travel modes. Half (50%) said transit is not convenient, and 41(%) pointed to multiple stops during a single trip. Safety (23%), stress (20%), and work-needs (19%) ranked much lower.

What are the top reasons you drive alone instead of using other travel modes for your travel?

Base: all respondents who drive alone to travel (n = 463). Multiple responses allowed. Percentages sum to more than 100%.



Among respondents who selected "Other", common reasons for driving alone included needing to transport large items (e.g., tools, lumber), avoiding loud noises, air pollution, and/or unsanitary conditions. Some respondents thought that Bremerton's urban planning is focused on private motor vehicles, so neighborhoods are not easily walkable.

Correlations

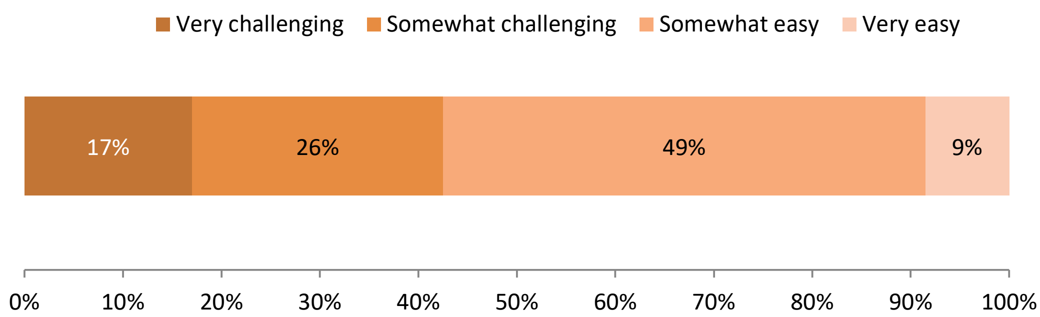
- **People who travel in or around Bremerton more frequently** were more likely to select "I have to make stops while traveling" and "using public transit is not convenient" as reasons for driving alone.

Barriers and opportunities to using transportation services

Perceptions of using the bus

Almost half (43%) of respondents who use the bus find using the bus challenging, and 17% consider it very challenging. Only 9% consider the bus "very easy".

How would you describe the ease of using the bus?
Base: all respondents who use the bus to travel to or in Bremerton
(n = 47).

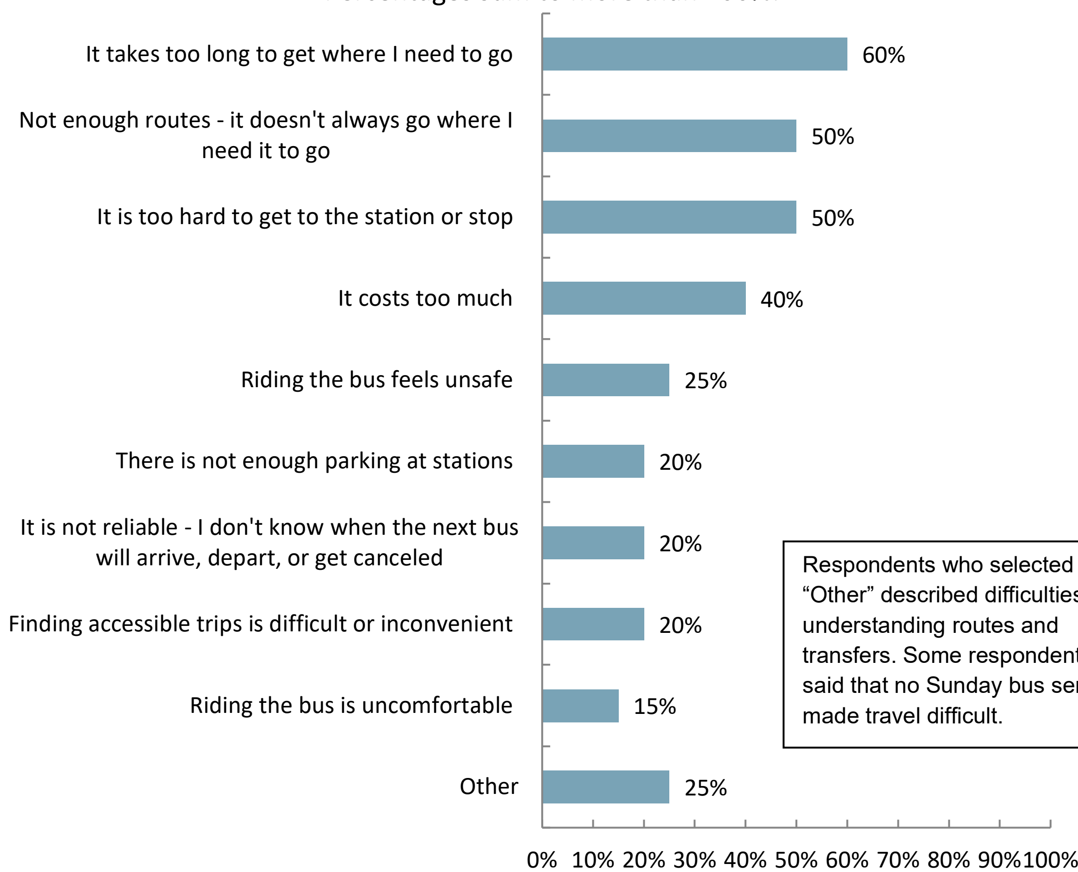


Barriers to using the bus

Time commitment and features of the service network are top challenges to using the bus. Many survey respondents who found using the bus challenging said the bus takes too long (60%), does not have enough routes (50%), or it is difficult to get to a station or stop (50%). Parking (20%), reliability (20%), accessibility (20%), and comfort (15%) ranked lower, but many respondents still reported these challenges.

What challenges do you face when using the bus?

Base: all respondents who use the bus to travel to or in Bremerton AND consider it challenging (n = 20). Multiple responses allowed. Percentages sum to more than 100%.



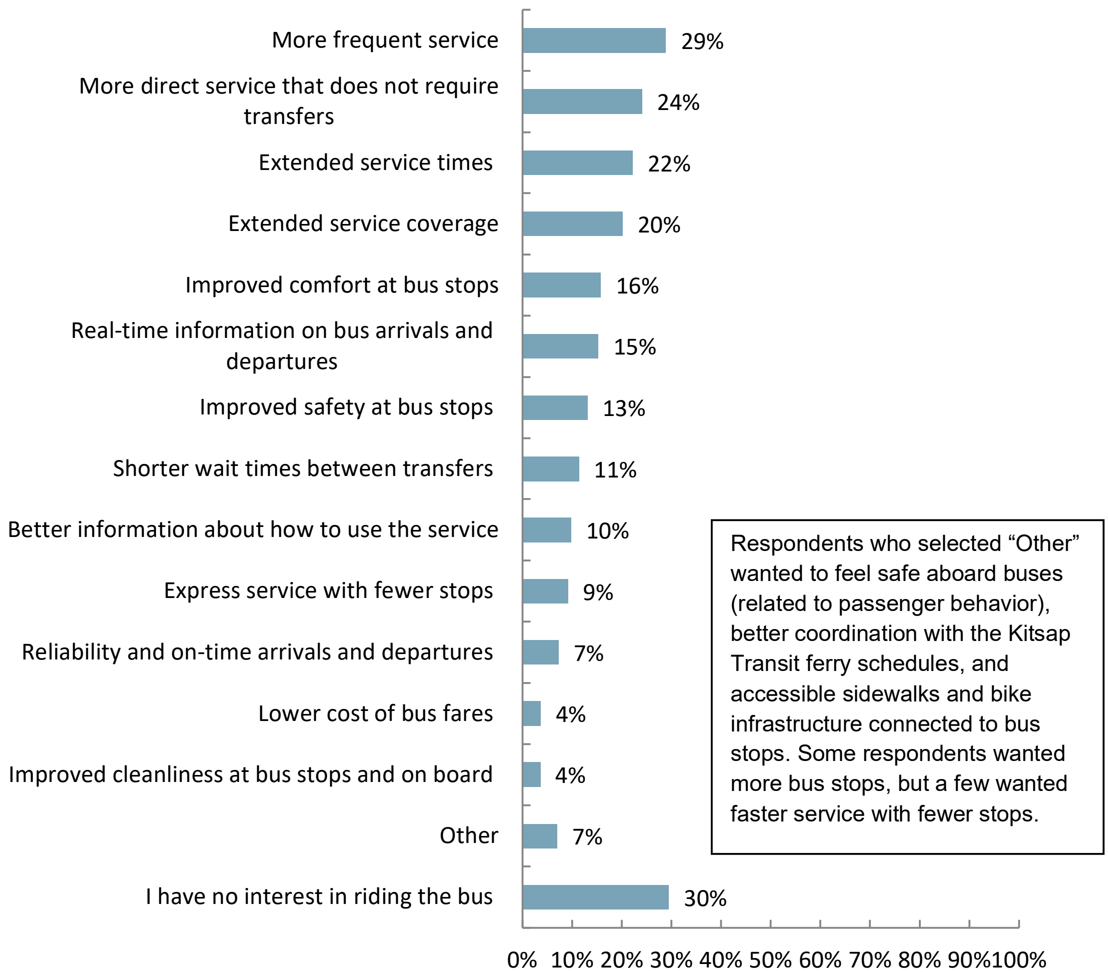
Respondents who selected "Other" described difficulties understanding routes and transfers. Some respondents said that no Sunday bus service made travel difficult.

Opportunities to improve bus ridership

More comprehensive service, meaning service that is more frequent (29%), direct (24%), and offering more times (22%) and coverage (20%), may motivate Bremerton residents to use the bus more often. These results underscore that convenience matters for mode choice.

What would motivate you to use the bus more often for travel?

Base: all respondents (n = 589). Multiple responses allowed. Percentages sum to more than 100%.



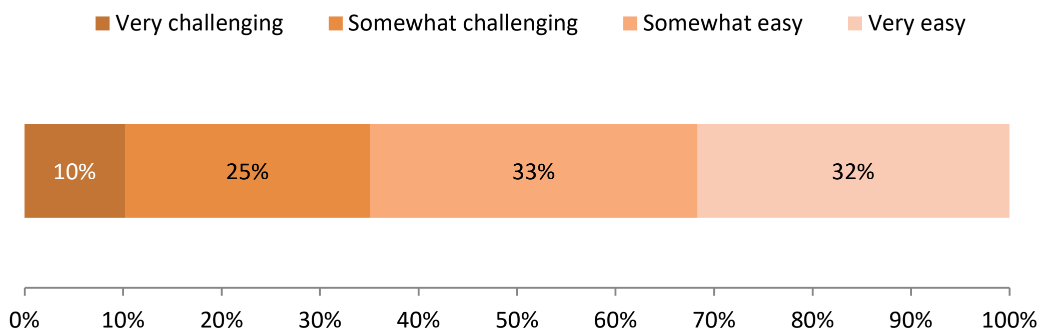
Correlations

- **Younger respondents** were more likely to be motivated by extended service times and improved comfort at bus stops.
- **Older respondents** were more likely to have no interest in using the bus.
- **Respondents with higher incomes** were more likely to be motivated by real-time information about arrivals and departures.

Perceptions of using the ferry

About two-thirds of respondent's report using the ferry is somewhat (33%) or very (32%) easy. Although roughly one-third (35%) consider it challenging, only 10% of respondents describe using the ferry as very challenging.

How would you describe the ease of using the ferry?
Base: all respondents who use the ferry to travel to or in Bremerton
(n = 205).



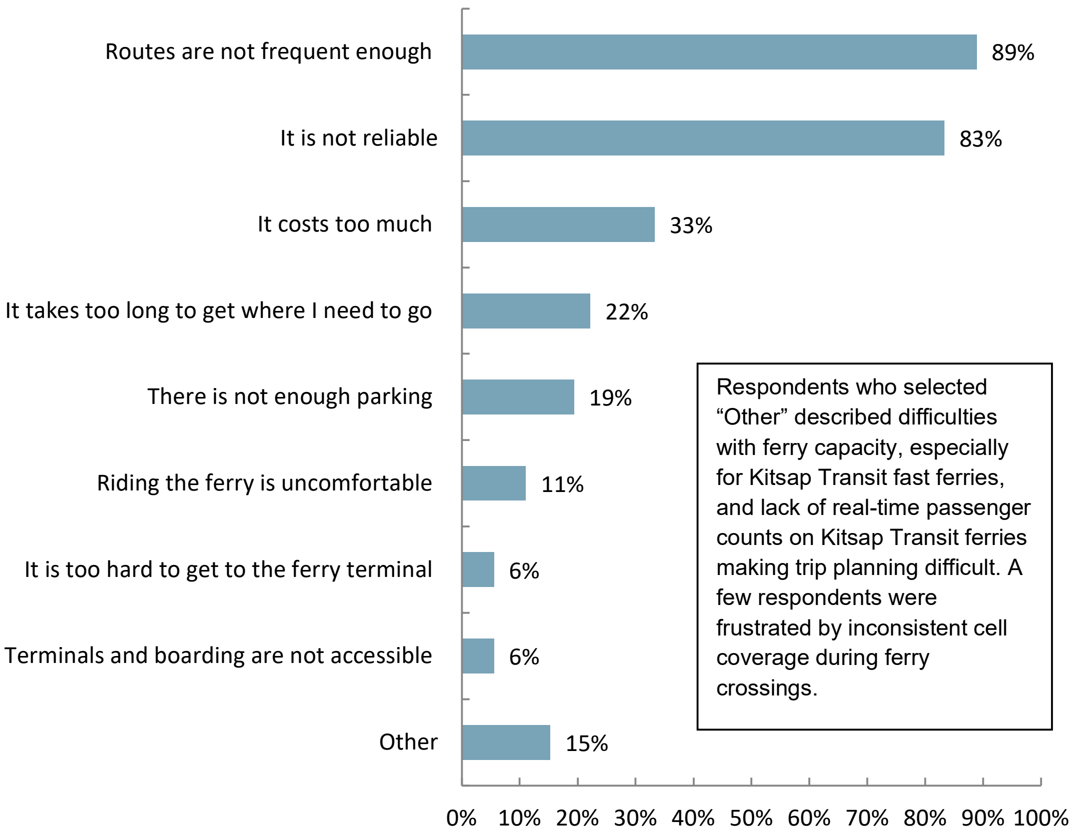
Correlations

- **Respondents with higher incomes** were more likely to rate the ease of using the ferry highly.

Barriers to using the ferry

Lack of service frequency (89%) and reliability (83%) are top barriers to using the ferry.

What are the challenges you face when using the ferry?
Base: all respondents who use the ferry to travel to or in Bremerton and consider it challenging (n = 72). Multiple responses allowed. Percentages sum to more than 100%.

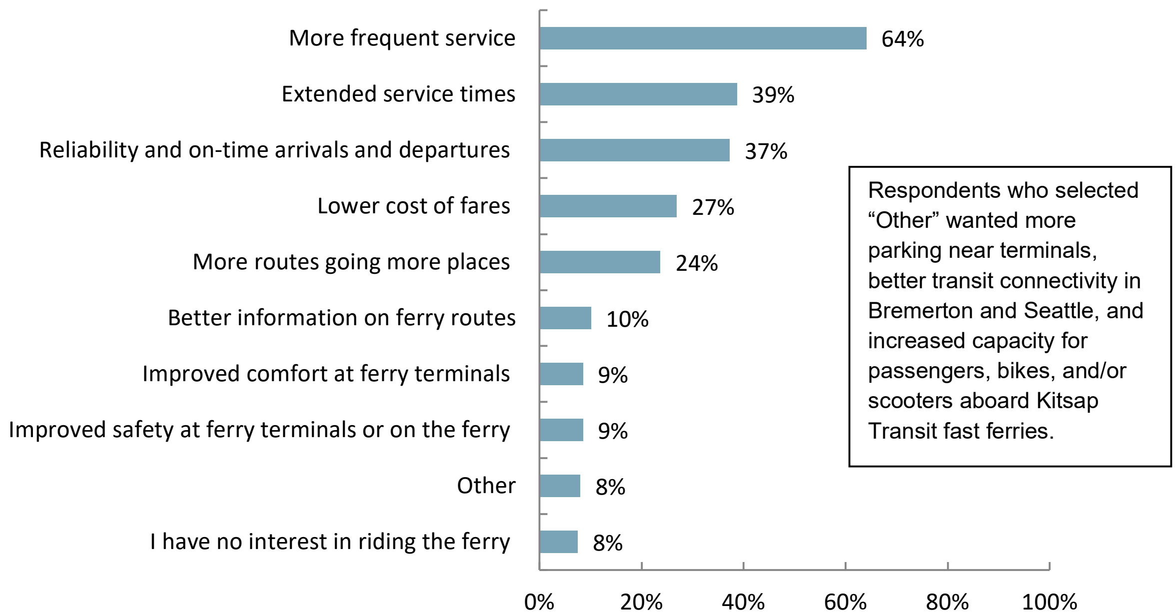


Opportunities to improve ferry ridership

More frequent service (64%) may motivate respondents to use the ferry more often. Extended service times (39%) and improved reliability (37%) may also encourage more residents to use the ferry.

What would motivate you to use the ferry more often?

Base: all respondents (n = 587). Multiple responses allowed. Percentages sum to more than 100%.



Correlations

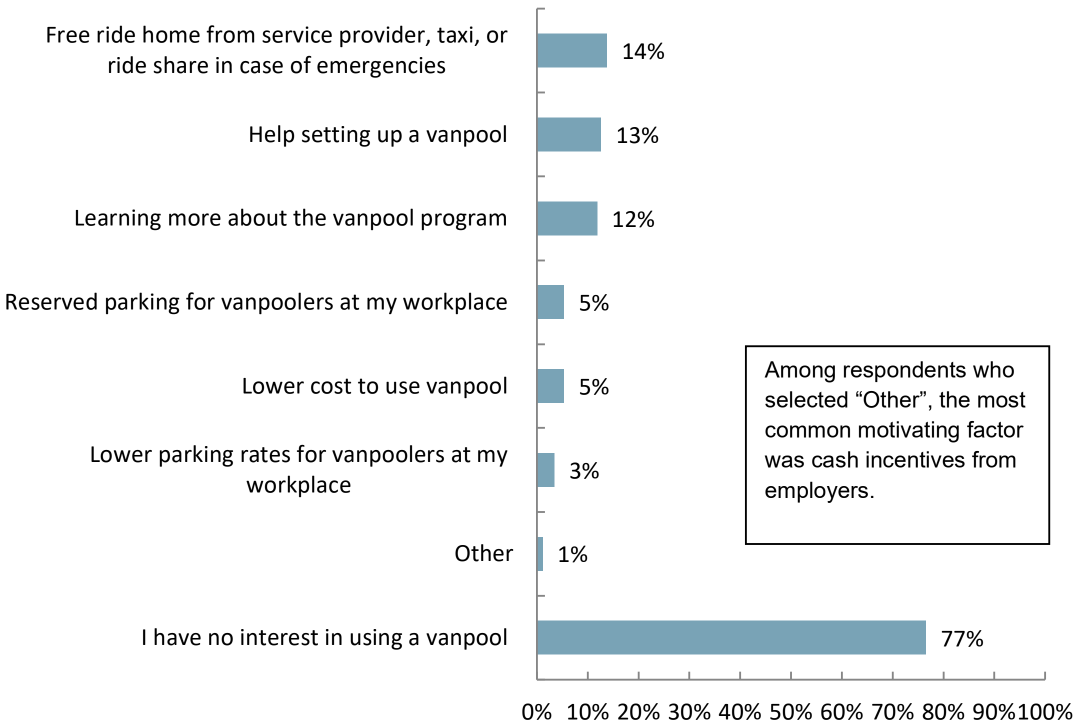
- **Younger respondents** were more likely to be motivated by extended ferry service times.
- **Respondents with higher incomes** were more likely to be motivated by more frequent service.
- **BIPOC respondents** were more likely to be motivated by improved comfort at ferry terminals.

Opportunities to improve vanpool*+

Incentives, support, and information may encourage people to use vanpool more often. Free ride home (14%), support setting up services (13%) and learning more about the program (12%) would motivate respondents to use vanpool more often. However, more than three-quarters of respondents (77%) said they are not interested in using a vanpool. This is much higher than the number of respondents not interested in carpool (see page 22, 66%) or biking (see page 25, 44%).

What would motivate you to use a vanpool more often?

Base: all respondents (n = 358). Multiple responses allowed.
Percentages sum to more than 100%.



Correlations

- **Respondents who travel in or around Bremerton less frequently** were more likely to be motivated by reserved parking for vanpoolers.
- **Respondents who travel in or around Bremerton more frequently** were more likely to report that they had no interest in using a vanpool.
- **Younger respondents** were more likely to be motivated by learning more about vanpool programs, however, young respondents were also more likely to report that they had no interest in using a vanpool.
- **Respondents with higher incomes** were more likely to report that they had no interest in using a vanpool.
- **BIPOC respondents** were more likely to be motivated by learning more about vanpool programs.

*****All respondents who use a vanpool to travel in or around Bremerton (n = 3) were asked “How would you rate the ease of using vanpool?” Two out of the three respondents reported using a vanpool as very easy. One person reported using a vanpool was somewhat challenging.

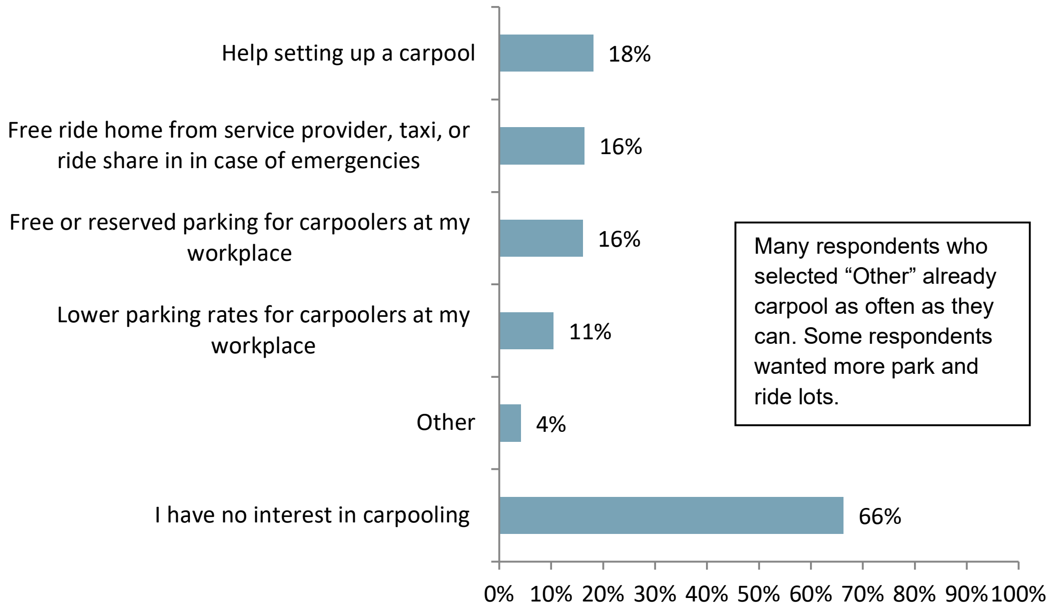
+ The respondent that uses a vanpool to travel in or around Bremerton and considers it challenging (n = 1) was asked “What are the challenges you face when using vanpool?” The respondent reported employer does not offer a vanpool program as a benefit, cannot find people willing to join a vanpool and who live nearby and have a similar schedule as challenges to using a vanpool.

Opportunities to improve carpool

Similar to vanpool, incentives and support may encourage residents to carpool more often. Support setting up services (18%) and free services (ride home and parking,16%) would motivate respondents to use carpool more often. In contrast with vanpool (77%), fewer respondents said they have no interest in carpool (66%).

What would motivate you to carpool more often?

Base: all respondents (n = 353). Multiple responses allowed. Percentages sum to more than 100%.

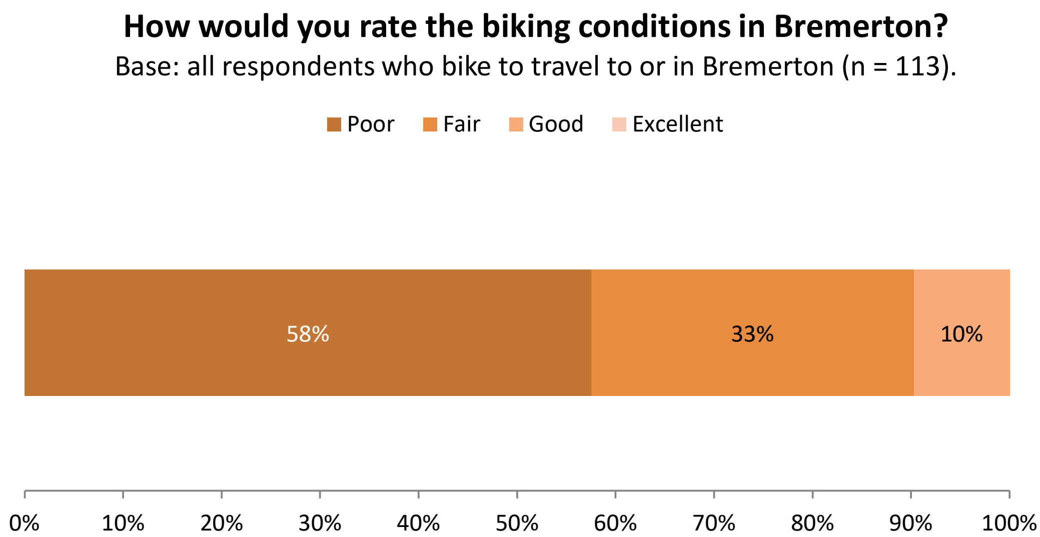


Correlations

- **Respondents who travel in or around Bremerton less frequently** were more likely to be motivated by reserved parking for carpoolers.
- **Respondents who travel in or around Bremerton more frequently** were more likely to report that they had no interest in carpooling.
- **Younger respondents** were more likely to be motivated by each of the options listed in the survey, but were also more likely to report that they had no interest in carpooling.
- **Respondents with higher incomes** were more likely to report that they had no interest in carpooling.
- **BIPOC respondents** were more likely to be motivated by reserved parking for carpoolers and/or lower parking rates for carpoolers.

Perceptions of biking conditions

Over half (58%) of respondents thought the biking conditions in Bremerton were poor. Only 10% of respondents thought the biking conditions were good, and no one considered conditions “excellent”.



Correlations

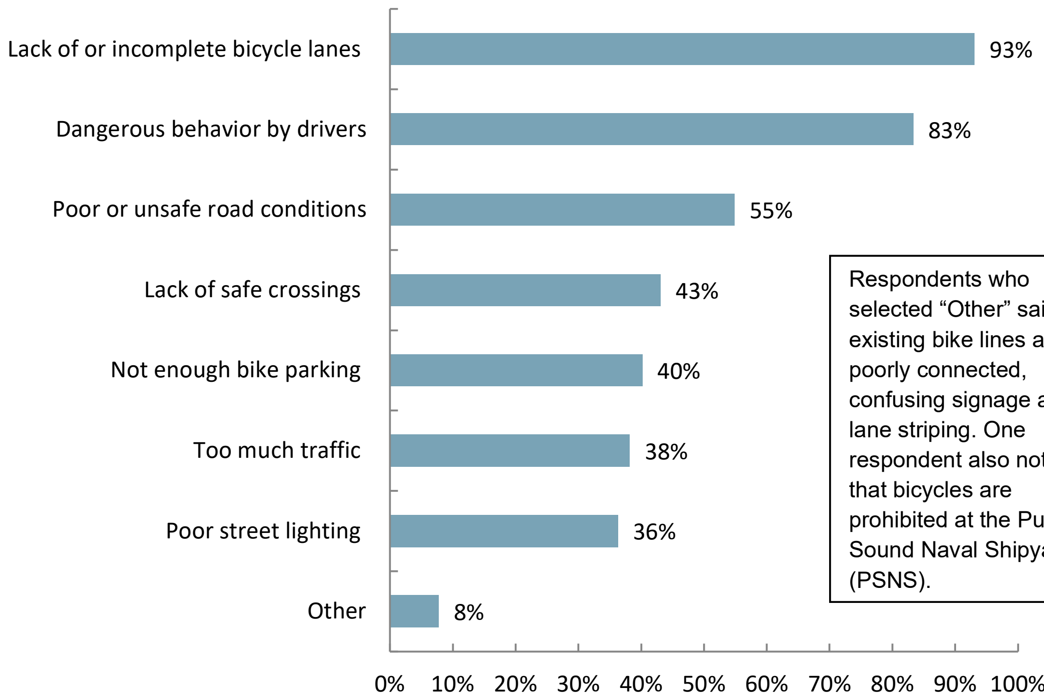
- **Respondents who identify as male** were more likely to rate bike conditions favorably.
- **Respondents who identify as female** were less likely to rate bike conditions favorably.

Barriers to biking

Lack of safety may be the greatest barrier to biking in Bremerton. Lack or incomplete bicycle lanes (93%) and dangerous behaviors from drivers (83%) top the list of barriers to biking.

What are the challenges you face when biking?

Base: all respondents who bike to travel to or in Bremerton and consider the conditions as poor or fair (n = 102). Multiple responses allowed. Percentages sum to more than 100%.



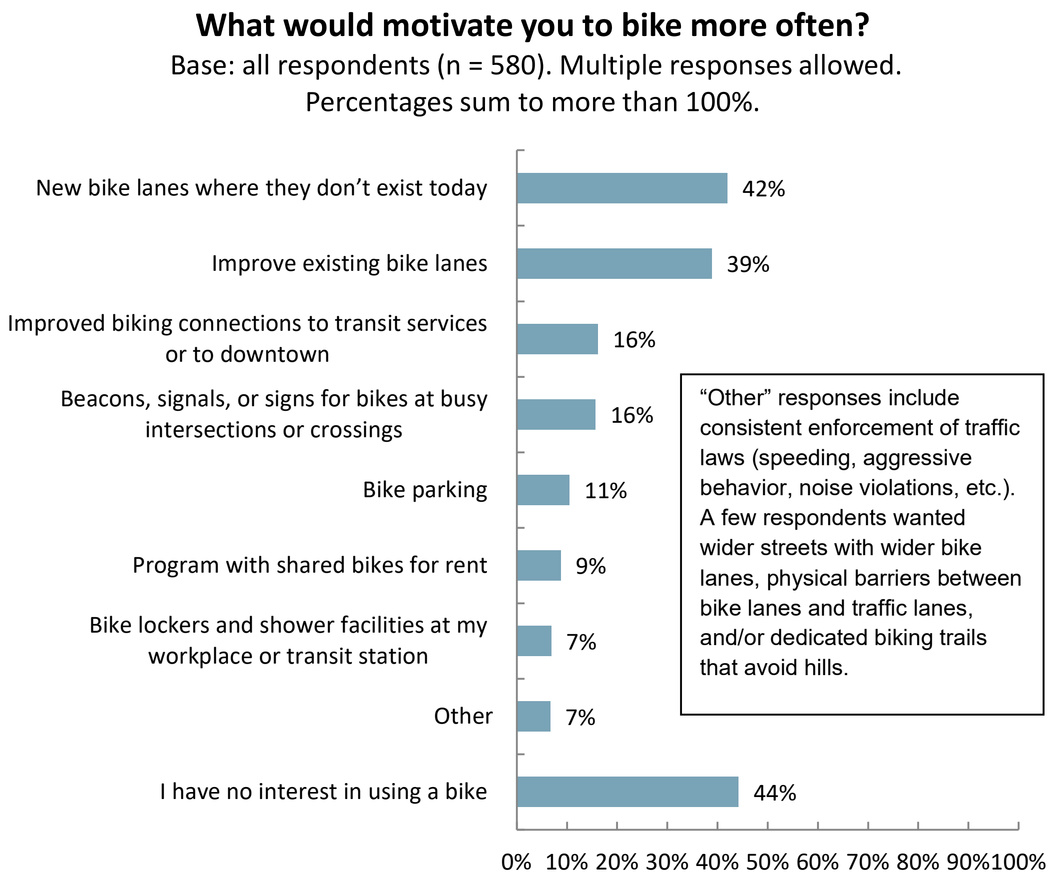
Respondents who selected “Other” said existing bike lines are poorly connected, confusing signage and/or lane striping. One respondent also noted that bicycles are prohibited at the Puget Sound Naval Shipyard (PSNS).

Correlations

- **Respondents who identify as male** were more likely identify a lack of or incomplete bicycle lanes as a challenge while cycling.

Opportunities to improve biking

Improved safety conditions, especially bike lanes, may encourage people to bike more often. New (42%) and improved (39%) bike lanes would motivate respondents to bike more often. Incentives such as parking (11%), shared bike services (9%), lockers and showers (7%) have less appeal. In contrast with other drive-alone alternatives, fewer respondents said they have **no** interest in biking. Only 44% of respondents expressed this sentiment, compared to 77% for vanpool and 66% for carpool.



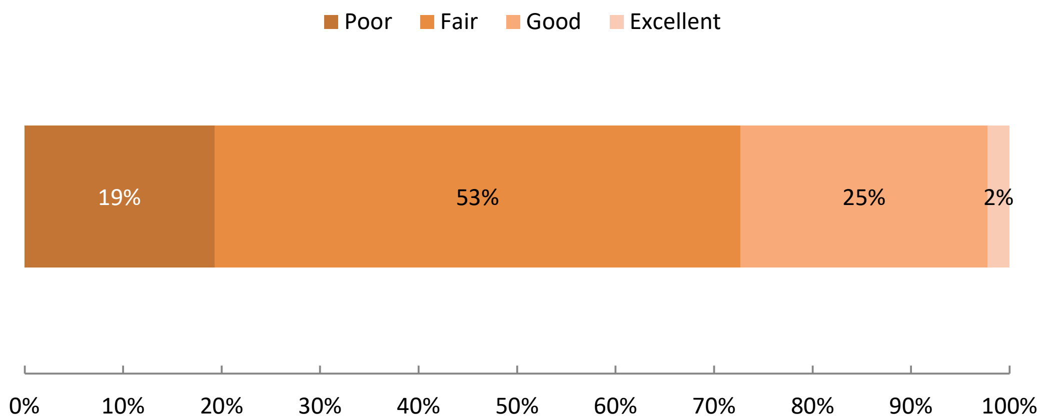
Correlations

- **City of Bremerton residents** were less likely to report that they had no interest in biking for travel.
- **Respondents who identify as female** and/or **older respondents** were more likely to report that they had no interest in biking for travel.
- **Younger respondents** were more likely to be motivated by new bike lanes, improved existing bike lines, and/or programs with shared bikes for rent.
- **Respondents with higher incomes** were more likely to be motivated by new bike lanes, improved existing lanes, and/or crossing signals at busy intersections.

Perceptions of walking conditions

In general, respondents do not think highly of walking conditions in Bremerton. Over half (53%) rated conditions as fair, and 19% rated conditions as poor. Only 2% rated conditions excellent.

How would you rate walking conditions in Bremerton?
Base: all respondents who walk or roll to travel to or in Bremerton (n = 223).



Correlations

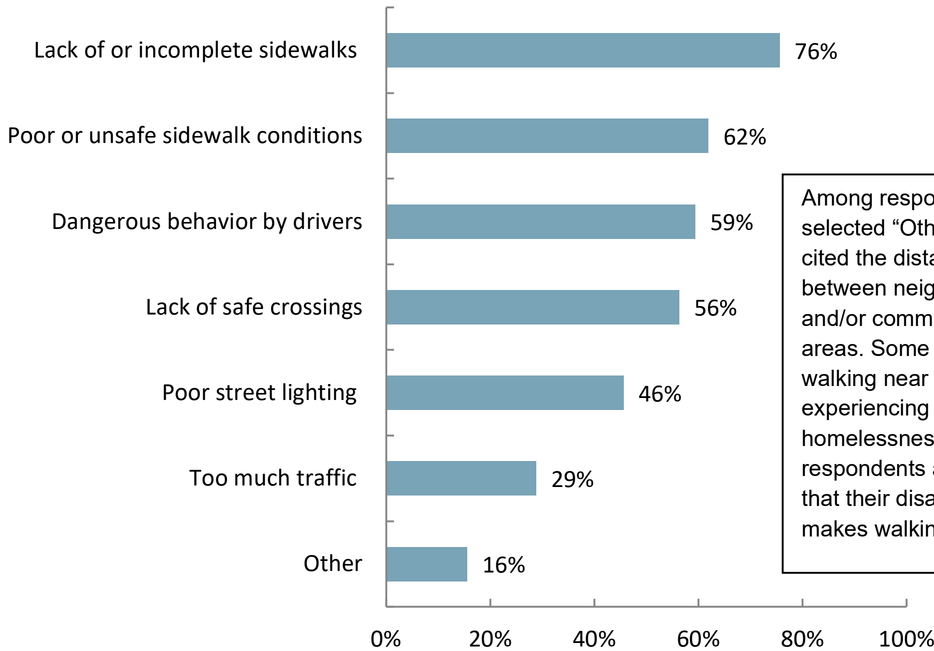
- **City of Bremerton residents** were more likely to rate walking conditions more favorably.

Barriers to walking or rolling

Again, safety is a top barrier to walking or rolling, both in terms of physical infrastructure (sidewalks, crossings, lighting) and behavior (unsafe drivers). Lack of or incomplete sidewalks (76%), poor sidewalk conditions (62%), dangerous behavior from drivers (59%), and lack of safe crossings (56%) are the top barriers when walking.

What are the challenges you face when walking?

Base: all respondents who walk or roll to travel to or in Bremerton and think the conditions are poor or fair (n = 160). Multiple responses allowed. Percentages sum to more than 100%.



Among respondents who selected "Other", some cited the distance between neighborhoods and/or commercial areas. Some felt unsafe walking near people experiencing homelessness. A few respondents also noted that their disability makes walking difficult.

Correlations

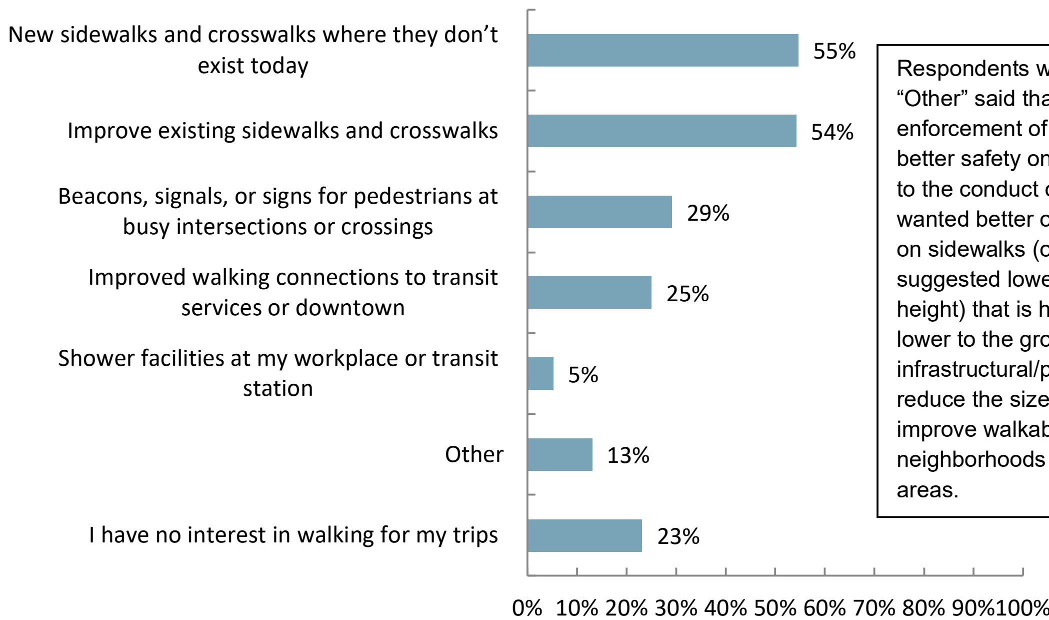
- **Respondents who travel in Bremerton more frequently** more likely to identify a lack of or incomplete sidewalks as a challenge when walking.
- **Respondents with higher incomes** were more likely to identify a lack of or incomplete sidewalks, and a lack of safe crossings, as challenges.

Opportunities to improve walking or rolling

Safety improvements, especially related to physical infrastructure (sidewalks, crossings, connections), may encourage people to walk or roll more often. New (55%) and improved (54%) sidewalks and crosswalks would motivate respondents to walk for their trips more often.

What would motivate you to walk more often for your trips?

Base: all respondents (n = 577). Multiple responses allowed. Percentages sum to more than 100%.



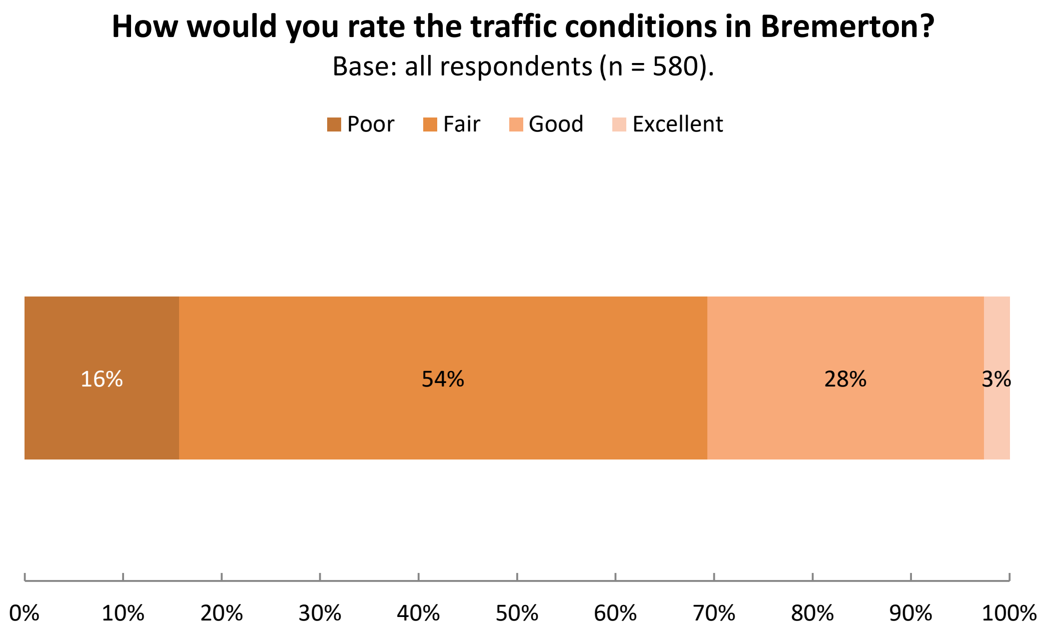
Respondents who selected "Other" said that better enforcement of traffic laws or better safety on sidewalks related to the conduct of others. Some wanted better or different lighting on sidewalks (one participant suggested lower lighting (bollard height) that is higher quality and lower to the ground, or major infrastructural/planning reforms to reduce the size of city blocks to improve walkability in neighborhoods and commercial areas.

Correlations

- **Respondents who travel in or around Bremerton less frequently** were more likely to be motivated by shower facilities at their workplace or transit station.
- **Younger respondents** were more likely to be motivated by improved walking connections to transit services or downtown and/or by shower facilities at their workplace or transit station.
- **Older respondents** were more likely to report that they had no interest in walking for their trips.
- **BIPOC respondents** were more likely to be motivated by shower facilities at their workplace or transit station.

Perceptions of traffic conditions

In general, respondents do not think highly of traffic conditions in Bremerton. Over half (54%) rated conditions as fair, and 16% rated conditions as poor. Only 3% rated conditions excellent.



Correlations

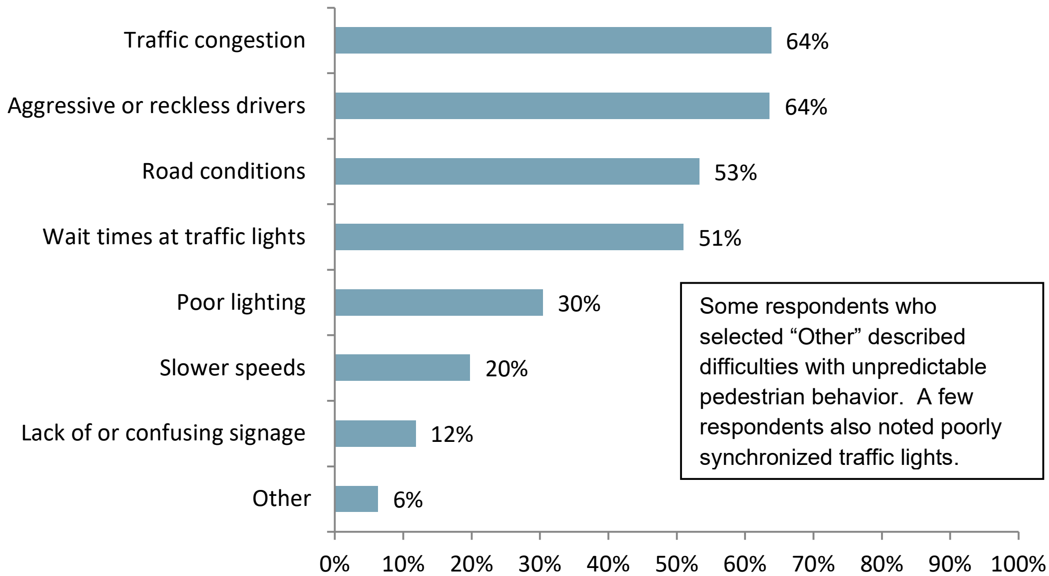
- **Respondents with higher incomes** were more likely to rate traffic conditions more favorably.

Perceptions of traffic issues

Other drivers, including traffic congestion (64%) and dangerous drivers (64%), top the list of traffic issues. Absent or confusing signage (12%) and slower speeds (20%) are less salient.

What traffic issues do you experience in Bremerton?

Base: respondents who thought traffic conditions were poor or fair (n = 398). Multiple responses allowed. Percentages sum to more than 100%.



Correlations

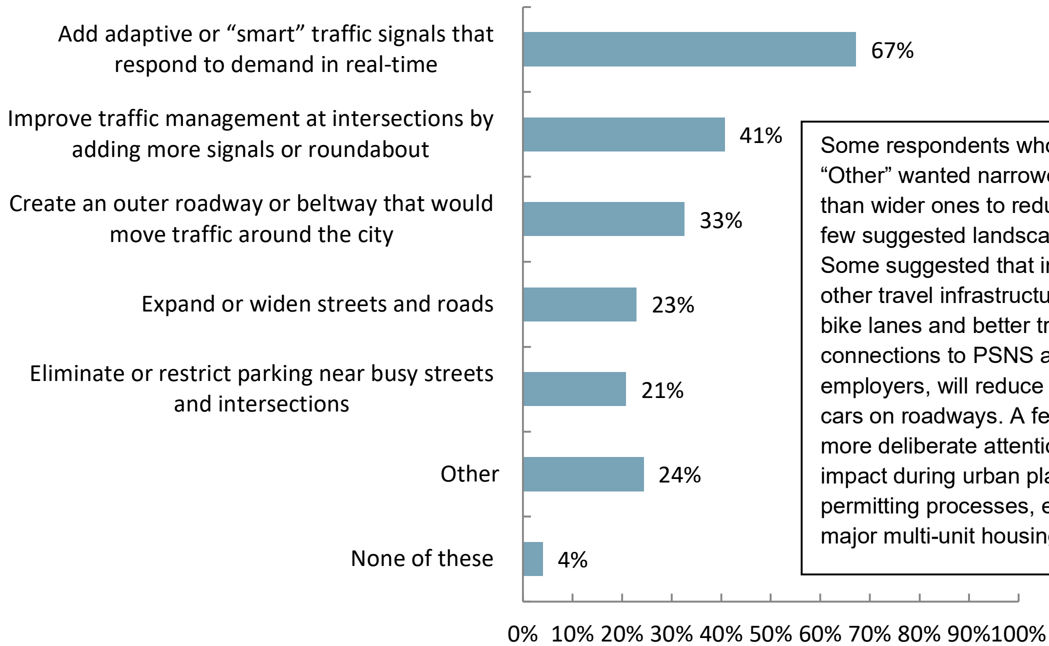
- **Respondents who have lived in Bremerton longer** were more likely to identify poor lighting as a challenge.

Opportunities for traffic improvements

Many respondents leaned towards technological solutions to improve traffic conditions. Over two-thirds (67%) thought smart or adaptive traffic signals would improve conditions. Many pointed to signals or roundabouts (41%) or an outer roadway (33%).

Which of the following do you think will improve traffic conditions in Bremerton?

Base: all respondents (n = 573). Multiple responses allowed.
Percentages sum to more than 100%.



Some respondents who selected "Other" wanted narrower streets rather than wider ones to reduce speeding. A few suggested landscaped medians. Some suggested that improvements to other travel infrastructure, such as safer bike lanes and better transit connections to PSNS and other major employers, will reduce the number of cars on roadways. A few suggested more deliberate attention to traffic impact during urban planning and permitting processes, especially about major multi-unit housing developments.

Correlations

- **Respondents who identify as male** were more likely to select "improve traffic management at intersections by adding more signals or roundabouts."
- **Respondents with higher incomes** were more likely to select "add adaptive or "smart" traffic signals that respond to demand in real-time".

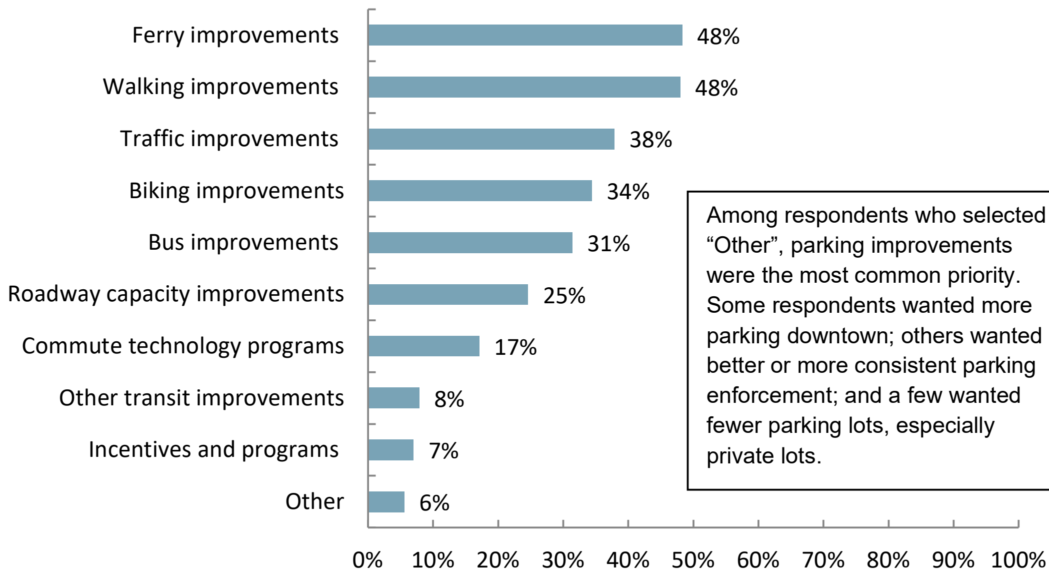
Priorities for improvements

Improvement priorities

Respondents said ferry (48%) and walking (48%) improvements were among the most important projects to improve travel in Bremerton. Incentives and programs (7%) sat at the bottom of the list.

Which transportation improvements are most important to you?

Base: all respondents (n = 575). Multiple responses allowed.
Percentages sum to more than 100%.



Among respondents who selected "Other", parking improvements were the most common priority. Some respondents wanted more parking downtown; others wanted better or more consistent parking enforcement; and a few wanted fewer parking lots, especially private lots.

Correlations

- **Respondents who identify as female** were more likely to prioritize walking improvements.
- **Respondents who have lived in Bremerton longer** were more likely to prioritize roadway capacity improvements.
- **Respondents with higher incomes** were more likely to prioritize biking improvements and ferry improvements.

Key survey comments and feedback

Respondents to the open-ended question *"Did we miss anything? What else should we consider to improve travel in Bremerton? Please briefly describe them here."* (n = 304) suggested investing in transportation infrastructure, traffic management, active transportation infrastructure, and alternative transportation services.

- "A few participants" denotes themes that two or three participants discussed in their comments.
- "Some participants" denotes themes that four to seven participants discussed in their comments.
- "Many participants" denotes themes that eight or more participants discussed in their comments.

Transportation Infrastructure and Traffic Management

- **Improve road maintenance**. Many participants noted large cracks or potholes on roads and streets make driving unnecessarily dangerous.
- **Reduce speeding on roads and streets.** Some participants shared suggestions like adding speed bumps, greenbelts, or roundabouts. Participants had mixed opinions on whether roundabouts would be an effective solution. Some noted that drivers who do not know how to use a roundabout could cause collisions.
- **Improve parking management.** Participants offered parking suggestions including satellite parking or adding more park and ride lots supported by shuttle services downtown. Some participants said they wanted less surface parking and/or smaller lots downtown. A few participants wanted more dedicated accessible parking for people with a disability.
- **Add covered shelter at bus stops.** Some participants wanted more covered shelters at bus stops.
- **Reduce traffic congestion.** Some participants suggested adaptive traffic signals. Participants had mixed opinions on unprotected left turns and being able to turn right during a red light, and whether these features should be increased throughout Bremerton. A specific pain point for some participants is traffic congestion caused by shift changes at the Puget Sound Naval Shipyard.

Active Transportation Improvements

- **Reduce car dependency.** Participants wanted to see more connectivity across transportation services to reduce car dependency in Bremerton.
- **Improve sidewalk maintenance**. Some participants noted that poor lighting made it difficult to walk at night.
- **Add more sidewalks and crosswalks.** Many participants wanted more sidewalks and crosswalks outside of the downtown core.
- **Add more protected bike lanes and biking trials.** Some participants wanted protected bike lanes (physical barriers between bike lanes and roadways). Others wanted dedicated scenic biking trails.

Transit Service Improvements

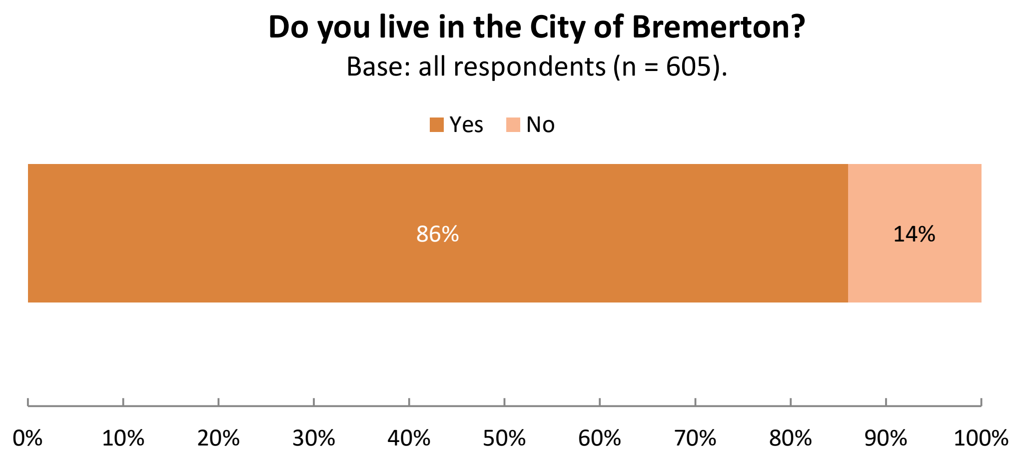
- **Add more frequent bus services.** Some participants wanted more regular service on Sundays and in the late evenings. Others wanted more service during peak hours, and a few suggest reducing service during off-peak hours.
- **Add more affordable transit opportunities.** Some participants suggested a trolley or other free/low-cost hop-on service.
- **Improve or add more frequent ferry services.** Many participants are dissatisfied with Washington State Ferries (WSF) single-boat service to Bremerton. Many participants liked the Kitsap Transit fast ferry but wanted more regular service on weekends, especially Sundays.
    - A few participants wanted ferry service to from Bremerton to Silverdale and Bainbridge Island.
- **Provide scooter and bike share rentals.** Some participants supported rentable micro transit options, such as bikes or Lime scooters.
- **Improve transit connectivity.** Some participants suggested strengthening coordination between Kitsap Transit, Washington State Department of Transportation (WSDOT), Department of Defense (DOD), and the city's services to improve service connectivity, increase transit use or reduce driving dependency.

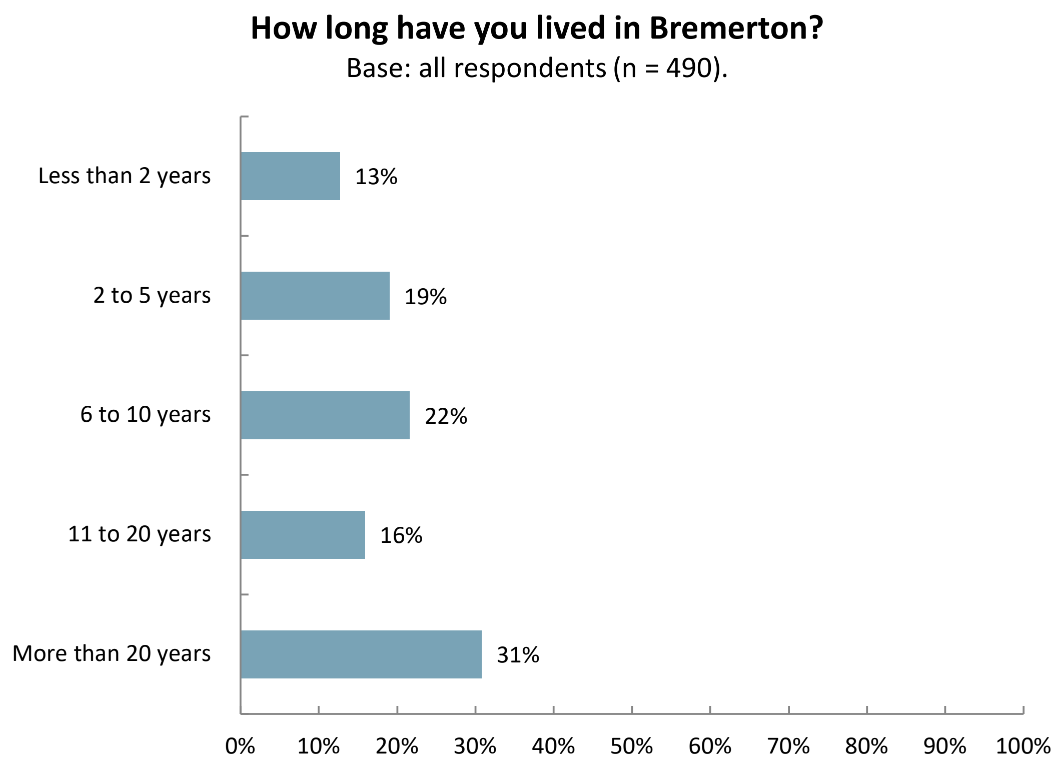
Other Improvements

- **Update zoning and city planning policies to make neighborhoods more walkable or accessible**. Some participants advocated for significant zoning and urban planning updates to develop more walkable commercial areas within neighborhoods.
- **Increase enforcement.** Many participants are dissatisfied with the lack of traffic law enforcement. A few suggested speed traps or patrols to crack down on reckless driving.
    - Some participants wanted more consistent parking enforcement.
- **Collaborate with businesses to create incentive programs for carpoolers.** Some participants wanted the city to encourage businesses to develop incentive programs for employees who carpool.
- **Educate community members on transportation services and improvements.** Some participants wanted better education about multimodal transit and successful transit infrastructure models from other cities and/or countries.

Appendices

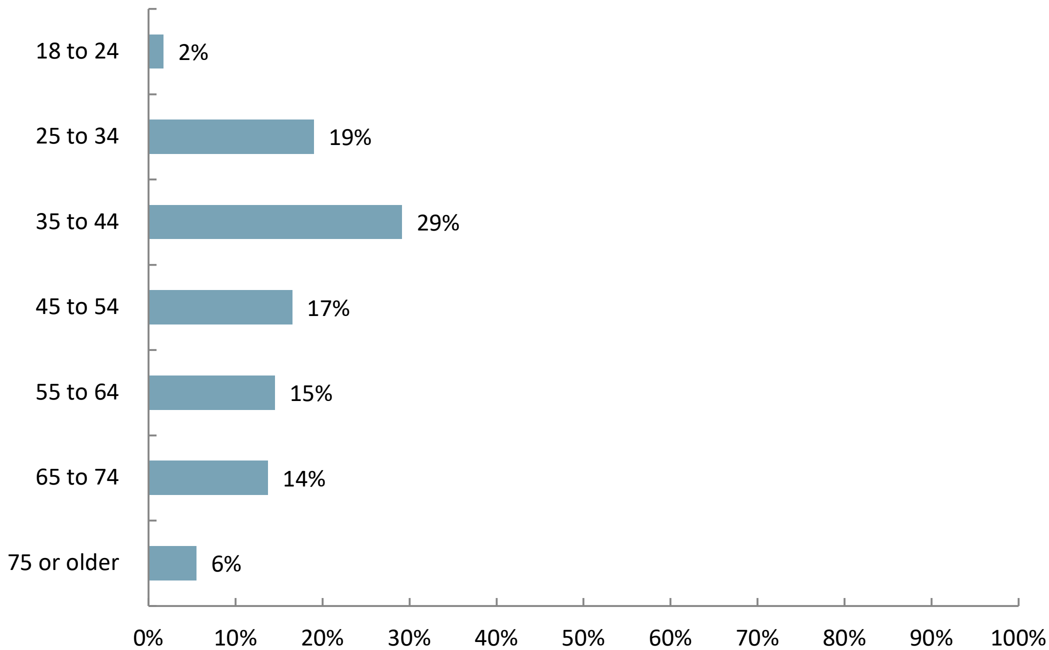
Appendix A: Survey respondent demographic profile





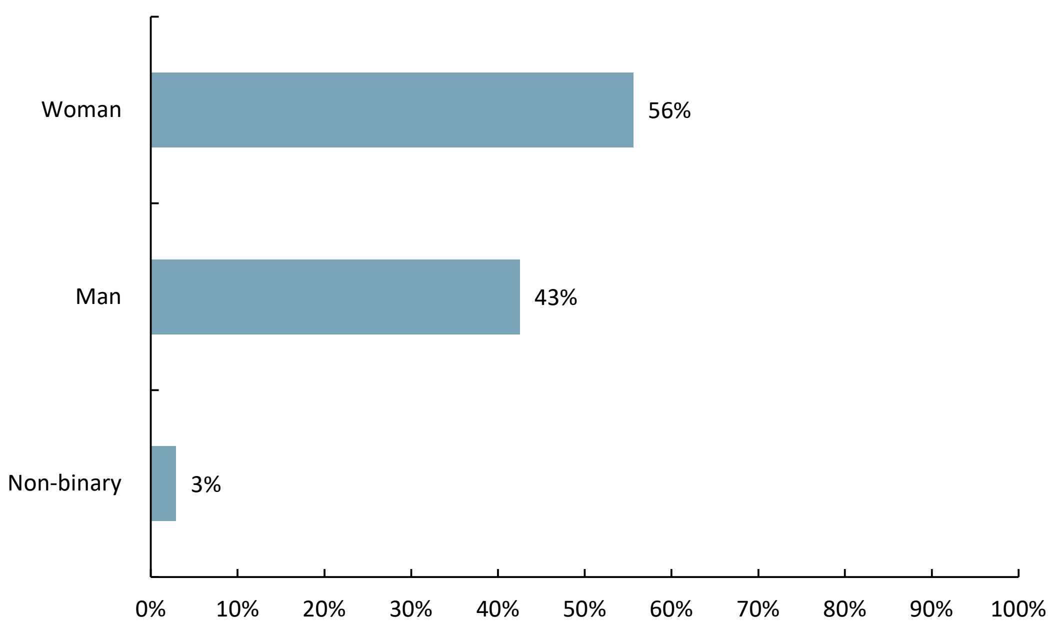
What is your age?

Base: all respondents (n = 605).

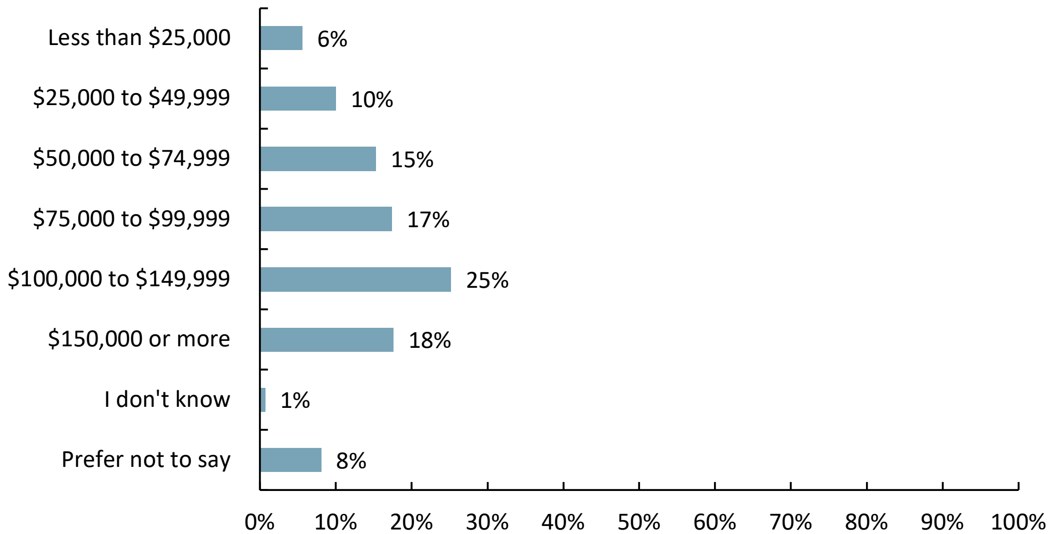


How do you identify?

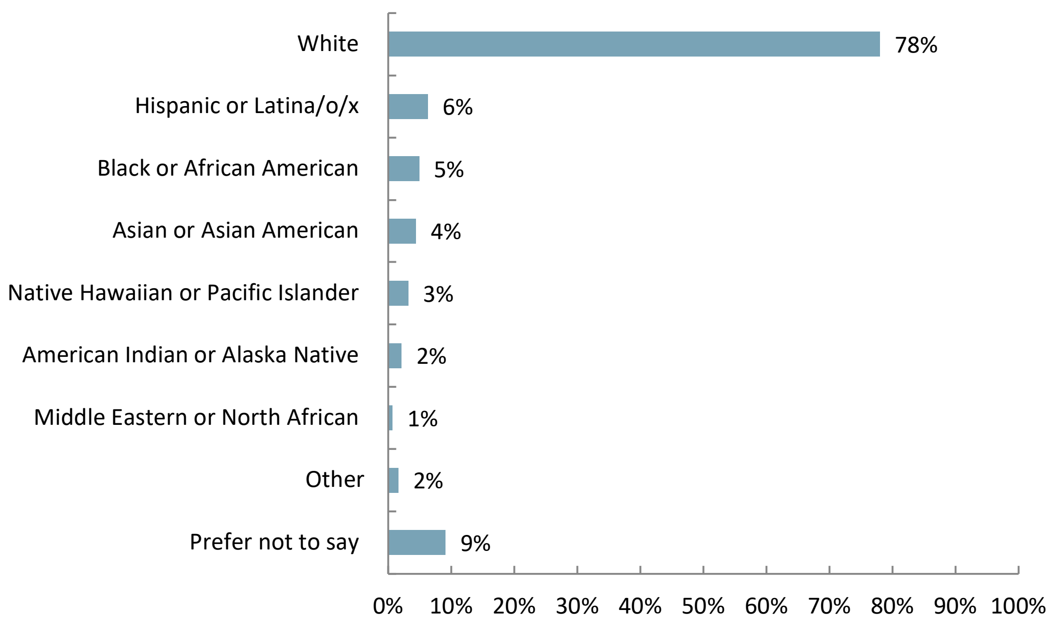
Base: all respondents (n = 550). Multiple responses allowed.
Percentages sum to more than 100%.

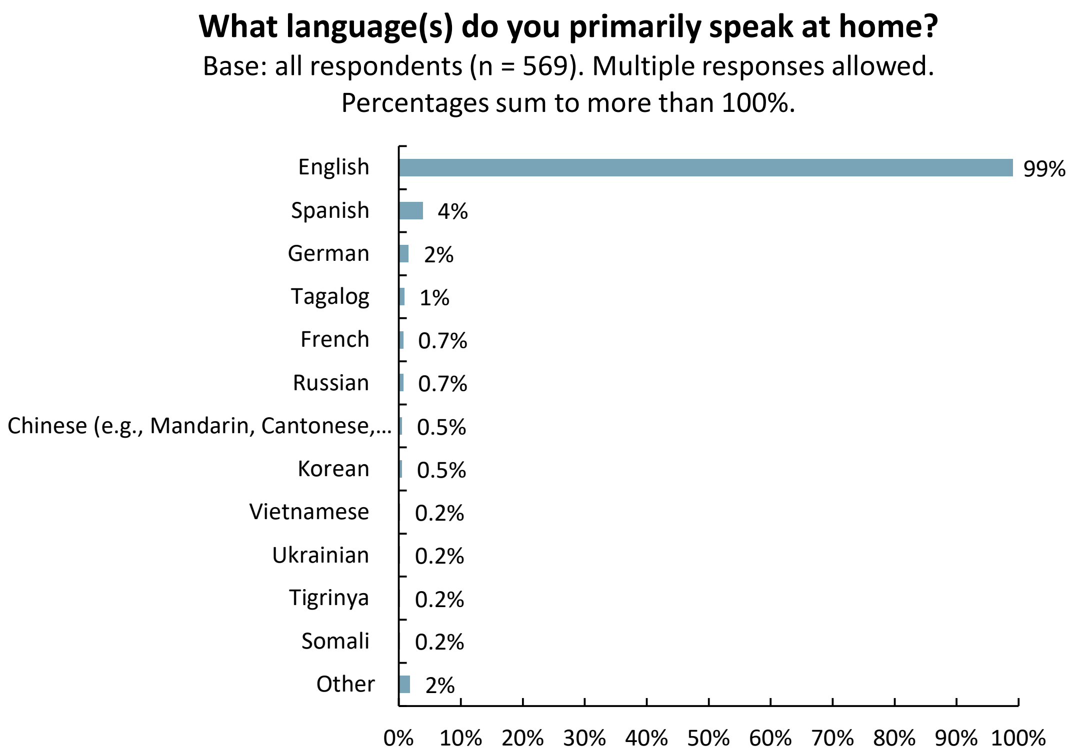


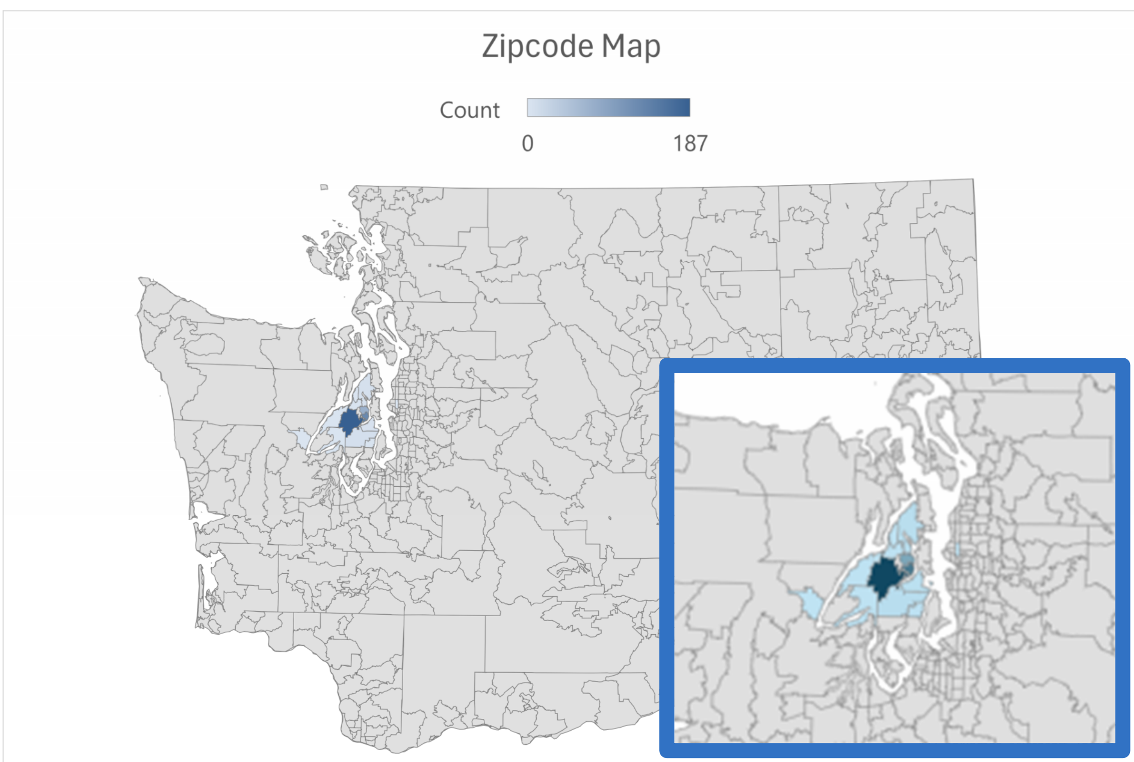
What was your household's total yearly income for 2023 before taxes?
Base: all respondents (n = 568).



How do you identify?
Base: all respondents (n = 569). Multiple responses allowed.
Percentages sum to more than 100%.




What language(s) do you primarily speak at home?
Base: all respondents (n = 569). Multiple responses allowed.
Percentages sum to more than 100%.
English 99%
Spanish 4%
German 2%
Tagalog 1%
French 0.7%
Russian 0.7%
Chinese (e.g., Mandarin, Cantonese,… 0.5%
Korean 0.5%
Vietnamese 0.2%
Ukrainian 0.2%
Tigrinya 0.2%
Somali 0.2%
Other 2%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%


Zipcode Map
Count
0
187

Appendix B: Survey instrument

Bremerton Transportation Plan Survey

(untitled)

1. Do you live in the City of Bremerton?*
- Yes
- No

2. What is your age?*
- Under 16
- 16 to 17
- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- 75 or older

(untitled)

3. How often do you usually travel to or in Bremerton?
- Less than once per month
- 1 to 3 days per month
- 1 to 3 days per week
- 4 to 7 days per week
- I have not traveled to or in Bremerton in the past year

(untitled)

4. What is the purpose of your travel to or in Bremerton during a typical week? Please select all that apply.
- Commute to or from work
- Non-commute travel for work (e.g. realtors, electricians, truck or bus drivers, etc.)
- School, education, or training for myself
- Childcare or school for a child
- Errands or trips for daily life (grocery shopping, airport, medical appointments, etc.)
- Recreational activities (shopping, exercising, entertainment, etc.)
- Visit friends or family
- Other (please tell us more):

(untitled)

5. Please select the days you typically travel in or around Bremerton. Please select all that apply.
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

6. Thinking about your typical weekday, what time(s) of day do you usually travel in or around Bremerton? Please select all that apply.
- 4:00am - 9:00am
- 9:00am - 2:00pm
- 2:00pm - 7:00pm
- 7:00pm - midnight
- Midnight - 4:00am
- None of the above. I usually stay at home.

(untitled)

7. Thinking about your travel during a typical week, which of the following do you use to travel? Please select all that apply.
- Walk or roll, including using a wheelchair or mobility aid
- Bike, including e-bike
- Motorcycle or moped
- Bus
- Vanpool service (a program that provides vans so groups can commute together)
- Take a ferry (please specify destination):
- Drive alone
- Drive with friends or family
- Taxi or ride share (Uber, Lyft, etc.)
- Carpool (two or more people sharing a ride to work or school)
- Other (please tell us more):

(untitled)

8. What are the top reasons you drive alone instead of using other travel modes for your travel? Please select up to three (3).

- Driving alone is my only option
- My job requires me to use my car for work
- Driving alone is easier or allows for more flexibility
- Driving is less stressful
- I have to make stops while traveling (drop off children at school, run errands, family obligations, etc.)
- Walking or biking is not safe
- Using public transit is not convenient
- Other (please tell us more):

(untitled)

9. How would you describe the ease of using the bus?

- Very challenging
- Somewhat challenging
- Somewhat easy
- Very easy

(untitled)

10. What challenges do you face when using the bus? Please select all that apply.

- It costs too much
- Not enough routes - it doesn't always go where I need it to go
- It takes too long to get where I need to go
- It is too hard to get to the station or stop
- There is not enough parking at stations
- Riding the bus feels unsafe
- Riding the bus is uncomfortable
- It is not reliable - I don't know when the next bus will arrive, depart, or get canceled
- Finding accessible trips is difficult or inconvenient
- Other (please tell us more):

(untitled)

11. What would motivate you to use the bus more often for travel? Please select up to three (3).

- More direct service that does not require transfers (getting to your destination without having to change buses)
- Shorter wait times between transfers
- Extended service times (service available earlier or later in the day)
- More frequent service (shorter wait times between buses on the same route)
- Extended service coverage (more routes going more places)
- Improved comfort at bus stops (shelters, lighting, etc.)
- Improved safety at bus stops (cameras, staff presence, etc.)
- Express service with fewer stops (a service that stops less frequently and gets you to your destination faster compared to regular service)
- Better information about how to use the service (routes, schedules, fares, etc.)
- Real-time information on bus arrivals and departures
- Reliability and on-time arrivals and departures
- Lower cost of bus fares
- Improved cleanliness at bus stops and on board
- Other (please tell us more):
- I have no interest in riding the bus

(untitled)

12. How would you describe the ease of using the ferry?

- Very challenging
- Somewhat challenging
- Somewhat easy
- Very easy

(untitled)

13. What are the challenges you face when using the ferry? Select all that apply.

- It costs too much
- It takes too long to get where I need to go
- It is too hard to get to the ferry terminal
- There is not enough parking
- Routes are not frequent enough
- Riding the ferry is uncomfortable
- It is not reliable – I don't know when the ferry will arrive, depart, or get canceled
- Terminals and boarding are not accessible
- Other (please tell us more):

(untitled)

14. What would motivate you to use the ferry more often? Please select up to three (3).

- ☐ Extended service times (e.g., service available earlier or later in the day)
- ☐ More frequent service (e.g., more vessels on the route)
- ☐ Improved comfort at ferry terminals
- ☐ Improved safety at ferry terminals or on the ferry
- ☐ Better information on ferry routes, schedules, and real-time arrivals and wait times
- ☐ Reliability and on-time arrivals and departures
- ☐ Lower cost of fares
- ☐ More routes going more places
- ☐ Other (please tell us more):
- ☐ I have no interest in riding the ferry

(untitled)

15. How would you rate the ease of using a vanpool?

- ○ Very challenging
- ○ Somewhat challenging
- ○ Somewhat easy
- ○ Very easy

(untitled)

16. What are the challenges you face when using vanpool? Select all that apply.

- ☐ It costs too much
- ☐ My employer does not offer a vanpool program as a benefit
- ☐ It takes too long to get to work
- ☐ There is not enough parking near where I work
- ☐ Vanpool is uncomfortable
- ☐ Vanpool is not accessible
- ☐ My schedule is not consistent or predictable
- ☐ I need to be able to leave work on short notice
- ☐ I cannot find people willing to join a vanpool
- ☐ I cannot find people willing to join vanpool who also live near me and have a similar schedule
- ☐ Other (please tell us more):

(untitled)

17. What would motivate you to use a vanpool more often? As a reminder, a vanpool is a group of commuters who ride to work together in a van provided by a transit agency or employer. Please select up to three (3).

- ☐ Reserved parking for vanpoolers at my workplace
- ☐ Lower parking rates for vanpoolers at my workplace
- ☐ Free ride home from service provider, taxi, or ride share in case of emergencies
- ☐ Help setting up a vanpool (such as a vanpool matching service that will pair you with the right person to share your drive)
- ☐ Learning more about the vanpool program
- ☐ Lower cost to use vanpool
- ☐ Other (please tell us more):
- ☐ I have no interest in using a vanpool

(untitled)

18. What would motivate you to carpool more often? As a reminder, a carpool is when two or more people sharing a ride to work or school. Please select up to three (3).

- ☐ Free or reserved parking for carpoolers at my workplace
- ☐ Lower parking rates for carpoolers at my workplace
- ☐ Free ride home from service provider, taxi, or ride share in in case of emergencies
- ☐ Help setting up a carpool (such as a carpool matching service that will pair you with the right person to share your drive)
- ☐ Other (please tell us more):
- ☐ I have no interest in carpooling

(untitled)

19. How would you rate the biking conditions in Bremerton?

- ○ Poor
- ○ Fair
- ○ Good
- ○ Excellent

(untitled)

20. What are the challenges you face when biking? Please select all that apply.

- Too much traffic
- Dangerous behavior by drivers (speeding, not yielding, etc.)
- Lack of or incomplete bicycle lanes
- Lack of safe crossings (no marked crosswalks or traffic signals)
- Poor street lighting
- Not enough bike parking
- Poor or unsafe road conditions (blocked lanes, cracks, potholes, etc.)
- Other (please tell us more):

(untitled)

21. What would motivate you to bike more often? Please select up to three (3).

- Improve existing bike lanes (visible paint, reflective cones, freestanding barriers, "one-way" bike lanes, etc.)
- New bike lanes where they don't exist today
- Improved biking connections to transit services or to downtown
- Bike parking
- Beacons, signals, or signs for bikes at busy intersections or crossings
- Program with shared bikes for rent
- Bike lockers and shower facilities at my workplace or transit station
- Other (please tell us more):

(untitled)

22. How would you rate walking conditions in Bremerton?

- Poor
- Fair
- Good
- Excellent

(untitled)

23. What are the challenges you face when walking? Please select all that apply.

- Too much traffic
- Dangerous behavior by drivers (speeding, not yielding, etc.)
- Lack of or incomplete sidewalks
- Lack of safe crossings (e.g., no marked crosswalks or traffic signals)
- Poor street lighting
- Poor or unsafe sidewalk conditions (sidewalks blocked, cracks, uneven, gapping, etc.)
- Other (please tell us more):

(untitled)

24. What would motivate you to walk more often for your trips? Please select up to three (3).

- Improve existing sidewalks and crosswalks
- New sidewalks and crosswalks where they don't exist today
- Improved walking connections to transit services or downtown
- Beacons, signals, or signs for pedestrians at busy intersections or crossings
- Shower facilities at my workplace or transit station
- Other (please tell us more):
- I have no interest in walking for my trips

(untitled)

25. How would you rate the traffic conditions in Bremerton?

- Poor
- Fair
- Good
- Excellent

(untitled)

26. What traffic issues do you experience in Bremerton? Please select all that apply.

- Slower speeds
- Aggressive or reckless drivers
- Road conditions (blocked lanes, cracks, potholes, etc.)
- Traffic congestion
- Wait times at traffic lights
- Lack of or confusing signage
- Poor lighting
- Other (please tell us more):

(untitled)

27. Which of the following do you think will improve traffic conditions in Bremerton? Please select all that apply.

- Create an outer roadway or beltway that would move traffic around the city
- Expand or widen streets and roads
- Eliminate or restrict parking near busy streets and intersections
- Add adaptive or "smart" traffic signals that respond to demand in real-time
- Improve traffic management at intersections by adding more signals or roundabouts
- Other (please tell us more):
- None of these

28. Which transportation improvements are most important to you? Please select up to three (3).

- ☐ Walking improvements - make it safer and easier to walk
- ☐ Biking improvements - make it safer and easier to bike
- ☐ Bus improvements - make it more convenient and easier to ride the bus
- ☐ Ferry improvements - make it more convenient and easier to ride the ferry
- ☐ Other transit improvements - add more park-and-ride facilities, vanpools, etc.
- ☐ Traffic improvements - reduce congestion, add signals or roundabouts, etc.
- ☐ Roadway capacity improvements – add more lanes, widen roads, build new roads, etc.
- ☐ Incentives and programs - support finding/creating vanshare or carpool options, transit fare incentives, etc.
- ☐ Commute technology programs (real-time traffic, transit, or parking information, etc.)
- ☐ Other (please tell us more):

(untitled)

29. Did we miss anything? What else should we consider to improve travel in Bremerton? Please briefly describe them here.

30. What is your home 5-digit zip code?

(untitled)

31. How do you identify? Please select all that apply.

- ☐ Man
- ☐ Woman
- ☐ Non-binary
- ☐ Gender(s) not listed here
- ☐ Prefer not to say

(untitled)

32. How long have you lived in Bremerton?

- ○ Less than 2 years
- ○ 2 to 5 years
- ○ 6 to 10 years
- ○ 11 to 20 years
- ○ More than 20 years

(untitled)

Appendix C: Survey recruitment methods

Survey responses, by recruitment method

Recruitment method	**Count**	**Percent**
Postcard	321	53%
Web link	51	8%
Social media	70	12%
Bremerton website	163	27%
Total	605	100%

Postcard

414 / 1-1-414

City of Bremerton
Engineering Division
345 6th Street, Suite 100
Bremerton, WA 98337

PRESORTED
FIRST CLASS MAIL
US POSTAGE PAID
AFTS

Complete our Transportation Survey for **a chance to win one of five $100 gift cards!** See reverse side for more information.

CURRENT RESIDENT
2321 NE 30TH ST
BREMERTON WA 98310-5320

CITY OF BREMERTON

Hello! The City of Bremerton is working to improve transportation throughout the city, and we want to hear from you! To help us meet the community's future transportation needs, we are inviting you to take our survey. **The survey takes about 10 minutes.**

Please complete the survey by **February 15th, 2024**, for a chance to win one of five $100 gift cards (must be 18 or older to win).

You can take the survey once by:

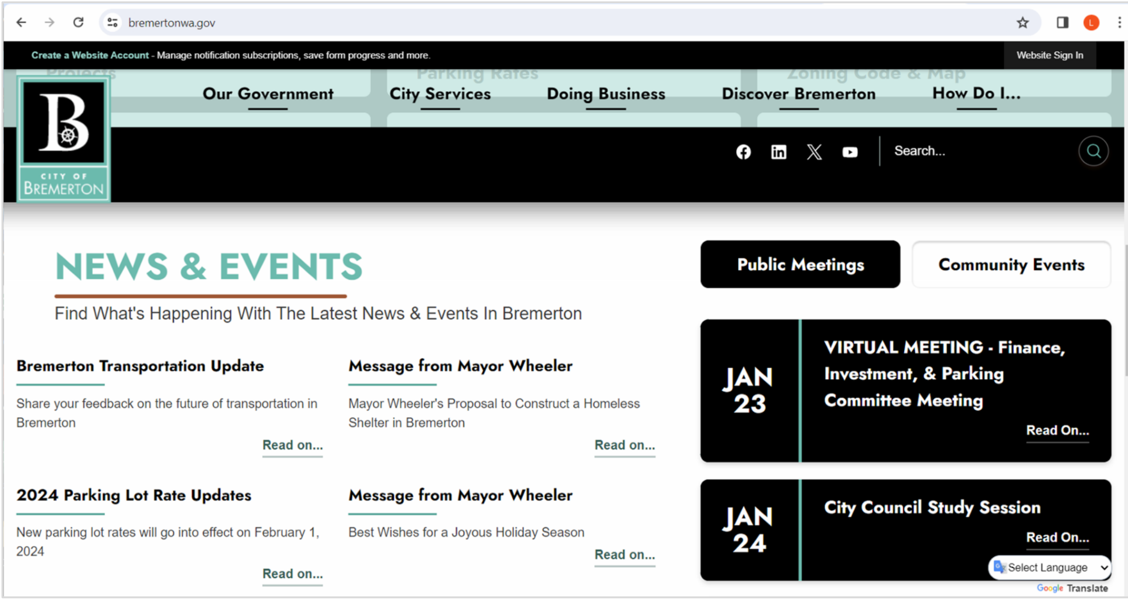
Link: https://rebrand.ly/brem44te-at-post

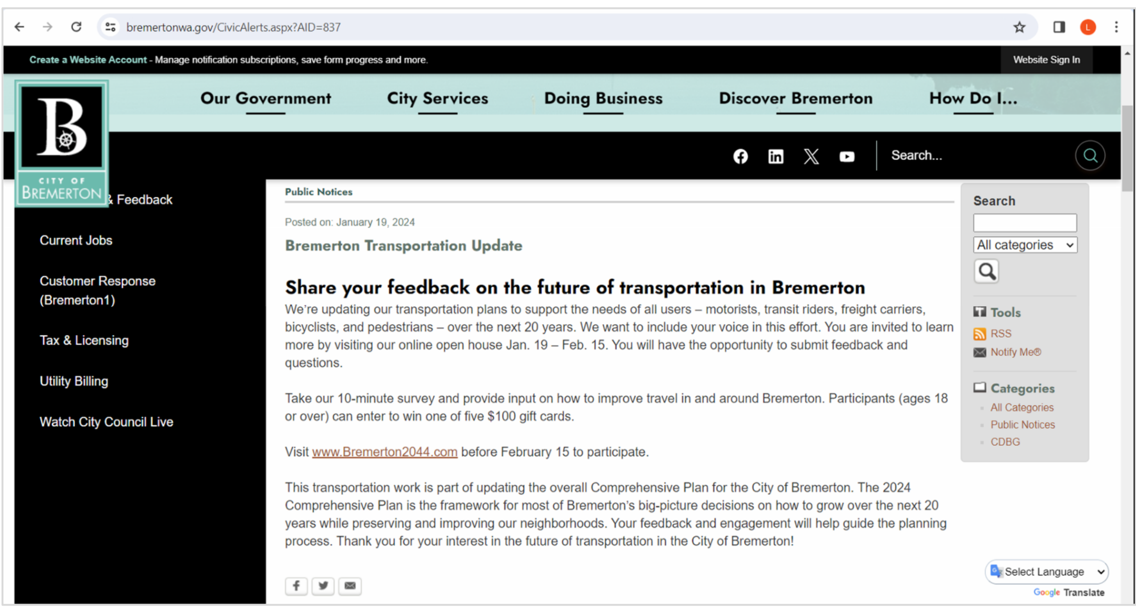
OR

Scan the QR code:

The City has hired PRR, an independent firm, to conduct this research. For questions or comments, please contact Vicki Grover at Vicki.grover@ci.bremerton.wa.us. Thank you!

Bremerton Website





Social media post

City of Bremerton - Government
January 19 at 8:30 AM ·

Your input matters! Share your thoughts on the future of transportation in Bremerton by joining our online open house and survey. Survey participants (ages 18 or over) can enter to win one of five $100 gift cards. Start shaping the future at www.Bremerton2044.com.

12 10 shares

Like Comment Share

Write a comment...

City of Bremerton @CityofBremerton · Jan 19

Share your thoughts about the future of transportation in Bremerton! Join our online open house and survey. Participants (ages 18 or over) can win a $100 gift card. Start shaping the future at Bremerton2044.com

2 1 207

Attachment F. Multimodal LOS and Transportation Concurrency System

May 29, 2025

TO: Vicki Grover, PE
City of Bremerton

FROM: Andrew L. Bratlien, PE, PTOE

SUBJECT: Multimodal Level of Service and Transportation Concurrency System Development

This memorandum describes the statutory basis, structure, and suggested implementation process for Multimodal Level of Service (MMLOS) standards and a transportation concurrency management system for the City of Bremerton. The policies described herein comply with current Washington State Growth Management Act (GMA) and Revised Code of Washington (RCW) requirements by incorporating guidance from the Washington State Department of Transportation (WSDOT), Washington Department of Commerce, and local agencies which have successfully adopted similar programs.

The adoption of the MMLOS standards described in this memorandum would require a revision of the Bremerton Municipal Code (BMC).

CONCURRENCY BACKGROUND

Washington State Growth Management Act

The Washington State Growth Management Act (GMA) requires cities and counties to provide public infrastructure, including transportation facilities and services, concurrent with new development. For transportation facilities, the GMA defines "concurrent" as any necessary "improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years."

Transportation concurrency requires that the impacts of new development do not reduce transportation Level of Service (LOS) below the responsible agency's adopted LOS standards. If it is determined during the development review process that the proposed land use action would reduce LOS below the adopted standard, the development must be modified to reduce its transportation impact or provide corrective transportation improvements. Transportation improvements, which may include project funding, must be identified and programmed within a six-year period from development permitting. Should any of these requirements fail to be met, the development proposal cannot be granted approval.

Recent Legislative Changes

Washington House Bill (HB) 1181, passed in 2023 and codified as RCW 36.70A.070, added several local agency transportation planning requirements. In addition to an increased emphasis on per-capita Vehicle-Miles Traveled (VMT) reductions and a requirement to calculate multimodal travel demand forecasts, HB 1181 required agencies to adopt Multimodal Level of Service (MMLOS) standards:

"…for all locally owned arterials, locally and regionally operated transit routes that serve urban growth areas, state-owned or operated transit routes that serve urban areas if [WSDOT] has prepared such standards, and active transportation facilities to serve as a gauge to judge performance of the system…"

The City of Bremerton is therefore required to adopt MMLOS standards for locally owned arterials, transit services/facilities, and active transportation facilities.

MULTIMODAL LOS STANDARDS

The multimodal LOS (MMLOS) standards described in this section will provide a basis for a GMA-compliant transportation concurrency system for the City of Bremerton.

The Pedestrian LOS and Bicycle LOS standards identified herein will guide development mitigation requirements. They provide a mechanism through which to implement the Pedestrian and Bicycle Level of Traffic Stress (LTS) measures defined in the Transportation Element of the Bremerton Comprehensive Plan and the future Active Transportation Plan. Through this process, LTS standards guide the design of nonmotorized transportation improvements while the following LOS standards determine the extent of improvements necessary to maintain transportation concurrency.

Intersection Capacity Level of Service

Intersection capacity LOS methods and thresholds are defined by the Transportation Research Board *Highway Capacity Manual*. LOS is typically expressed as a letter score from LOS A, representing free flow conditions with minimal delays, to LOS F, representing breakdown flow with high delays. In urban street networks, intersections typically constitute mobility chokepoints and are the focus of LOS analyses. Intersection LOS delay thresholds and descriptions are provided in **Table 1**.

Table 1. Level of Service Thresholds

LOS	Intersection Delay (sec/veh)		Description
	Signal and Roundabout	Stop-Controlled	
A	≤10	≤10	Free flow. Low volumes and little or no delays.
B	>10 – 20	>10 – 15	Stable flow. Minimal delays.
C	>20 – 35	>15 – 25	Stable flow. Moderate delays.
D	>35 – 55	>25 – 35	Approaching unstable flow with higher delays.
E	>55 – 80	>35 – 50	Unstable flow with significant delays. Volumes at or near capacity. Longer queues may form.
F	>80	>50	Forced flow. Long delays with stop-and-go traffic. Oversaturated conditions; may involve very long queues.

Bremerton has adopted a minimum LOS E standard for City streets. Minimum LOS standards for State routes are established by the Washington State Department of Transportation (WSDOT). WSDOT designates SR 3, SR 304 (Burwell St), and SR 310 (Kitsap Way) as Highways of Statewide Significance (HSS), with a minimum LOS D standard. The WSDOT designates SR 303 (Warren Ave) as a non-HSS route with a minimum LOS E/Mitigated standard, meaning that congestion should be mitigated when peak hour LOS falls below LOS E.

Local agencies are required to monitor transportation concurrency on all locally owned arterial roadways. State-owned facilities are statutorily exempt from concurrency requirements. However, local agencies are not prohibited from programming improvements on state-owned facilities.

A total of 83 intersections in the City of Bremerton are located at the intersections of collector and arterial streets. This includes 33 intersections on WSDOT-owned collector or arterial routes which are optional for transportation concurrency management. The list of suggested concurrency intersections is provided in Attachment 1.

Pedestrian LOS

Developments will provide for pedestrian safety and mobility, including adequate connections to existing pedestrian facilities. Proximity to nonmotorized trip generators, such as, but not limited to, schools, parks, and commercial establishments shall be considered when evaluating pedestrian LOS. Particular attention shall be given to school walk routes. The following pedestrian LOS standards will apply:

1. **Ultimate Pedestrian LOS**. The ultimate pedestrian facility design includes a minimum six-foot sidewalk with curb and gutter, paved multi-use path, or other approved facility. Specific requirements may identify the need for additional safety precautions. The determination of the ultimate facility type will be determined by the Active Transportation Plan and priority networks.
2. **Minimum Pedestrian LOS**. A minimum pedestrian facility shall include one of the following:
    a. A minimum five-foot paved shoulder with adequate delineation for safety;
    b. Other conditions may be considered equivalent to the minimum pedestrian facility at the sole discretion of the City Engineer.

The application of these standards for concurrency is described in the “Concurrency Requirements” section of this memorandum.

Bicycle LOS

Developments will provide for bicycle safety and mobility, including adequate connections to existing bicycle facilities. Proximity to planned bicycle routes shall be considered when evaluating bicycle LOS. The following bicycle LOS standards will apply:

1. **Ultimate Bicycle LOS**. The ultimate bicycle facility design includes a striped bike lane, marked shared-use lane including necessary pavement markings, or paved shared-use path with adequate delineation for safety. The determination of the ultimate facility type will be determined by the Active Transportation Plan and priority networks. Specific requirements may identify the need for additional safety precautions.
2. **Minimum Bicycle LOS**. A minimum bicycle facility shall include one of the following:
    a. A minimum six-foot paved shoulder and including adequate delineation for safety;
    b. Other conditions may be considered equivalent to the minimum bicycle facility at the sole discretion of the City Engineer.

The application of these standards for concurrency is described in the “Concurrency Requirements” section of this memorandum.

Street Design LOS

Street design standard LOS facilitates construction of multimodal street facilities consistent with City of Bremerton design standards. The application of these standards for concurrency is described in the "Concurrency Requirements" section of this memorandum.

1. **Ultimate Street LOS**. The street system will meet geometric, right-of-way width, and street section standards defined in the Comprehensive Plan, Engineering Design & Construction Standards, and Bremerton Municipal Code, and any site-specific project requirements. This will include, but not be limited to, traffic control, drainage, other utilities, pedestrian facilities, transportation facility design, construction, right-of-way, and easement dedications, for all transportation facilities, including frontage improvements and arterial connections in conformance with criteria set forth in the ultimate design LOS. Other utilities and appurtenances shall be constructed to meet City standards concurrent with the street construction.
2. **Three-Quarter Street LOS**. The street system shall consist of sidewalk, curb, gutter, all utilities, and appurtenances, and one-half of the ultimate pavement width on the development side of the right-of-way, plus a minimum 14-foot pavement width on the opposite side of the street. The total width shall not exceed the ultimate design width. This will include, but not be limited to, traffic control, drainage and other utilities, pedestrian facilities, transportation facility design, construction, right-of-way, and easement dedications, for all transportation facilities, including frontage improvements and arterial connections in conformance with criteria set forth in the ultimate design LOS. Other utilities and appurtenances shall be constructed to meet City standards concurrent with the street construction. The City Engineer may evaluate the pavement condition index (PCI) when recommending requirements for development.
3. **Minimum Street LOS**. A minimum 30-foot-wide paved street section centered on the ultimate design cross section with sufficient traffic capacity to serve existing and project-generated traffic. Drainage may be in surface ditches or a subsurface conveyance. This will include, but not be limited to, traffic control, drainage and other utilities, pedestrian facilities, transportation facility design, construction, right-of-way, and easement dedications, for all transportation facilities, including frontage improvements in conformance with criteria set forth in the ultimate street design LOS. Other utilities and appurtenances shall be constructed to meet City standards concurrent with street construction. The City Engineer may evaluate the pavement condition index (PCI) when recommending requirements for development.

Site Design LOS

The development shall mitigate all on-site transportation impacts. Mitigation shall be based on compliance with the Comprehensive Plan, Engineering Design & Construction Standards, Bremerton Municipal Code, and any site-specific requirements. This mitigation shall include, but not be limited to, transportation facility design and construction, right-of-way, and easement dedications for all transportation facilities, including frontage improvements and street connections through the site, as well as improvements to the interior of the site.

Transit Access LOS

Transit route ridership is monitored by Kitsap Transit (KT). Action to delete service or significantly alter routes and schedules are reviewed on a case-by-case basis by the KT Board of Commissioners after input from the Community Advisory Committee. New service requests and changes are regularly assessed based on new housing developments and/or citizen requests.

CONCURRENCY REQUIREMENTS

All developments shall meet development standards for intersection capacity LOS, pedestrian LOS, bicycle LOS, street design LOS, site design LOS, and transit access LOS. The criteria for determining the applicable standard for determining compliance with MMLOS requirements shall include, but not be limited to, the volume of traffic generated or to be generated on the arterial street system from a development at full build-out during the most critical or highest volume hour of the day, hereafter referred to as the peak hour. The peak hour trip generation shall be determined by a traffic impact analysis.

The design and nature of ultimate pedestrian and bicycle LOS facilities are guided by the Active Transportation Plan and Level of Traffic Stress (LTS), which will be considered when determining whether a development meets LOS standards

Compliance with the multimodal LOS standards will be based on the following criteria:

A. Fewer Than 10 Peak Hour Trips. If a project generates fewer than 10 peak hour vehicle trips, the City Engineer shall determine the necessity of the project to meet all or a portion of the MMLOS requirements. The City Engineer shall consider the following when making this determination:
    1. Proposed developments in the area;
    2. Proximity of adjacent ultimate, three-quarter street, and/or minimum LOS improvements;
    3. Adequacy and condition of street frontage improvements;
    4. Proximity to nonmotorized trip generators such as, but not limited to, schools, parks, and commercial businesses;
    5. Anticipated impacts of project;
    6. Capacity of the affected arterial street system.
B. Ten to 75 Peak Hour Trips. If a project generates 10 to 75 peak hour trips, the following MMLOS standards are necessary to achieve concurrency:
    1. Street Frontage. Three-quarter street LOS improvements must be in place on the project street frontage.
    2. Adjacent Street System.
        a. Minimum Street LOS Improvements. Minimum street LOS improvements must be in place on the adjacent street system to the point where they connect to an arterial street that meets the three-quarter street LOS on the same side of the street as the development.
        b. Minimum Pedestrian LOS and Bicycle LOS. Minimum pedestrian LOS and bicycle LOS improvements must be in place on the adjacent street system to the point where they connect to or intersect with an arterial street that meets the three-quarter street LOS on the same side of the street as the development. Improvements may be considered connected to adjacent improvements on the opposite side of the street, if the connection is made with an approved nonmotorized crossing facility at a controlled intersection, providing protection to nonmotorized travelers with a stop sign or traffic signal, at the discretion of the City Engineer.
    3. Capacity LOS. Intersections and segments impacted by traffic from the development as identified in the project traffic impact analysis shall be evaluated for capacity LOS.

Intersections on the arterial street system that are impacted by peak hour traffic generated by the development shall be required to meet capacity LOS standards. All or a portion of the development shall be denied or delayed until deficient intersections meet capacity LOS standards.

C. More Than 75 Peak Hour Trips. If a project or any phase of a project generates more than 75 peak hour trips, concurrency impacts and mitigation requirements will be determined according to the permit processing, review, decision and appeal procedures identified in Bremerton Municipal Code (BMC) 20.02.

PROPOSED TRAFFIC IMPACT ANALYSIS AND CONCURRENCY REVIEW SYSTEM

This section describes the proposed administrative steps involved in the implementation of a GMA-compliant traffic impact analysis and concurrency review system. The implementation of this system would require an update to the Bremerton Municipal Code.

The applicant is not required to submit a traffic impact analysis from an independent traffic engineer. Applicants may instead pay to the City a deposit equal to the estimated fee for the City's preparation of a traffic report. The amount of the fee shall be determined by City resolution and paid at the time of transportation concurrency application submittal. The fee shall vary based on the number of new PM peak hour trips generated by the development. The applicant shall be subject to payment of additional fees for any subsequent revisions to the original traffic report. Fees for revisions may be an additional proportion of the original fee depending on the effort involved to revise the traffic report. Even if the traffic report is based on an estimate of impact, the applicant will still be bound by its estimate of impact, and any upward deviation from the estimated traffic impact shall require at least one of the following: a finding that the additional concurrency sought by the developer through a revised application is available to be reserved by the project; mitigation of the additional impact under SEPA; revocation of the concurrency approval.

Concurrency evaluations will be prepared by the City or its traffic engineering consultant to ensure consistency with previously approved and pending developments. The concurrency evaluation will include the following adopted LOS requirements for the development:

A. Pedestrian LOS. The report will identify pedestrian impacts and required mitigation.
B. Bicycle LOS. The report will identify bicycle impacts and required mitigation.
C. Intersection Capacity LOS. Traffic capacity LOS for all development applications shall utilize a citywide traffic model that includes a cumulative traffic forecast of all approved concurrency applications. This forecast shall be the basis for the analysis with each subsequent development application being added to the previous traffic forecast to determine intersection capacity LOS. The report will identify whether traffic impacts of the proposed development are consistent with the currently adopted and funded CIP and impact fee programs. Additional mitigation to maintain capacity LOS will be identified if required, as will any required traffic impact fee.
D. Street Design Standard LOS. The report will identify required frontage and off-site street design LOS requirements and will identify any off-site street improvements eligible for impact fee credits.
E. Site Design LOS. The report will identify any deficiencies in the proposed on-site design.
F. Transit Access LOS. The report will identify any transit access deficiencies or required mitigation.

INTERSECTION LEVEL OF SERVICE ANALYSIS

This section summarizes the current state of the intersection capacity concurrency system.

2023 Intersection LOS Results

Transportation Solutions prepared a citywide intersection Level of Service analysis as part of the ongoing Transportation Element update effort. The methods and assumptions of the LOS analysis are summarized in the memorandum "2023 Intersection Level of Service Analysis," dated May 20, 2024, which will be provided upon request.

The 2023 intersection LOS analysis identified two concurrency intersections which currently operate below their minimum LOS standard. Both LOS-deficient intersections are on WSDOT routes:

- Kitsap Way (SR 310) & Marine Drive operates at LOS E, below the minimum LOS D standard for SR 310. Near-term mitigation may include adaptive signal control.
- Loxie Eagans Blvd & SR 3 southbound ramps operate at LOS F due to delay on the SR 3 southbound off-ramp. As a WSDOT-owned and managed intersection, this location is not subject to GMA concurrency requirements. Mitigation may include a WSDOT-funded traffic signal or roundabout.

Travel Demand Forecasting Methodology

Traffic volume forecasts were developed using the Bremerton travel demand model, which was updated in January 2024 to reflect the latest development inventory, driver behavior, trip generation rates, and traffic counts. The travel demand model was validated using real-world traffic counts at 430 locations to align modeled flows with real-world conditions. The validated model reflects a correlation coefficient (R^2) of 0.96 and a root-mean-squared error (RMSE) of 19% in the PM peak hour analysis period. This is well within state-of-practice guidance for travel demand model validation and represents the best available tool for travel demand forecasting in the City of Bremerton.

2030 Growth Forecast

2030 travel demand growth was forecast based on pipeline development which was verified by City staff. This included a total of 19 projects which were permitted or under construction as of January 2024.

Pipeline projects consist of a total of 1,218 new dwelling units (DU) and 158 new employees. Pipeline development is expected to generate a total of 501 trips during the AM peak hour and 786 trips during the PM peak hour of travel. The pipeline trip generation forecast is summarized in **Table 4**.

Table 4. 2030 Development and Trip Growth

Scenario	Dwelling Units (DU)	Employees	Trip Ends in City	
			AM Peak Hr	PM Peak Hr
Existing (2024)	17,152	35,171	20,147	30,606
Pipeline (2024-2030)	+1,218	+158	+501	+786
2030 Total	**18,370**	**35,329**	**20,648**	**31,392**

2030 Intersection LOS Results

2030 PM peak hour LOS results at the suggested concurrency intersections are provided in Attachment 2. Intersection LOS deficiencies will occur at three WSDOT intersections within the city limits:

- Kitsap Way (SR 310) & Corbet Drive/Wilbert Avenue will operate at LOS F due to delay on the northbound and southbound stop-controlled approaches. Right-in/right-out turn restrictions may be considered at this location. However, turn restrictions would limit access to residential development to the north and south of Kitsap Way. A multilane roundabout would maintain local property access while allowing the intersection to maintain the minimum LOS D standard on SR 310.
- Loxie Eagans Blvd & SR 3 southbound off-ramp will operate at LOS F due to delay on the SR 3 southbound off-ramp. As a WSDOT-owned and managed intersection, this location is not subject to GMA concurrency requirements. Mitigation may include a WSDOT-funded traffic signal or roundabout.
- Burwell St (SR 304) & Warren Ave (SR 303) will operate at LOS E with 60 seconds of delay per vehicle in the PM peak hour. WSDOT has adopted a minimum LOS E/Mitigated standard for SR 303 and a minimum LOS D standard for SR 304. Mitigation may include signal phasing and timing improvements. Specifically, signal phases for the northbound and southbound approaches may be modified from the current split phasing to concurrent (permissive left-turn) phasing.

Kitsap Way (SR 310) & Marine Drive operates at LOS E in 2023 using signal timing plans provided by WSDOT. The minimum LOS standard is satisfied but the intersection is likely to operate with periods of congestion. Intersection operations may be improved to LOS D through 2030 with signal timing improvements. Signal timing improvements may utilize the existing signal hardware. Alternatively, adaptive signal control may be considered to optimize signal timing efficiency at this location.

Actions Needed to Satisfy Minimum Vehicle LOS Standard

Per Washington Administrative Code (WAC) 365-196-840 (2), the anticipated 2030 intersection LOS deficiencies are on WSDOT routes and are therefore not subject to transportation concurrency requirements. All City-owned intersections operate at or above the City’s adopted minimum LOS E standard.

CONCURRENCY MANAGEMENT SYSTEM IMPLEMENTATION PROCESS

This section describes a four-step process toward the adoption of a transportation concurrency management system. The four-step process is summarized below and in Figure 1:

1. **Define MMLOS standards in adopted Transportation Element and LTS standards in the Active Transportation Plan**: The MMLOS standards in the adopted Transportation Element and the LTS standards in the Active Transportation Plan will guide the transportation improvement project list and concurrency management system.
2. **Implement concurrency via ordinance**: After adoption of the updated Transportation Element, the City will implement concurrency management via ordinance. The ordinance will define transportation concurrency standards, the concurrency review process, and the threshold for standalone concurrency review (e.g. projects which generate no fewer than 10 new weekday PM peak hour vehicle trips). Small developments which do not meet the adopted threshold for standalone concurrency review may be granted concurrency and incorporated to the concurrency management system in batches based on a trip threshold (e.g. batches of 10 new trips) or on a fixed time interval (e.g. an annual analysis of all small projects).
3. **Prepare concurrency application form**: The City will provide development applicants with a concurrency application form which will provide the information necessary for concurrency review. This includes a brief description of the nature and size of the development (in housing units, enclosed floor area, or other relevant metric), any proposed construction or occupancy phasing, a preliminary site plan, and a description of any proposed site accesses.
4. **Execute concurrency reviews**: Concurrency reviews will be prepared by the City's on-call traffic engineer. The City may adopt a two-tier review process which provides development applicants the option of using the City's on-call traffic engineer for the full review process or to use their own traffic engineer to prepare a traffic impact analysis which will subsequently be reviewed and incorporated to the City's concurrency system by the City's on-call traffic engineer. The two-tier review process is summarized below:
    a. Tier 1 "Limited Review:" Applicants will submit a transportation concurrency application to the City. The City's on-call traffic engineer will generate a trip generation, distribution and assignment forecast using the City's concurrency forecasting models and will provide the resulting forecasts as well as a recommended Traffic Impact Analysis (TIA) scope to the applicant's traffic engineer. The applicant's traffic engineer will prepare a TIA using the provided forecasts and scope and will document any development-related transportation impacts and necessary mitigation strategies, as applicable.
    b. Tier 2 "Full Review:" Applicants will submit a transportation concurrency application to the City. The City's on-call traffic engineer will analyze transportation concurrency (GMA) impacts as well as other transportation-related impacts which are beyond the scope of transportation concurrency (i.e. SEPA impacts). The City's on-call traffic engineer will prepare a report summarizing the project's GMA and SEPA impacts and any recommended improvement strategies. The report will include a transportation concurrency approval or denial recommendation based on the findings of the review.

Figure 1. Suggested Transportation Concurrency Management System Implementation

1. Define MMLOS standards in adopted Transportation Element and LTS standards in Active Transportation Plan

2. Implement concurrency via ordinance or administrative action, defining:
    - Concurrency standards
    - Review process
    - Review threshold

3. Prepare concurrency application form to be submitted by development applications, including:
    - Project description
    - Phasing
    - Site plan
    - Accesses

4. Execute concurrency reviews

SUGGESTED CONCURRENCY REVIEW METHODOLOGY

This section outlines a two-tier transportation concurrency management system which will provide permit applicants the option of using the City's on-call traffic engineer ("Full Review") or their own traffic engineer ("Limited Review") for concurrency analysis. Work tasks associated with each proposed transportation review tier are summarized below.

<u>Tier 1: Transportation Concurrency Review ("Limited Review")</u>

1. **Confirm project understanding.** Applicants will submit a transportation concurrency application which will contain the following information:

    a. Preliminary site plan, including proposed site access locations, off-street parking, frontage improvements, and on-site circulation, as applicable.

    b. Project description, including parcel numbers, zoning, existing uses, proposed uses, proposed quantity (number of dwelling units or gross square feet), construction phasing, and proposed off-site improvements, as applicable.
    c. Project trip generation forecast, including AM peak hour, PM peak hour, and daily trips, prepared by a licensed Professional Engineer. Transportation Solutions will review submitted trip generation forecast.

2. **Input proposed use and trips to travel demand model.** Project-generated PM peak hour trips will be input to the Bremerton travel demand (Visum) model. The calculated trip assignment forecast will be used to develop the TIA scope described in the following step.
3. **Provide TIA scope to applicant.** The City's on-call engineer will prepare a scoping memorandum which includes:
    a. Project trip assignment figure/s generated by Visum model. These figures will identify project trips at all concurrency intersections with greater than 10 PM project trips.
    b. Pipeline "Without Project" intersection LOS models for all intersections with greater than 10 PM project trips. This forecast will include the cumulative growth associated with all permitted development excluding the project. The applicant's engineer will calculate "With Project" traffic forecast by adding project-generated trips based on the trip assignment figures provided in the preceding step.
    c. Description of any project-specific analysis requirements.

The applicant's traffic engineer will prepare a TIA report based on the scoping memorandum and material provided by the City's on-call engineer. The impact analysis will consider safety impacts (including review of five-year crash history in study area), site access operations, off-street parking, circulation, and queuing, as necessary.

The TIA report should document the actions needed to achieve concurrency using the data provided by the City's on-call engineer.

4. **Review applicant-submitted TIA report**. The City's on-call engineer will provide a peer review of the applicant-submitted TIA report, reviewing analysis methods, assumptions, findings, and recommendations. The City's on-call engineer will issue a concurrency approval letter or denial letter based on the findings of this review.

<u>Tier 2: Transportation Concurrency ("Full Review")</u>

1. **Confirm project understanding.** Applicants will submit a transportation concurrency application which will contain the following information:
    a. Preliminary site plan, including proposed site access locations, off-street parking, frontage improvements, and on-site circulation, as applicable.
    b. Project description, including parcel numbers, zoning, existing uses, proposed uses, proposed quantity (number of dwelling units or gross square feet), construction phasing, and proposed off-site improvements, as applicable.

2. **Gather traffic data** necessary for review, including turning movement counts, parking demand data, queueing data, or trip generation data, as necessary. Data collection expenses will be charged directly, in addition to the transportation concurrency review fee.
3. **Calculate project trip generation forecast** based on Institute of Transportation Engineers *Trip Generation Manual 11th Edition* or other available data, as necessary.
4. **Input proposed use and trips to travel demand model.** Project-generated PM peak hour trips will be input to the Bremerton travel demand (Visum) model.
5. **Analyze transportation concurrency (GMA) impacts**, analyzing all concurrency intersections citywide to identify cumulative impacts of new development trips. Identify intersection LOS deficiencies and mitigation projects which may be required to maintain systemwide concurrency.
6. **Analyze localized (SEPA) traffic impacts**. The impact analysis will consider safety impacts (including review of five-year crash history in study area), site access operations, off-street parking, circulation, and queuing, as necessary. Sight distance analysis will not be included in the SEPA review.

   The SEPA analysis will identify any potentially significant adverse impacts and will provide mitigation recommendations, as necessary.
7. **Summarize findings and recommendations in technical memorandum** and issue a transportation concurrency approval letter or denial letter based on the findings of the review.

TRANSPORTATION CONCURRENCY REVIEW FEES

Transportation concurrency review fees can be assessed on a fixed-fee basis according to an adopted two-tier fee schedule. A sample is provided in Attachment 3 and is intended for reference only. Developments which do not fit any of the land use categories in the adopted fee schedule will be assessed a review fee based on the project's PM peak hour trip generation forecast.

For some unique developments, it may not be possible to quickly develop a reliable project trip generation forecast for the purposes of developing a fee estimate. In these cases, the transportation concurrency review fee will be assessed as a not-to-exceed task order and services will be billed on a time and materials basis. The City of Bremerton may return any unspent budget to the applicant after completion of the concurrency review.

Attachment 1. Suggested Transportation Concurrency Management System Intersections

Attachment 2. 2030 Intersection LOS Results

Attachment 3. Sample Transportation Concurrency Review Fee Schedule

Attachment 1.

Suggested Transportation Concurrency Management System Intersections

Suggested Concurrency Intersections

ID	Street A	Street B	Functional Class A	Functional Class B	Control Type[1]
City of Bremerton Intersections					
13	6th St	Montgomery Ave	Minor Arterial	Major Collector	Signal
14	6th St	Naval Ave	Minor Arterial	Minor Arterial	Signal
15	6th St	High Ave	Minor Arterial	Major Collector	TWSC
16	6th St	Veneta Ave	Minor Arterial	Local Access	Signal
18	6th St	Park Ave	Minor Arterial	Minor Arterial	Signal
19	6th St	Pacific Ave	Minor Arterial	Minor Arterial	AWSC
20	Washington Ave	6th St	Principal Arterial	Minor Arterial	Signal
30	11th St	Callow Ave	Principal Arterial	Major Collector	Signal
31	11th St	Naval Ave	Principal Arterial	Minor Arterial	Signal
32	11th St	High Ave	Principal Arterial	Major Collector	Signal
33	11th St	Park Ave	Principal Arterial	Minor Arterial	Signal
34	Washington Ave	Manette Bridge	Principal Arterial	Principal Arterial	RAB
43	Burwell St	Washington Ave	Principal Arterial	Principal Arterial	Signal
46	Werner Rd	Union Ave	Major Collector	Major Collector	Signal
47	Werner Rd	Auto Ctr Way/ Oyster Bay	Major Collector	Major Collector	Signal
60	Perry Ave	Sheridan Rd	Minor Arterial	Minor Arterial	TWSC
61	Sheridan Rd	Schley Blvd	Minor Arterial	Major Collector	TWSC
63	Perry Ave	Magnuson Way	Minor Arterial	Major Collector	TWSC
66	Perry Ave	16th St	Minor Arterial	Major Collector	TWSC
67	Perry Ave	11th St	Minor Arterial	Minor Arterial	TWSC
69	Wheaton Way	Callahan Dr	Principal Arterial	Major Collector	TWSC
70	Wheaton Way	Lebo Blvd	Principal Arterial	Minor Arterial	AWSC
71	Wheaton Way	Schley Blvd	Principal Arterial	Major Collector	TWSC
72	Wheaton Way	18th St	Principal Arterial	Major Collector	TWSC
74	Manette Bridge	Wheaton Way	Principal Arterial	Principal Arterial	RAB
81	Lebo Blvd	Clare Ave	Minor Arterial	Major Collector	TWSC
82	Lebo Blvd	Juniper St	Minor Arterial	Major Collector	TWSC
83	Sylvan Way	Pine Rd	Minor Arterial	Major Collector	AWSC
84	Sheridan Rd	Pine Rd	Minor Arterial	Major Collector	TWSC
85	Lebo Blvd	Sheridan Rd	Minor Arterial	Minor Arterial	TWSC
88	11th St	Pacific Ave	Principal Arterial	Minor Arterial	AWSC
90	National Ave	Arsenal Way	Minor Arterial	Major Collector	TWSC
92	Kitsap Way	Harlow Dr	Minor Arterial	Major Collector	TWSC
95	Kitsap Way	Austin Dr	Minor Arterial	Major Collector	TWSC

ID	Street A	Street B	Functional Class A	Functional Class B	Control Type[1]
96	Northlake Way	Kitsap Lake Rd	Minor Arterial	Major Collector	TWSC
97	Harlow Dr	Price Rd	Major Collector	Major Collector	AWSC
98	1st St	Auto Ctr Blvd	Major Collector	Major Collector	AWSC
301	Oyster Bay Ave	Roosevelt Blvd	Major Collector	Major Collector	TWSC
302	Marine Dr	Rocky Point Rd	Major Collector	Major Collector	TWSC
304	15th St	Corbet Dr	Major Collector	Major Collector	TWSC
305	15th St	Snyder Ave	Major Collector	Major Collector	TWSC
306	15th St	Callow Ave	Major Collector	Major Collector	TWSC
307	Naval Ave	15th St	Minor Arterial	Major Collector	Signal
309	High Ave	13th St	Major Collector	Major Collector	AWSC
310	1st St	Hartford Ave	Major Collector	Major Collector	TWSC
316	Park Ave	5th St	Minor Arterial	Major Collector	AWSC
317	Park Ave	4th St	Minor Arterial	Major Collector	AWSC
318	Pacific Ave	5th St	Minor Arterial	Major Collector	AWSC
319	Pacific Ave	4th St	Minor Arterial	Major Collector	AWSC
322	Austin Dr	Higbee Rd	Major Collector	Major Collector	TWSC
WSDOT Intersections in City Limits					
2	Kitsap Way (SR 310)	SR 3 SB/Auto Ctr Way	Principal Arterial	Other Fwy Expwy	Signal
4	Kitsap Way (SR 310)	Shorewood Dr	Principal Arterial	Local Access	Signal
5	Kitsap Way (SR 310)	Ostrich Bay Ave	Principal Arterial	Local Access	Signal
6	Kitsap Way (SR 310)	Oyster Bay Ave	Principal Arterial	Major Collector	Signal
7	Kitsap Way (SR 310)	National Ave	Principal Arterial	Minor Arterial	Signal
8	Kitsap Way (SR 310)	Marine Dr	Principal Arterial	Major Collector	Signal
9	Kitsap Way (SR 310)	Corbet Dr/Wilbert Ave	Principal Arterial	Major Collector	TWSC
10	Kitsap Way (SR 310)	11th Ave	Principal Arterial	Principal Arterial	Signal
11	Kitsap Way (SR 310)	Wycoff Ave	Principal Arterial	Local Access	Signal
12	6th St (SR 310)	Callow Ave (SR 310)	Principal Arterial	Principal Arterial	Signal
17	Warren Ave (SR 303)	6th St	Principal Arterial	Minor Arterial	Signal
21	Burwell St (SR 304)	Warren Ave (SR 303)	Principal Arterial	Principal Arterial	Signal
22	Warren Ave (SR 303)	11th St	Principal Arterial	Principal Arterial	Signal
23	Warren Ave (SR 303)	13th St	Principal Arterial	Major Collector	Signal
24	Warren Ave (SR 303)	16th St	Principal Arterial	Local Access	Signal
25	Wheaton Way (SR 303)	Sheridan Rd	Principal Arterial	Minor Arterial	Signal
26	Wheaton Way (SR 303)	Sylvan Way	Principal Arterial	Minor Arterial	Signal
27	Wheaton Way (SR 303)	Hollis St	Principal Arterial	Local Access	Signal
28	Wheaton Way (SR 303)	Riddell Rd	Principal Arterial	Minor Arterial	Signal
35	Burwell St (SR 304)	Callow Ave (SR 310)	Principal Arterial	Principal Arterial	Signal

ID	Street A	Street B	Functional Class A	Functional Class B	Control Type[1]
36	Burwell St (SR 304)	Montgomery Ave	Principal Arterial	Major Collector	Signal
37	Burwell St (SR 304)	Naval Ave	Principal Arterial	Minor Arterial	Signal
38	Burwell St (SR 304)	State Ave	Principal Arterial	Local Access	Signal
40	Burwell St (SR 304)	Park Ave	Principal Arterial	Minor Arterial	Signal
42	Burwell St (SR 304)	Pacific Ave	Principal Arterial	Principal Arterial	Signal
44	Charleston Blvd (SR 304)	Farragut Ave	Principal Arterial	Local Access	Signal
76	SR 303 SB Ramp	Callahan Dr	Principal Arterial	Major Collector	TWSC
93	SR 3 NB Ramps	Austin Dr	Other Fwy Expwy	Major Collector	TWSC
94	SR 3 SB Ramps	Austin Dr	Other Fwy Expwy	Major Collector	TWSC
104	Loxie Eagans Blvd	SR 3 SB ramps	Minor Arterial	Other Fwy Expwy	TWSC
105	Loxie Eagans Blvd	SR 3 NB ramps	Minor Arterial	Other Fwy Expwy	Signal
105	Loxie Eagans Blvd	SR 3 NB ramps	Minor Arterial	Other Fwy Expwy	Signal
106	Charleston Blvd (SR 304)	1st St	Principal Arterial	Major Collector	TWSC
137	Wheaton Way (SR 303)	Broad St	Principal Arterial	Local Access	Signal
216	SR 3	Imperial Way	Principal Arterial	Local	Signal

[1]Signal: signalized; RAB: roundabout; AWSC: all-way stop control; TWSC: minor-approach stop control

Attachment 2.

2030 Intersection LOS Results

Table 3. 2030 Intersection LOS at Suggested Concurrency Intersections

ID	Name	Control[1]	LOS Std[2]	2030 PM LOS (Delay) [3]
City of Bremerton Intersections				
13	6th St & Montgomery Ave	Signal	E	A (8)
14	6th St & Naval Ave	Signal	E	D (46)
15	6th St & High Ave	TWSC	E	E (42)
16	6th St & Veneta Ave	Signal	E	B (12)
18	6th St & Park Ave	Signal	E	B (18)
19	6th St & Pacific Ave	AWSC	E	B (13)
20	Washington Ave & 6th St	Signal	E	C (23)
30	11th St & Callow Ave	Signal	E	B (14)
31	11th St & Naval Ave	Signal	E	C (29)
32	11th St & High Ave	Signal	E	B (17)
33	11th St & Park Ave	Signal	E	B (20)
34	Washington Ave & Manette Bridge	RAB	E	B (14)
43	Burwell St & Washington Ave	Signal	E	B (11)
46	Werner Rd & Union Ave	Signal	E	D (48)
47	Werner Rd & Auto Ctr Way/ Oyster Bay	Signal	E	B (14)
60	Perry Ave & Sheridan Rd	TWSC	E	C (19)
61	Sheridan Rd & Schley Blvd	TWSC	E	C (20)
63	Perry Ave & Magnuson Way	TWSC	E	C (16)
66	Perry Ave & 16th St	TWSC	E	B (13)
67	Perry Ave & 11th St	TWSC	E	A (10)
69	Wheaton Way & Callahan Dr	TWSC	E	C (17)
70	Wheaton Way & Lebo Blvd	AWSC	E	B (11)
71	Wheaton Way & Schley Blvd	TWSC	E	C (25)
72	Wheaton Way & 18th St	TWSC	E	B (11)
74	Manette Bridge & Wheaton Way	RAB	E	A (8)
81	Lebo Blvd & Clare Ave	TWSC	E	C (18)
82	Lebo Blvd & Juniper St	TWSC	E	C (21)
83	Sylvan Way & Pine Rd	AWSC	E	C (16)
84	Sheridan Rd & Pine Rd	TWSC	E	C (21)
85	Lebo Blvd & Sheridan Rd	TWSC	E	B (13)
88	11th St & Pacific Ave	AWSC	E	C (21)
90	National Ave & Arsenal Way	TWSC	E	D (26)
92	Kitsap Way & Harlow Dr	TWSC	E	C (21)
95	Kitsap Way & Austin Dr	TWSC	E	E (48)
96	Northlake Way & Kitsap Lake Rd	TWSC	E	B (12)

ID	Name	Control[1]	LOS Std[2]	2030 PM LOS (Delay)[3]
97	Harlow Dr & Price Rd	AWSC	E	A (10)
98	1st St & Auto Ctr Blvd	AWSC	E	B (12)
301	Oyster Bay Ave & Roosevelt Blvd	TWSC	E	B (13)
302	Marine Dr & Rocky Point Rd	TWSC	E	A (10)
304	15th St & Corbet Dr	TWSC	E	A (10)
305	15th St & Snyder Ave	TWSC	E	B (11)
306	15th St & Callow Ave	TWSC	E	B (15)
307	Naval Ave & 15th St	Signal	E	A (6)
309	High Ave & 13th St	AWSC	E	B (12)
310	1st St & Hartford Ave	TWSC	E	A (9)
316	Park Ave & 5th St	AWSC	E	B (13)
317	Park Ave & 4th St	AWSC	E	A (10)
318	Pacific Ave & 5th St	AWSC	E	B (11)
319	Pacific Ave & 4th St	AWSC	E	A (9)
322	Austin Dr & Higbee Rd	TWSC	E	E (37)
WSDOT Intersections in City Limits				
2	Kitsap Way (SR 310) & SR 3 SB/Auto Ctr Way	Signal	D	D (49)
4	Kitsap Way (SR 310) & Shorewood Dr	Signal	D	B (19)
5	Kitsap Way (SR 310) & Ostrich Bay Ave	Signal	D	A (9)
6	Kitsap Way (SR 310) & Oyster Bay Ave	Signal	D	A (5)
7	Kitsap Way (SR 310) & National Ave	Signal	D	C (32)
8	Kitsap Way (SR 310) & Marine Dr	Signal	D	D (53)
9	Kitsap Way (SR 310) & Corbet Dr/Wilbert Ave	Signal	D	F (230)
10	Kitsap Way (SR 310) & 11th Ave	TWSC	D	D (46)
11	Kitsap Way (SR 310) & Wycoff Ave	Signal	D	A (6)
12	Kitsap Way (SR 310) & Callow Ave	Signal	D	C (32)
17	Warren Ave (SR 303) & 6th St	Signal	E	D (37)
21	Warren Ave (SR 303) & Burwell St (SR 304)	Signal	D	E (60)
22	Warren Ave (SR 303) & 11th St	Signal	E	D (54)
23	Warren Ave (SR 303) & 13th St	Signal	E	A (6)
24	Warren Ave (SR 303) & 16th St	Signal	E	A (7)
25	Wheaton Way (SR 303) & Sheridan Rd	Signal	E	E (63)
26	Wheaton Way (SR 303) & Sylvan Way	Signal	E	C (28)
27	Wheaton Way (SR 303) & Hollis St	Signal	E	A (7)
28	Wheaton Way (SR 303) & Riddell Rd	Signal	E	D (47)
36	Burwell St (SR 304) & Montgomery Ave	Signal	D	A (6)
37	Burwell St (SR 304) & Naval Ave	Signal	D	D (38)

Attachment 2.
2030 Intersection LOS Results

ID	Name	Control[1]	LOS Std[2]	2030 PM LOS (Delay)[3]
38	Burwell St (SR 304) & State Ave	Signal	D	A (10)
40	Burwell St (SR 304) & Park Ave	Signal	D	A (6)
42	Burwell St (SR 304) & Pacific Ave	Signal	D	A (9)
44	Charleston Blvd (SR 304) & Farragut Ave	Signal	D	C (27)
76	SR 303 SB Ramp & Callahan Dr	TWSC	E	A (9)
93	SR 3 NB Ramps & Austin Dr	TWSC	D	B (12)
94	SR 3 SB Ramps & Austin Dr	TWSC	D	D (30)
104	Loxie Eagans Blvd & SR 3 SB Ramps	TWSC	D	F (>300)
105	Loxie Eagans Blvd & SR 3 NB ramps	Signal	D	B (12)
106	Charleston Blvd (SR 304) & 1st St	Signal	D	B (15)
137	Wheaton Way (SR 303) & Broad St	Signal	E	B (11)
216	SR 3 & Imperial Way	Signal	D	C (31)

Attachment 3.

Sample Transportation Concurrency Review Fee Schedule

SAMPLE

Tier 1 Bremerton Transportation Concurrency Review Fee Schedule
Formula 1 - SMALL Developments

Formula: Total Fee - Base Fee + Rate per Unit * Development Units
If calculated fee is **MORE** than $2,925, use formula for Large Developments instead

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MAXIMUM No. of Units for this formula
RESIDENTIAL							
Residential - independent living	Single famiy, apartments, townhomes, condos	DU	$675	$22.50			100
Assisted living facilities	Residents don't drive; caregivers are employed	bed	$675	$5.60			400
RETAIL BUSINESS							
Small Retail (<10KSF)	Restaurants, banks, mini-mart[1]	1000 sf	$675	$224.70			10
General Retail (10KSF-200KSF)	Most stores, small shopping centers	1000 sf	$675	$56.20			40
Large Retail (>200KSF)	Most shopping centers, superstores				use other table	use other table	N/A
Day care	Child-care facilities	1000 sf	$675	$56.20			40
Medical facilities	Clinic, hospital, dental, veterinary	1000 sf	$675	$56.20			40
Hotel, motel by size	All types of room for rent	1000 sf	$675	$22.50			100
Automotive services	Gas station, car wash, quick lube, tire store[1]	vehicle servicing position	$675	$56.20			40

[1] If vehicle servicing is secondary to convenience market or fast food business, use small retail rate above for building space only

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MAXIMUM No. of Units for this formula
NONRETAIL BUSINESS							
Office	Workers at desks	1000 sf	$675	$28.10			80
Industrial	Workers on shop floor	1000 sf	$675	$28.10			80
Education	Schools, colleges	1000 sf	$675	$28.10			80
Warehouse	Storage with minimal employment	1000 sf	$675	$5.60			400
OTHER							
Church, theater	Large space used in off-hours	1000 sf	$675	$16.90			133
Recreation bldg	Health club, community center	1000 sf	$675	$22.50			100
Movie theater	Single- or multi-screen	1000 sf	$675	$22.50			100
Recreation land	Golf courrse, park	acre	$675	$5.60			400
Marina	Moorage for boats	slip	$675	$3.35			667
Park & Ride	Transit related car parking	stall	$675	$16.90			133
SPECIAL CASES							
Not specified above	Use rate per peak hr trip	pk hr trip	$675	$22.50			100

Fee schedule is based on typical trip generation rates, standardized across groups of similar land use categories

SAMPLE

Tier 1 Bremerton Transportation Concurrency Review Fee Schedule
Formula 2 - LARGE Developments

Formula: Total Fee - Base Fee + Rate per Unit * Development Units
If calculated fee is **LESS** than $2,925, use formula for Small Developments instead

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MINIMUM No. of Units for this formula
RESIDENTIAL							
Residential - independent living	Single famiy, apartments, townhomes, condos	DU	$1,800	$11.25			101
Assisted living facilities	Residents don't drive; caregivers are employed	bed	$1,800	$2.80			401
RETAIL BUSINESS							
Small Retail (<10KSF)	Restaurants, banks, mini-mart[1]	1000 sf			use other table	use other table	N/A
General Retail (10KSF-200KSF)	Most stores, small shopping centers	1000 sf	$1,800	$28.10			41
Large Retail (>200KSF)	Most shopping centers, superstores		$1,800	$5.60			200
Day care	Child-care facilities	1000 sf	$1,800	$28.10			41
Medical facilities	Clinic, hospital, dental, veterinary	1000 sf	$1,800	$28.10			41
Hotel, motel by size	All types of room for rent	1000 sf	$1,800	$11.25			101
Automotive services	Gas station, car wash, quick lube, tire store[1]	vehicle servicing position	$1,800	$28.10			41

[1] If vehicle servicing is secondary to convenience market or fast food business, use small retail rate above for building space only

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MINIMUM No. of Units for this formula
NONRETAIL BUSINESS							
Office	Workers at desks	1000 sf	$1,800	$14.05			81
Industrial	Workers on shop floor	1000 sf	$1,800	$14.05			81
Education	Schools, colleges	1000 sf	$1,800	$14.05			81
Warehouse	Storage with minimal employment	1000 sf	$1,800	$2.80			401
OTHER							
Church, theater	Large space used in off-hours	1000 sf	$1,800	$8.45			134
Recreation bldg	Health club, community center	1000 sf	$1,800	$11.25			101
Movie theater	Single- or multi-screen	1000 sf	$1,800	$11.25			101
Recreation land	Golf courrse, park	acre	$1,800	$2.80			401
Marina	Moorage for boats	slip	$1,800	$1.70			668
Park & Ride	Transit related car parking	stall	$1,800	$8.45			134
SPECIAL CASES							
Not specified above	Use rate per peak hr trip	pk hr trip	$1,800	$11.35			101

Fee schedule is based on typical trip generation rates, standardized across groups of similar land use categories

SAMPLE

Tier 2 Bremerton Transportation Concurrency Review Fee Schedule
Formula 1 - SMALL Developments

Formula: Total Fee - Base Fee + Rate per Unit * Development Units
If calculated fee is **MORE** than $5,845, use formula for Large Developments instead

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MAXIMUM No. of Units for this formula
RESIDENTIAL							
Residential - independent living	Single famiy, apartments, townhomes, condos	DU	$1,350	$44.95			100
Assisted living facilities	Residents don't drive; caregivers are employed	bed	$1,350	$11.25			400
RETAIL BUSINESS							
Small Retail (<10KSF)	Restaurants, banks, mini-mart[1]	1000 sf	$1,350	$449.40			10
General Retail (10KSF-200KSF)	Most stores, small shopping centers	1000 sf	$1,350	$112.35			40
Large Retail (>200KSF)	Most shopping centers, superstores				use other table	use other table	N/A
Day care	Child-care facilities	1000 sf	$1,350	$112.35			40
Medical facilities	Clinic, hospital, dental, veterinary	1000 sf	$1,350	$112.35			40
Hotel, motel by size	All types of room for rent	1000 sf	$1,350	$44.95			100
Automotive services	Gas station, car wash, quick lube, tire store[1]	vehicle servicing position	$1,350	$112.35			40

[1] If vehicle servicing is secondary to convenience market or fast food business, use small retail rate above for building space only

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MAXIMUM No. of Units for this formula
NONRETAIL BUSINESS							
Office	Workers at desks	1000 sf	$1,350	$56.20			80
Industrial	Workers on shop floor	1000 sf	$1,350	$56.20			80
Education	Schools, colleges	1000 sf	$1,350	$56.20			80
Warehouse	Storage with minimal employment	1000 sf	$1,350	$11.25			400
OTHER							
Church, theater	Large space used in off-hours	1000 sf	$1,350	$33.80			133
Recreation bldg	Health club, community center	1000 sf	$1,350	$44.95			100
Movie theater	Single- or multi-screen	1000 sf	$1,350	$44.95			100
Recreation land	Golf courrse, park	acre	$1,350	$11.25			400
Marina	Moorage for boats	slip	$1,350	$6.75			667
Park & Ride	Transit related car parking	stall	$1,350	$33.80			133
SPECIAL CASES							
Not specified above	Use rate per peak hr trip	pk hr trip	$1,350	$44.95			100

Fee schedule is based on typical trip generation rates, standardized across groups of similar land use categories

SAMPLE

Tier 2 Bremerton Transportation Concurrency Review Fee Schedule
Formula 2 - LARGE Developments

Formula: Total Fee - Base Fee + Rate per Unit * Development Units
If calculated fee is **LESS** than $5,845, use formula for Small Developments instead

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MINIMUM No. of Units for this formula
RESIDENTIAL							
Residential - independent living	Single famiy, apartments, townhomes, condos	DU	$3,595	$22.50			101
Assisted living facilities	Residents don't drive; caregivers are employed	bed	$3,595	$5.60			401
RETAIL BUSINESS							
Small Retail (<10KSF)	Restaurants, banks, mini-mart[1]	1000 sf			use other table	use other table	N/A
General Retail (10KSF-200KSF)	Most stores, small shopping centers	1000 sf	$3,595	$56.20			41
Large Retail (>200KSF)	Most shopping centers, superstores		$3,595	$11.25			200
Day care	Child-care facilities	1000 sf	$3,595	$56.20			41
Medical facilities	Clinic, hospital, dental, veterinary	1000 sf	$3,595	$56.20			41
Hotel, motel by size	All types of room for rent	1000 sf	$3,595	$22.50			101
Automotive services	Gas station, car wash, quick lube, tire store[1]	vehicle servicing position	$3,595	$56.20			41

[1] If vehicle servicing is secondary to convenience market or fast food business, use small retail rate above for building space only

Land Use Category	Typical examples or indicators	Dev. Unit	(a) Base Fee	(b) Rate per Unit	(c) Development Size	(a)+(b)+(c) Total Fee	MINIMUM No. of Units for this formula
NONRETAIL BUSINESS							
Office	Workers at desks	1000 sf	$3,595	$28.10			81
Industrial	Workers on shop floor	1000 sf	$3,595	$28.10			81
Education	Schools, colleges	1000 sf	$3,595	$28.10			81
Warehouse	Storage with minimal employment	1000 sf	$3,595	$5.60			401
OTHER							
Church, theater	Large space used in off-hours	1000 sf	$3,595	$16.90			134
Recreation bldg	Health club, community center	1000 sf	$3,595	$22.50			101
Movie theater	Single- or multi-screen	1000 sf	$3,595	$22.50			101
Recreation land	Golf courrse, park	acre	$3,595	$5.60			401
Marina	Moorage for boats	slip	$3,595	$3.35			668
Park & Ride	Transit related car parking	stall	$3,595	$16.90			134
SPECIAL CASES							
Not specified above	Use rate per peak hr trip	pk hr trip	$3,595	$22.70			101

Fee schedule is based on typical trip generation rates, standardized across groups of similar land use categories

Attachment G. Capital Improvement Plan (CIP)

Project Name	Description	Cost Estimate	6 yr & 20 yr	6 yr	20 yr
PROGRAMS					
City Safety Improvement Program	City Safety Improvement Program	$ 160,000	X		
Signal System Upgrade Program	Signal System Upgrade Program	$ 100,000	X		
City Street Lighting Program	City Street Lighting Program	$ 35,000	X		
Streets Preservation and Maintenance Program	Streets Preservation and Maintenance Program	$ 750,000	X		
Signage and Pavement Marking Maintenance Program	Signage and Pavement Marking Maintenance Program	$ 300,000	X		
Sidewalk Program	Sidewalk Program	$ 775,000	X		
Bridge Inspection and Repair Program	Bridge Inspection and Repair Program	$ 20,000	X		
6-YEAR PROJECTS					
Werner Rd Widening and Signal Improvements	Upgrade signals and roadway to help move traffic and improve level of service from SR 3 SB Ramps to Union Ave W	$ 7,700,000		X	
SR 303 Adaptive Signals (Sheridan to Riddell)	Upgrade signals to help move traffic and improve level of service on SR 303 from Sheridan to Riddell	$ 2,696,799		X	
Kitsap Way/Marine Dr Intersection Improvements	New roundabout at Kitsap Way and Marine Dr	$ 5,327,700		X	
6th St Active Transportation Improvements Project	Road diet and Rechannelization of the 6th Street corridor to convert of the roadway from 4-lanes to 3-lanes with continuous on-street bike lanes	$ 3,276,000		X	
Naval Ave Pedestrian & Bicycle Enhancements 1st to 15th	Revise lane configuration on Naval Ave to include 2-way center turn lane and bike lanes; pavement resurfacing, bike lanes, wider sidewalks, signal timing and phasing, intersection treatments, pavement markings, and modified storm drainage.	$ 10,106,100		X	
View Ridge Safe Routes to Schools Phase 1	View Ridge bicycle and pedestrian improvements with pedestrian, bicycle and shared facilities on Sylvan Way, E 33rd Street, Almira Drive north of Sylvan Way and the alleyway west of Almira south of Sylvan Way.	$ 4,285,000		X	
1st St Bicycle Corridor (Bruenn to Auto Center)	Bicycle and shared roadway signage on 1st Street from Bruenn Ave to Auto Center Way	$ 1,790,000		X	
SR 303 Warren Ave Bridge Multimodal Improvements	Roadway and sidewalk improvements, sidewalk and active transportation improvements south and north of the bridge; “Alternative X” proposes asymmetrical widening on both sides of the bridge, with a 12-foot clear-width walkway on the east side and an 8-foot clear-width walkway on the west side with two overlooks if within budget	$ 25,000,000		X	
View Ridge Elementary (Almira SRTS) Phase 2	Add bike lanes on Almira Dr from Sylvan Way to Riddell Rd. Includes widening and stormwater improvements	$ 6,512,000		X	
Sinclair/Union Intersection Improvements	Pedestrian safety improvements to the Sinclair and Union intersection	$ 1,250,000		X	
Belfair Valley Road Subgrade Repair and Overlay	Repair to Belfair Valley Road	$ 150,000		X	
Phinney Bay Retaining Wall and Guardrail Project	Retaining walls and guard rails on Phinney Bay Dr	$ 2,050,000		X	
Parish Creek Culvert Replacement	Replace the existing fish barrier culvert that crosses W Belfair Highway at Parish Creek with a 2-lane bridge.	$ 2,733,000		X	
11th Street Corridor Design Project	Design improvements to 11th Street between Pacific Ave to Kitsap Way in three phases. Kitsap Way to Naval, Naval to Warren, and Warren to Pacific.	$ 1,470,000		X	
11th Street Improvements (Kitsap to Naval)	Improvements to 11th Street from Kitsap Way to Naval Avenue, including crossing improvements, and EB left turn lane at Callow.	$ 2,035,000		X	
11th Street Community Blvd (Warren to Pacific)	Maintenance and preservation to 11th Street from Naval Ave to Warren Ave including compliant ADA ramps.	$ 2,483,000		X	
11th Street Preservation (Naval to Warren)	Maintenance and preservation to 11th Street from Naval Ave to Warren Ave including compliant ADA ramps.	$ 2,516,000		X	

Project Name	Description	Cost Estimate	6 yr & 20 yr	6 yr	20 yr
20-YEAR PROJECTS					
Park Ave/4th Street Mobility Hub	Construct a mobility hub at the southwest corner of Park Ave and 4th St for first/last mile connections; includes bike parking area	$ 1,622,400			X
High Ave/5th, 7th, 8th, 10th, and 12th St ADA Pedestrian Improvements	ADA Pedestrian Improvements	$ 490,000			X
Auto Center Blvd/Bruenn Ave Bicycle Lanes	New bicycle lanes	$ 4,150,650			X
Sheridan Reconstruction (SR 303 to Pine Road)	New bicycle lanes and roadway reconstruction	$ 11,700,000			X
Sylvan Way Sidewalks Bicycle Lanes (SR 303 to Olympus)	New bicycle lanes from Wheaton Way to Olympus Drive and fill sidewalk gaps	$ 4,801,000			X
Bicycle corridor signage, pavement markings and intersection treatments for shared roadway applications	Signage, pavement markings, and intersection treatments for roadways in Bremerton. 1st St., Bruenn/ACW; 1st St, Hartford/Naval; Holman, Perry/Trenton; Searle, ACW/SR3; Olding/Shore/Root, Austin/Ostrich Bay Trail; Cherry, Lebo/Sheridan	$ 600,000			X
Kitsap Lake Vicinity Area Ped/Bike Improvements	Improve bicycle pedestrian safety and connectivity	$ 8,539,871			X
Northlake Way Bicycle Corridor	Shoulder bikeway	$ 660,000			X
Shorewood Dr Bike Facilities	Add bike facility on Shorewood Dr to connect Kitsap Way to downtown Bremerton with bicycle signage and pavement markings; Add bike facilities on Shorewood Dr to connect to Kitsap Way	$ 5,299,840			X
Wheaton Way/Spruce Ave/E 30th St Bike Lanes	Bicycle facilities from Callahan Drive to Cherry Avenue using lower Wheaton Way, Spruce Avenue, and E 30th Street	$ 3,710,791			X
SR 303 Off-Corridor Bike Improvements	Add bike lanes on Callahan Dr, Cherry Ave, and Almira Dr (Callahan to Cherry Connection)	$ 3,710,791			X
Lake Flora Widening	Widening to southern end of potential southern end of Cross-PSIC Bremerton roads.	$ 4,556,163			X
Warren Avenue Left-Turn Lane Extension	Extend northbound left-turn lane on SR 303 from 16th Street to 13th Street	$ 996,318			X
Kitsap Way (SR 310)/Corbet Dr Intersection Improvements	New multilane roundabout with two lanes in each direction of Kitsap Way	$ 5,647,775			X
Adaptive Signals - Warren Avenue (Burwell to 17th)	Upgrade signals to help move traffic and improve level of service on SR 303 from Burwell to 17th.	$ 2,696,799			X
Burwell St/Warren Ave Intersection Improvements	Reconfiguration of Burwell Street and Warren Ave intersection, including closure of south leg.	$ 836,325			X
SR 303 - Median Channelization and Signage (Sheridan Rd to Sylvan Way)	Implement median access control with U-turns at intersections	$ 4,197,453			X
SR 303 - Median Channelization and Signage (Sylvan Way to Riddell)	Implement median access control with U-turns at intersections	$ 3,274,702			X
SR 303 - Median Channelization and Signage (Burwell St to 6th St)	Median, channelization and signing improvements	$ 1,824,979			X
Harlow Dr Corridor Project	Sidewalk & Bike Lanes from Kitsap Way to city limits and city limits to Auto Center Way/Bruenn Ave	$ 8,080,000			X
Auto Center Way	Sidewalks & bicycle lanes; Loxie Eagans Blvd to Kitsap Way (SR 310)	$ 4,670,000			X
Pine Rd Reconstruction	Sidewalks and bicycle lanes	$ 12,895,925			X
Sheridan Rd Corridor Project (SR 303 to Perry Avenue)	Sidewalks and bicycle lanes	$ 10,201,100			X
Armin Jahr Elementary (SRTS)	Improve bicycle and pedestrian safety near schools - Intersection of Dibb St and Stewart Rd	$ 939,386			X
Belfair Valley Road Shoulder Widening for Multimodal	Widen shoulder to accommodate multimodal travel - Division to McKenna Falls	$ 640,490			X
Sylvan Way Reconstruction (Sulphur Springs to Pine Rd NE)	Sidewalks and bicycle lanes from Sulphur Springs Ln to Pine Rd NE	$ 16,633,575			X
Sylvan Way Reconstruction (SR 303/Wheaton Way to Pine Rd NE)	Sidewalks and bicycle lanes from SR 303/Wheaton Way to Pine Rd NE	$ 13,928,425			X
Transit Vicinity Ped/Bike Improvements	Pedestrian/Bike improvements within 5 minute walkshed of park and rides	$ 7,138,560			X
18th St Active Transportation Facilities	Active transportation facilities on 18th St through Olympic College	$ 1,011,850			X
SR 303 Bury Utilities	Underground utilities that would otherwise be obstructions in the sidewalks	$ 28,899,675			X
Crownhill Elementary (SRTS) Phase 2	Improve bicycle and pedestrian safety near schools - Rocky Point Road and Marine Dr intersection	$ 690,306			X

Project Name	Description	Cost Estimate	6 yr & 20 yr	6 yr	20 yr
Naval Ave Elementary (SRTS)	Improve bicycle and pedestrian safety near schools - 10th and Naval Intersection	$ 939,386			X
Kitsap Lake Elementary (SRTS)	Improve bicycle and pedestrian safety near schools	$ 1,878,772			X
Mountain View Middle School (SRTS)	Add sidewalks and planting strips on the west side of Trenton Avenue and improve crossings at Holman Street and Trenton Avenue.	$ 2,591,575			X
SR 303 Active Transportation Improvements (Warren Ave Bridge to Sheridan Rd)	Active transportation improvements. Update striping, provide wayfinding, underground utilities; 10' sidewalks on both sides; Update lane striping along SR 303 to delineate active transportation facilities provide wayfinding for active transportation users; Underground utilities that would otherwise be obstructions in the sidewalks	$ 1,034,155			X
Marion St at Renaissance High School Crossing Improvements	Intersection improvements	$ 2,539,950			X
Sheridan Rd at Pine Rd Crossing Improvements	Intersection improvements	$ 454,300			X
11th St at Callow Ave Crossing Improvements	Intersection improvements	$ 1,800,000			X
Lower Wheaton Way Reconstruction (Lebo Blvd to Sheridan Rd)	Street reconstruction, Lebo to Sheridan	$ 2,846,624			X
Strategic Road Safety Plan Improvements	Build projects proposed in Strategic Road Safety Plan. Includes adaptive signal timing along Burwell St and pedestrian crossing treatments at Burwell St/Washington Ave & 6th St/Hewitt Ave; Pedestrian crossing treatments at 6th St/Hewitt Ave and Burwell St/Washington Ave	$ 3,136,640			X
NBK Vicinity Signal Improvements	Add all walk ped phases at Burwell St/ State Ave, Park Ave/Burwell St. Pacific Ave/Burwell St	$ 27,040			X
Roundabout at Callahan and BAT Lane to Sheridan	New roundabout at SR 303 & Callahan Ave, construct NB BAT lane, repurpose tunnel along Callahan Dr to be active transportation undercrossing; Bicycle facilities on Callahan Drive from SR 303 to lower Wheaton Way using existing tunnel under SR 303	$ 17,276,471			X
SR 303 Midblock Crossing (Between 6th St & 11th St)	Build a mid-block pedestrian crossing between 6th Street and 11th Street and provide a pedestrian hybrid beacon signal and pedestrian refuge island. Add bus stops near mid-block crossing.	$ 790,824			X
SR 303 Midblock Crossing (Between Hollis St & Riddell Rd)	Build a mid-block pedestrian crossing between Hollis Street and NE Riddell Road and provide a pedestrian hybrid beacon and pedestrian refuge island. Relocate bus stops to be near mid-block crossing	$ 608,326			X
SR 303 Midblock Crossing (North of Dibb St)	Build a mid-block pedestrian crossing north of Dibb Street and provide a pedestrian hybrid beacon and pedestrian refuge island	$ 608,326			X
SR 303 Midblock Crossing (North of Pearl St)	Build a mid-block pedestrian crossing north of Pearl Street and provide a pedestrian hybrid beacon and pedestrian refuge island. Relocate bus stops to be near mid-block crossing	$ 608,326			X
SR 303 - Roundabout at Riddell Road	Replace the signal at NE Riddell Road with a roundabout including pedestrian crossings at all four quadrants	$ 10,402,382			X
Perry Ave Corridor Project (E 17th Street to City Limits)	Sidewalks and bicycle lanes from E 17th Street to City Limits	$ 11,000,000			X
Riddell Rd Corridor Project	Sidewalks and bicycle lanes from Pine Rd NE to Perry Ave NE	$ 13,000,000			X
Gorst Sinclair Trail	Shared-use path connecting Kitsap Lake to Jarstad Park	$ 5,132,134			X
National Ave Reconstruction (1st Street to Kitsap Way)	Sidewalks and bicycle lanes from 1st Street to Kitsap Way	$ 2,219,875			X
West Belfair Valley Rd Guardrails	Evaluation and implementation from Division to McKenna Falls	$ 113,865			X
Sheridan Park Connector	Active transportation facility to connect to Lebo Boulevard on the north side of the bridge	$ 9,276,000			X
Shared-use Path Connection to Almira Dr	Provide 10' wide sidewalks from SR 303 to Almira Drive using NE 32nd Street through Old East Bremerton High School, connecting near Dibb Street	$ 3,710,791			X

Project Name	Description	Cost Estimate	6 yr & 20 yr	6 yr	20 yr
SR 303 Improvements (13th St to Warren Ave Bridge), Phase 6	Channelization, sidewalk, and transit improvements from 13th St to Warren Ave Bridge; Widen sidewalk to 10' on west side of SR 303 between 13th Street and Warren Avenue Bridge	$ 3,284,963			X
SR 303 - BAT Lane & Sidewalks (Sylvan Way to Hollis Street)	Construct northbound BAT lane and provide 10' wide sidewalks on both sides of SR 303	$ 43,750			X
1st St West of Harlow Sidewalks	Auto Center Blvd./Bruenn Ave to Auto Center Way	$ 1,790,000			X
16th St Sidewalks	Sidewalks	$ 700,000			X
26th St Sidewalks	Sidewalks	$ 1,200,000			X
Corbet Dr Sidewalk	Sidewalk	$ 4,110,000			X
Hartford St Sidewalk	Sidewalk	$ 1,690,000			X
Phinney Bay Dr Sidewalks	Rocky Point Road to Corbet Drive	$ 3,800,000			X
Preble St Sidewalks	Sidewalk	$ 3,190,000			X
Price Rd Sidewalks	Sidewalks	$ 3,790,000			X
Rocky Point Rd Sidewalks	Sidewalks	$ 3,020,000			X
Roosevelt Blvd Sidewalks	Sidewalks	$ 2,790,000			X
Tracyton Beach Rd Sidewalks	Sidewalks	$ 1,110,000			X
Magnusson Way/Stone Way Sidewalks	Sidewalks	$ 1,620,000			X
Shorewood Dr Sidewalks	Sidewalks	$ 5,550,000			X
NAD Park-Jackson Park Naval Housing Area Shared Use Path	Shared use path	$ 2,700,000			X
Snyder Ave Sidewalks	Sidewalks	$ 5,360,000			X
Ped Connector Under Warren Ave Bridge South Approach	Improve pedestrian safety and connectivity	$ 4,075,787			X
State St Pedestrian Corridor Improvements	Improve pedestrian safety and connectivity - from 1st Street to 4th Street	$ 7,116,559			X
Matan & Lillian & James Walker Park Sidewalk Connector	Sidewalk connector; Bloomington & Olympic	$ 626,257			X
Anderson Cove Sidewalk Improvements	Construct sidewalks along Naval Ave from 19th St to 15th St	$ 626,257			X
Shore Dr Shared-use Path Planning Study	Improve bicycle and pedestrian safety and connectivity; Convert upper portion of Shore Dr. to shared use path	$ 85,399			X
Marine Dr Nonmotorized Improvements	Improve bicycle and pedestrian safety and connectivity	$ 1,352,146			X
Wheaton Way at Callahan Sidewalk Improvement	Improve pedestrian safety and connectivity	$ 266,877			X
Petersville Rd Sidewalk	Sidewalks	$ 5,916,225			X
West of Charleston Blvd Sidewalk Improvements	Improve sidewalk conditions in the neighborhood west of Charleston Blvd	$ 8,652,800			X
NBK Vicinity Active Transportation Improvements	"Within the 10-minute walksheds of base gates, upgrade and/or add sidewalks; upgrade marked and unmarked crossings to be ADA compliant."	$ 71,601,920			X
1st St Shared-Use Path	Add a shared-use path along south side of 1st Street between Naval Ave and Callow Ave; Stripe eastbound contraflow bicycle lane; westbound bicycle travel accommodated in shared vehicle/bicycle lane; JCTP: AT 15 add shared-use path on south side of 1st St between Naval Ave and Callow Ave	$ 324,480			X
4th St Landscaping Replacement and Sidewalk Repair	Maintenance upgrades to sidewalk to improve pedestrian safety and connectivity	$ 569,325			X
SR 303 BAT Lane & Sidewalks (Sheridan Rd to Sylvan Way)	Construct northbound BAT lane and provide 10' wide sidewalks on both sides of SR 303	$ 33,960,404			X
SR 303 - Sidewalk Improvements (Burwell St to 13th St)	Sidewalk improvements from Burwell St to 13th St	$ 3,163,298			X
13th St Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, traffic calming from Naval Ave to Park Ave	$ 717,139			X
15th St Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Lafayette Ave to High Ave	$ 270,244			X
Russell Rd Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from SR 310 to National Ave	$ 136,540			X
High Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from 9th St to 19th St	$ 187,793			X

Project Name	Description	Cost Estimate	6 yr & 20 yr	6 yr	20 yr
Trenton Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Shore Dr to Stone Way	$ 182,121			X
Ironsides Ave/Nipsic Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Shore Dr to Holman St	$ 72,322			X
4th and 5th Streets Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming between Olympic Ave and Washington Ave	$ 729,294			X
Phinney Bay Dr. Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Rocky Point Rd to Lafayette Ave	$ 69,080			X
Arsenal Way/Patten Ave Safety Improvements	Improve bicycle and pedestrian safety and connectivity; bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming	$ 142,331			X
Oyster Bay Ave Traffic Calming	Help move traffic and improve roadway safety; Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming.	$ 996,318			X
Park Ave Bike Lanes	Construct bike lanes on Park Ave between 4th St and 6th St.	$ 135,200			X
Burwell Street (SR 304) Adaptive Signals	Implement adaptive signals along SR 304 within from Burwell St and Washington Ave to SR 304/Charleston Beach Blvd including 12 signalized intersections	$ 3,500,175			X
Callow Ave streetscape improvements & festival street	Streetscape improvements between Burwell and 13th Street with a festival street section between 6th to 9th to include street lights, festoon lighting, and urban furniture	$ 11,630,000			X
Clare Ave Shared-Use Path	Develop a new multi-use path from Lebo Blvd to SR 303 along Clare Avenue	$ 910,000			X
West Kitsap Way Phase 1a - Chico Way/Northlake Way to Harlow Dr	Reconfiguration and construction between Chico Way/Northlake Way to Harlow Dr	$ 4,668,330			X
West Kitsap Way Phase 1b - Harlow Dr to Lakehurst Dr	Reconfiguration and construction between Harlow Dr and Lakehurst Dr	$ 3,998,000			X
West Kitsap Way Phase 2a - Lakehurst Dr to Austin Dr	Reconfiguration and construction between Austin Dr and Lakehurst Dr	$ 6,590,000			X
West Kitsap Way Phase 2b - Austin Dr to Burchfield Dr	Reconfiguration and construction between Austin Dr and Burchfield Dr	$ 5,965,871			X
West Kitsap Way Phase 3 - Wilmont St to Burchfield Dr	Reconfiguration and construction between Wilmont St and Burchfield Dr	$ 13,583,000			X
West Kitsap Way Phase 4 - Wilmont St to SR3/Auto Center Way	Reconfiguration and construction between Wilmont St and SR 3 Interchange	$ 4,102,000			X
Catalyst School SRTS	Safe routes to school improvements for access to the Catalyst School; sidewalks & signage	$ 300,000			X
RRFB Sheridan Road	RRFB installation for Sheridan at crossing to Spruce Ave	$ 100,000			X
12th Street Reconstruction (Warren to Elizabeth)	Reconstruction of 12th Street from Warren to Elizabeth	$ 640,150			X
Burwell Street Corridor Study	Study expansion of Burwell Street for vehicle capacity and expanded sidewalks or pedestrian improvements on the south side of Burwell from Park Ave to N Callow Ave.	$ 630,000			X
Wycoff Ave Streetscape and ped/bike improvements	Sidewalk replacement and new sidewalk from 6th Street to 15th Street, bike/ped crossing improvements north/south on Kitsap Way, traffic calming at intersections with Burwell St, 13th Street and 15th Street	$ 6,401,500			X
Hemlock St Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, traffic calming, and crossing improvements at Callahan Drive.	$ 610,000			X
Marine Drive Sidewalks	Construct sidewalks on the west side of Marine Drive from Kitsap Way to Rocky Point Road.	$1,352,146			X
Adele Avenue Sidewalks	Replace sidewalks on the west side of Adele Avenue and fill sidewalks gaps between 11th Street and 9th Street.	$ 1,393,875			X
Improve crossing of Adele Ave and 6th Street	of Marion Ave N and 6th Street at Adele and install sidewalks through the intersection on the south side of 6th Street.	$ 320,000			X
Marion Avenue Sidewalks	Add sidewalks to the west side of Marion Avenue from 6th Street to 1st Street & intersection Improvement at 1st.	$ 2,539,950			X
Werner Road Shared Use Path	Shared-use path from Union Ave W/Auto Center Way to Panoramic Loop.	$ 6,830,000			X
Park Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from 6th Street to 17th Street.	$ 860,000			X
1st Street East of Callow Sidewalk Infill and Replacement	Replace sidewalks on the north side between N Wycoff Ave and N Lafayette Ave; add on south side of 1st Street from N Wycoff Ave to Marion Ave.	$ 1,720,000			X

Project Name	Description	Cost Estimate	6 yr & 20 yr	6 yr	20 yr
S Summit Ave Bicycle Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Rodgers to City Limits.	$ 750,000			X
S Cambrian Ave Bike Corridor	Bicycle and shared roadway signage, pavement markings bike crossing improvements across SR 304 to connect with existing 304 bike facilities.	$ 500,000			X
Rodgers St Bike Corridor	Bicycle and shared roadway signage, pavement markings, intersection treatments, traffic calming from S Summit Street to S Cambrian Ave.	$ 320,000			X
13th Street Sidewalks	Sidewalks on 13th Street from N Callow Ave to Kitsap Way.	$ 3,650,000			X
E 13th Street Corridor Project	Sidewalks and bicycle and shared roadway signage, pavement markings, intersection treatments, and traffic calming from Perry Ave to Trenton Ave.	$ 1,410,000			X
Harkins Street and Pitt Ave Bicycle Improvements	Separated bike lanes on Harkins St to Pitt Ave and painted bike lanes on Pitt Avenue to E 11th Street; intersection improvements at Harkins Street and Pitt Avenue.	$ 550,000			X
Wayfinding Implementation Phase II	Phase 1 completion this year, Phase 2 will remove and replace approximately 50 existing signs throughout the City with the new City standard wayfinding signs	$ 175,000			X
PUGET SOUND INDUSTRIAL CENTER (PSIC) ROADWAY PROJECTS					
Area B Collector Road	New roadway west of SR-3 at Cross SKIA intersection	$ 73,998,198			
Area C Collector Road	New roadway south of Lake Flora Road to the Belfair Bypass	$ 3,056,409			
Area D Collector Road	Portion of new roadway south of Lake Flora Road	$ 829,207			
Area F Collector Road	New roadway north of Lake Flora Road	$ 5,228,331			
Area G Collector Road	New roadway east from Cross SKIA Road	$ 691,172			
Area A Local Access Road	0.43 miles of local assess roads	$ 1,134,082			
Area B Local Access Road	1.30 miles of local assess roads	$ 3,428,719			
Area C Local Access Road	1.30 miles of local assess roads	$ 3,428,719			
Area D Local Access Road	0.35 miles of local access roads	$ 923,117			
Area E Local Access Road	0.47 miles of local access roads	$ 1,951,799			
Area F Local Access Road	1.00 miles of local access roads	$ 2,637,476			
Area G Local Access Road	0.52 miles of local access roads	$ 1,371,521			
Analysis Area C/D and Lake Flora Road	New intersection southeast of existing Lake Flora Road / SR 3 intersection	$ 1,665,074			
Cross-SKIA Connector and Lake Flora Road	New intersection at southern terminus of extension of Cross-SKIA Connector	$ 1,665,074			
Lake Flora Widening	Widening to southern end of potential southern end of Cross-SKIA Road	$ 5,330,067			
Trails	12 miles of trails	$ 2,164,596			
SR 3 / Imperial Way	Signalize intersection, modify approaches	$ 3,330,147			
SR 3 / Sunnyslope Road	Signalize intersection, modify approaches	$ 3,330,147			
SR 3 / SR 16 / Sam Christopherson Ave	Grade separation	$ 104,899,631			
Old Clifton Road / SR 16 Eastbound Ramps	Signalize intersection, add dedicated right turn EB and dedicated left turn WB	$ 1,665,074			
Old Clifton Road / SR 16 Westbound Ramps	Signalize intersection	$ 832,537			
Analysis Area C and SR 3	New intersection southwest of existing Lake Flora Road / SR 3 intersection	$ 3,330,147			
Cross-SKIA Connector / Analysis Area B / SR 3	New intersection at northern terminus of Cross-SKIA Connector	$ 832,537			
SR 3 Widening	Widening from Imperial Way to Gorst	$ 181,493,012			
Belfair Bypass	2-lane divided highway with capability for 4 lanes	$ 126,545,587			