TRANSPORTATION PLANNERS AND ENGINEERS

bunt & associates

Oakridge Transit Centre

Transportation Assessment and Management Study

Version 1

Prepared for

Oakridge Transit Centre Limited Partnership

Date

November 26, 2025

Project No.

04-23-0050

November 26, 2025
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Michael Burak
Oakridge Transit Centre Limited Partnership
20th Floor - 1040 West Georgia Street
Vancouver, BC
V6E 4H1

Dear Michael:

Re: Oakridge Transit Centre
Transportation Assessment and Management Study (TAMS)

Bunt & Associates has completed a Transportation Assessment and Management Study (TAMS) for the proposed Mayfair West of the former Oakridge Transit Centre located at 949 W 41st Avenue in Vancouver, BC.

This report includes a review of the existing multi-modal transportation network, an estimate of the trip generation for the proposed redevelopment and identifies off-site transportation system improvements to mitigate impacts for all travel modes within the study area. Additionally, the Parking Bylaw requirements for the site are outlined in this report. Please do not hesitate to contact us should you have any comments or questions on this report.

Yours truly,
Bunt & Associates

Jing Min, P.Eng.
Transportation Engineer

Sijia Jin, EIT.
Transportation Analyst

CORPORATE AUTHORIZATION

Prepared By: Sijia Jin, EIT

Bunt & Associates Engineering Ltd.
1550-1050 West Pender Street
Vancouver, BC V6E 3S7
Canada

Reviewed By: Jing Min, P.Eng.
Transportation Engineer

Telephone: +1 604 685 6427
Facsimile: +1 604 685 6579

Date: November 26, 2025
Project No. 04-23-0050

Approved By: Yulia Liem, P.Eng., PTOE.
Principal



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EXECUTIVE SUMMARY

Oakridge Transit Centre Limited Partnership is planning to develop the 13.8-acre Oakridge Transit Centre site located at 949 W 41st Avenue within the Cambie South neighbourhood.

Bunt prepared an earlier TAMS report in support of the Oakridge Transit Centre rezoning application submitted in July 2019 and March 2022. Major site plan layout and proposed density have changed since then. To support the rezoning submission, Bunt has prepared this updated TAMS to reflect the latest site statistics and new policies as per City of Vancouver guidelines.

Proposed Development

The proposed site plan is planned to be redeveloped into a mixed-use site that is primarily residential with retail frontage on W 41st Avenue and a daycare at Parcel E for a total 16 buildings over eight parcels sectioned based on the proposed road network. The site will consist of 2,816 residential units (1,642 strata units, 1,001 rental units, and 173 social housing units), 4,922 sq.m. of retail uses, and a daycare with 69 children.

Existing Conditions

The site is well served by public transit with R4 RapidBus service along 41st Avenue, supplemented by other bus services on the FTN operating along Oak Street and W 41st Avenue plus the sites' proximity the Oakridge-41st Avenue Skytrain Station (12-minute walk). The site is located in a walkable neighbourhood with various destinations within a short walk. It is well positioned to access the city's east-west and north-south bikeway network with local street bikeways located along Willow Street and W 37th Avenue.

The intersections of W 37th Avenue and W 38th Avenue at Oak Street are experiencing longer delays due to the heavy through traffic along Oak Street, which is common for the traffic entering from minor streets to major roads. The remaining study intersections within the study area currently operate well, within the acceptable performance thresholds during the peak hour periods.

Background Conditions

Site traffic flows from known developments (JCC, Heather Lands and Oakridge Park) in the area were included in the background traffic forecast. An annul growth rate of negative 0.5% was applied in the analysis based on a review of historical traffic data in the study area.

Background operations at the three study area intersections that are expected to be above acceptable capacity thresholds in the future:

- The Oak Street & W 37th Avenue intersection is currently controlled by a pedestrian-activated half signal which cannot be modelled directly in Synchro. Analyzing it as a minor stop-control

intersection shows long delays with level of service (LOS) F for the westbound movements while two-phase signalized analysis shows much better result. Upgrading to a full signal is not recommended as W 37th Avenue is a designated cycling route and it may encourage drivers to shortcut through the community to avoid W 41st Avenue.

- The Oak Street & W 38th Avenue stop-controlled intersection southbound left turn movement and westbound movement continues to experience long delays with LOS F during the AM peak hour, due to the anticipated shortcutting traffic to avoid the congested Oak Street & W 41st Avenue intersection.

- The Oak Street & W 41st Avenue intersection would be at capacity. This means that with the addition of new traffic generated locally by JCC, Heather Lands and Oakridge Park sites, external traffic to the area would need to either choose different routes or time period outside the peak hour to travel, or switch away from automobile use as these options would provide for a more competitive travel time.

Site Traffic

The site is expected to generate 571 vehicle trips (= 112 entering + 459 exiting) during the weekday AM peak hour and 662 vehicle trips (= 403 entering + 259 exiting) during the weekday PM peak hour. This equates to an average about 11 vehicles per minute at peak times.

Total Conditions

Traffic volumes at major study intersections are expected to increase less than 7 percent due to the addition of site-generated traffic from Oakridge Transit Centre while traffic volumes at minor study intersections (other than the laneways) are expected to increase by up to 55 percent.

Key insights and findings when comparing the 2035 Total conditions with 2035 Background conditions are as follows:

- The Oak Street & W 41st Avenue intersection continues to operate above theoretical capacity during both peak hours with the addition of site-generated trips. The V/C values are anticipated to increase in both peak hours, and the reported overall V/C are over 1.0.
- Willow & W 41st Avenue performs acceptably with a full-movement signal in place.
- W 41st Avenue & Site / JCC Access intersection, ss expected the concentration of site-generated traffic at the site access with W 41st Avenue (with planned signalization upgrades) would result in increased LOS ratings and V/C values. However, all the movements are still expected to operate within acceptable performance thresholds.
- At the W 38th Avenue & Oak Street intersection, southbound left turn movement and westbound movement continue to experience delays. Assuming full signal, the queueing issue will be mitigated.

A mitigation scenario in the form of signal timing optimizations, plus dual WBL turn lanes were tested at Oak Street and W 41st Avenue to increase capacity for left-turn movement. While the several movements of this intersection continue to exceed acceptable performance thresholds which result in operation improvements on WBL movement during PM peak hour, the mitigation results in improved operations on all movements during both peak hours with V/C ratios close to or below 1. However, Bunt recommends the City to monitor the intersection operations to understand the travel pattern trend and consider further mitigations only when necessary.

Site Plan Review

Access

It is proposed that each parcel will have a separate underground parkade shared among the buildings on each parcel. Each parkade will have parking restricted to within individual parcels and will not be positioned in the dedicated road allowance. The access to each parkade is proposed from one of the internal/local roadways.

Parking

A total of 26 of accessible parking spaces and 141 residential visitor spaces are required for this development. A total of 2,551 parking spaces will be provided at three underground parking levels, which is expected to exceed the minimum requirements for both visitor and accessible parking. Detailed allocation is still being refined at this point.

A total of 7,055 Class A Bicycle spaces and 61 Class B Bicycle spaces is required for the development. Detailed provision for bicycle parking is still under development at this point. All long-term bicycle parking (Class A) will be installed indoors within convenient distance of the end-of-trip facilities, where applicable. This indoor location will ensure enhanced security and cover from weather.

Loading

A total of 29 Class A passenger loading spaces is required for this development. Detailed provision is still under development at this point.

A total of 14 Class A spaces, 17 Class B spaces and one Class C loading spaces are required for this development. Detailed provision and locations are still under development at this point.

TDM

The proposed development is inside of transit-oriented area and rezoned under the Rezoning Policy for Sustainable Large Developments, where the submission of a TDM Plan is mandatory. The developer is planning to provide TDM Plan C: Shared Mobility Package. TDM Plan C Shared Mobility Package requires a combination of car share program and transit passes. It is anticipated that the TDM Plan for the site will be further refined as the project progresses to the next phase of the project approval process.

1. INTRODUCTION

1.1 Study Purpose & Objectives

Oakridge Transit Centre Limited Partnership is planning to develop the 13.8-acre former Oakridge Transit Centre (OTC) site located at 949 W 41st Avenue into a mixed-use site that is primarily residential with retail frontage on 41st Avenue and a daycare at Parcel E. The City of Vancouver Policy Statement for the Oakridge Transit Centre site approved by City Council in April 2015 provided guidance on the future land use, density, form of development, public realm, and transportation network.

Bunt & Associates Engineering Ltd. (Bunt) prepared a Transportation Assessment and Management Study (TAMS) in support of the Oakridge Transit Centre rezoning application submitted in July 2019. Following minor changes in the master plan, which predominantly related to the relocation of housing types across the project site, the rezoning application was resubmitted in 2020. Bunt updated the TAMS report in March 2022. Major site plan layout and proposed density changed since then due to the new policy following the provincial mandate for sites within Transit Oriented Areas, which applies to OTC. To support the rezoning submission, Bunt has prepared this updated TAMS to reflect the latest site statistics and new policies as per City of Vancouver guidelines.

This TAMS report includes an assessment of the development's net traffic impact, a parking/loading requirements review, and our final findings and recommendations. The TAMS also includes an intended Transportation Demand Management (TDM) Plan, which is mandated by the City during DP application for projects defined as 'large sites', i.e., involve a total site size of 8,000 sqm or more; or contain 45,000 sqm or more of new floor area.

1.2 Study Scope & Area

The City of Vancouver has requested that a Transportation Assessment and Management Study (TAMS) be prepared as part of the Rezoning Application. Previous terms of reference for the study approved by the City are included in **Appendix A** for reference.

The site is located in the South Cambie neighbourhood of Vancouver as shown in **Exhibit 1.1**. It is bounded by W 38th Avenue to the north, the laneway behind Willow Street to the east, W 41st Avenue to the south, and the laneway behind Oak Street to the west.

1.3 Organization of Report

This report has been arranged in the following manner:

- **Section 2** describes the current transportation network, relevant plans and policies, and the existing operating conditions within the study area;

- **Section 3** presents the background traffic forecasts, vehicle trip generation for the project and assesses the effect of the development traffic on the study road network;
- **Section 4** outlines the vehicle parking, bicycle parking, loading, and passenger spaces as well as reviews the access and site layout; and
- **Section 5** summarises the intended TDM Plan option and requirements; and
- **Section 6** presents the conclusions and recommendations of the TAMS along with recommendations.

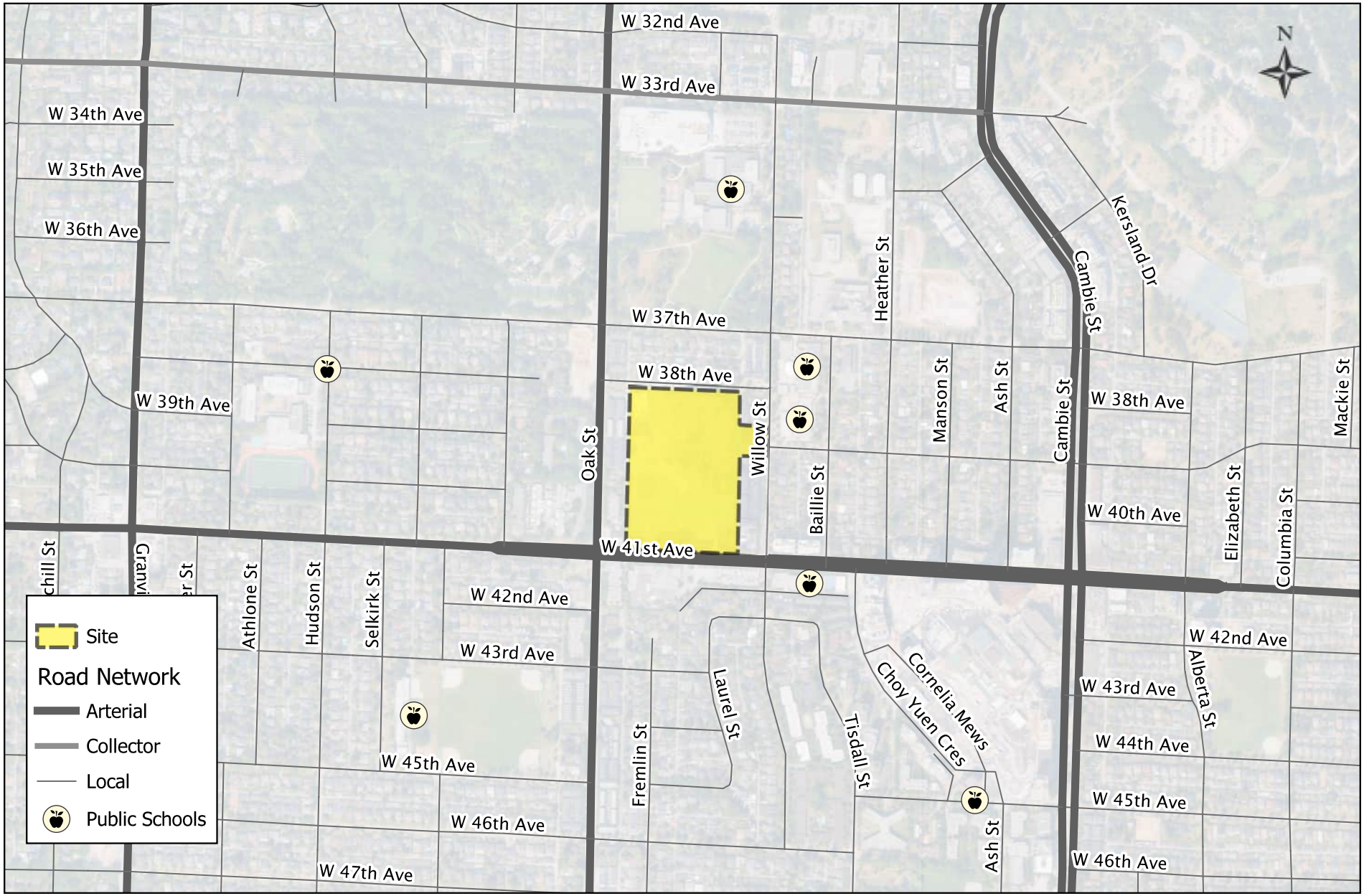
1.4 Proposed Development

The proposed site plan is illustrated in **Exhibit 1.2** and includes eight parcels sectioned based on the proposed road network. Land use on site will be primarily residential (market housing, rental housing, and social housing) with retail frontage on 41st Avenue and a daycare at Parcel E as outlined in **Table 1.1**. Both the 2022 site statistics and the updated site statistics are presented for comparison.

It is proposed that each parcel will have a separate underground parkade shared among the buildings on each parcel. The access to each parkade is proposed from one of the internal laneways.

Table 1.1: Proposed Land Uses

LAND USE	SUB-CATEGORY	PREVIOUS STATS (MAR-22)		UPDATED REZONING (SEP-25)	
		DENSITY (SM)	UNITS	DENSITY (SM)	UNITS
Residential	Strata	95,856	1,135	143,718	1,642
	Rental	11,738	165	68,437	1,001
	Social Housing	25,789	330	10,740	173
Retail	n/a	2,230	-	4,922	-
Daycare	n/a	764	69 children	779	69 children



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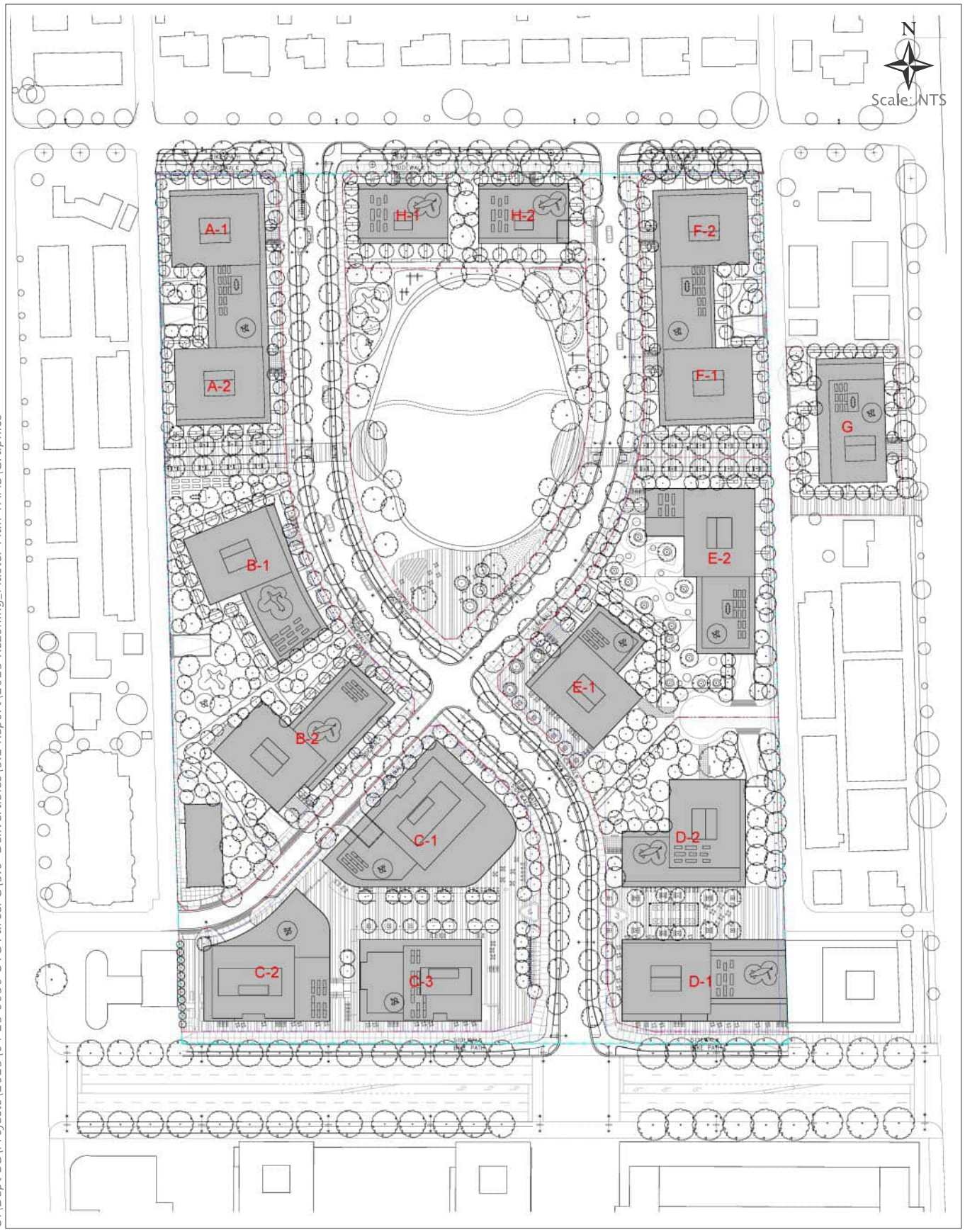
Exhibit 1.1

Site Location & Study Area

Oakridge Transit Centre

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Exhibit 1.2
Site Plan

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2. EXISTING CONDITIONS

2.1 Land Use

The development site is zoned Single- Family Residential (RS-1) and is located within the Cambie South neighbourhood. While the site was formally home to a transit centre, it is currently vacant.

The neighbourhood profile is mixed-use including commercial, residential, and institutional. Jewish Community Centre is just south of the subject site. Several schools, BC Children's Hospital, Queen Elizabeth Park, Jewish Community Centre, and Oakridge Park are all within walking distance.

2.2 Existing Transportation Network

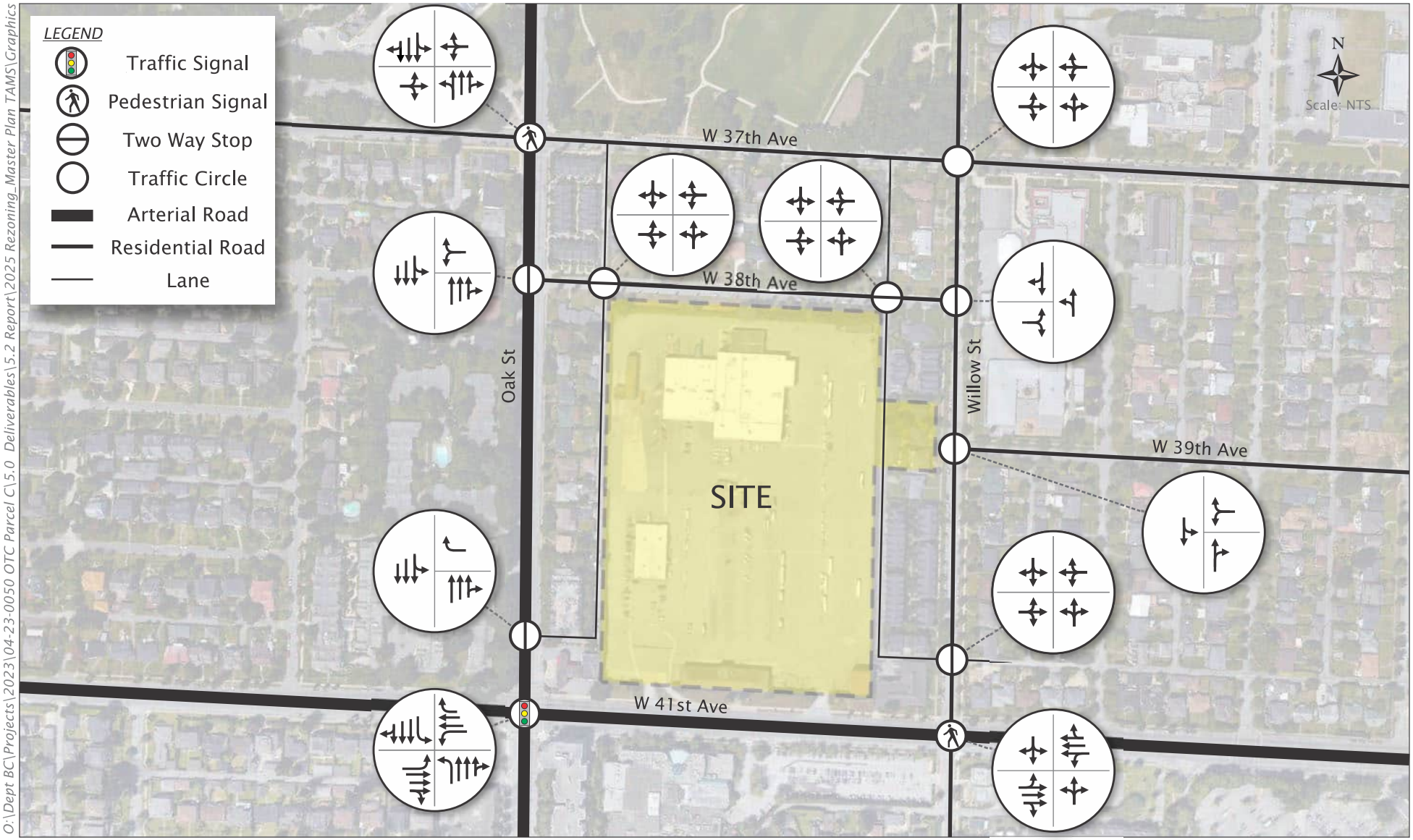
2.2.1 Road Network

Exhibit 2.1 illustrates the existing laning and traffic controls for all intersections located within the agreed study network. Bordering the site are two main arterial roads, W 41st Avenue to the south and Oak Street to the west. To the east is Willow Street, a collector street, and to the north is W 38th Avenue. Also of relevance to this study are W 39th Avenue and W 37th Avenue.

W 41st Avenue functions primarily as a four-lane road. However, adjacent to the site, it expands up to six lanes with one bus/cycling shared lane (7am to 7pm) at each direction along the site frontage. Dedicated left-turn storage lanes are provided on both the eastbound and westbound approaches to Oak Street. To the west, Oak Street is an arterial road with a six-lane cross-section plus dedicated left-turn lanes on the northbound and southbound approaches. Time-restricted parking is permitted along both sides of the street.

Willow Street is identified as a local street bikeway with two vehicular travel lanes and parking permitted on both sides of the street. The exception to this is along the frontage of the adjacent school to the east of the street, where no parking is permitted between 8am and 5pm on school days.

Both W 38th Avenue and W 39th Avenue are residential roads with limited or no parking or stopping restrictions. Further north, W 37th Avenue is also identified as a local street bikeway and therefore includes speed reduction measures (speed humps) across the two travel lanes for vehicles with parking once again permitted along both sides.



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Exhibit 2.1

Existing Laning and Traffic Control

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2.2.2 Transit Network

The development site is well-connected to transit with frequent bus routes located along both W 41st Avenue and Oak Street, and the Oakridge – 41st Canada Line SkyTrain station located approximately 800m to the east.

In January 2020, the R4 Rapid Bus was introduced to the 41st Avenue corridor. This Rapid Bus service connects UBC, the Canada Line, and the Expo Line with fast, frequent, and reliable transit service. The 41st Avenue corridor is the second busiest bus corridor in the region after Broadway serving more than 11 million trips per year. During the weekday peak periods, the Rapid Bus R4 serves stops within the immediate vicinity of the Oak Street & W 41st Avenue intersection with a frequency of 3-6 mins, providing regular connections to the Oakridge -41st Canada Line SkyTrain station.

For other services, bus stops in both directions are located a short walk away on Oak Street between W 37th Avenue and W 41st Street as well as along W 41st Street between Oak Street and Willow Street. It is noted that both Oak Street and W 41st Street are part of TransLink's Frequent Transit Network (FTN). These stops serve a number of bus routes as well as the Canada Line SkyTrain as shown in **Table 2.2**.

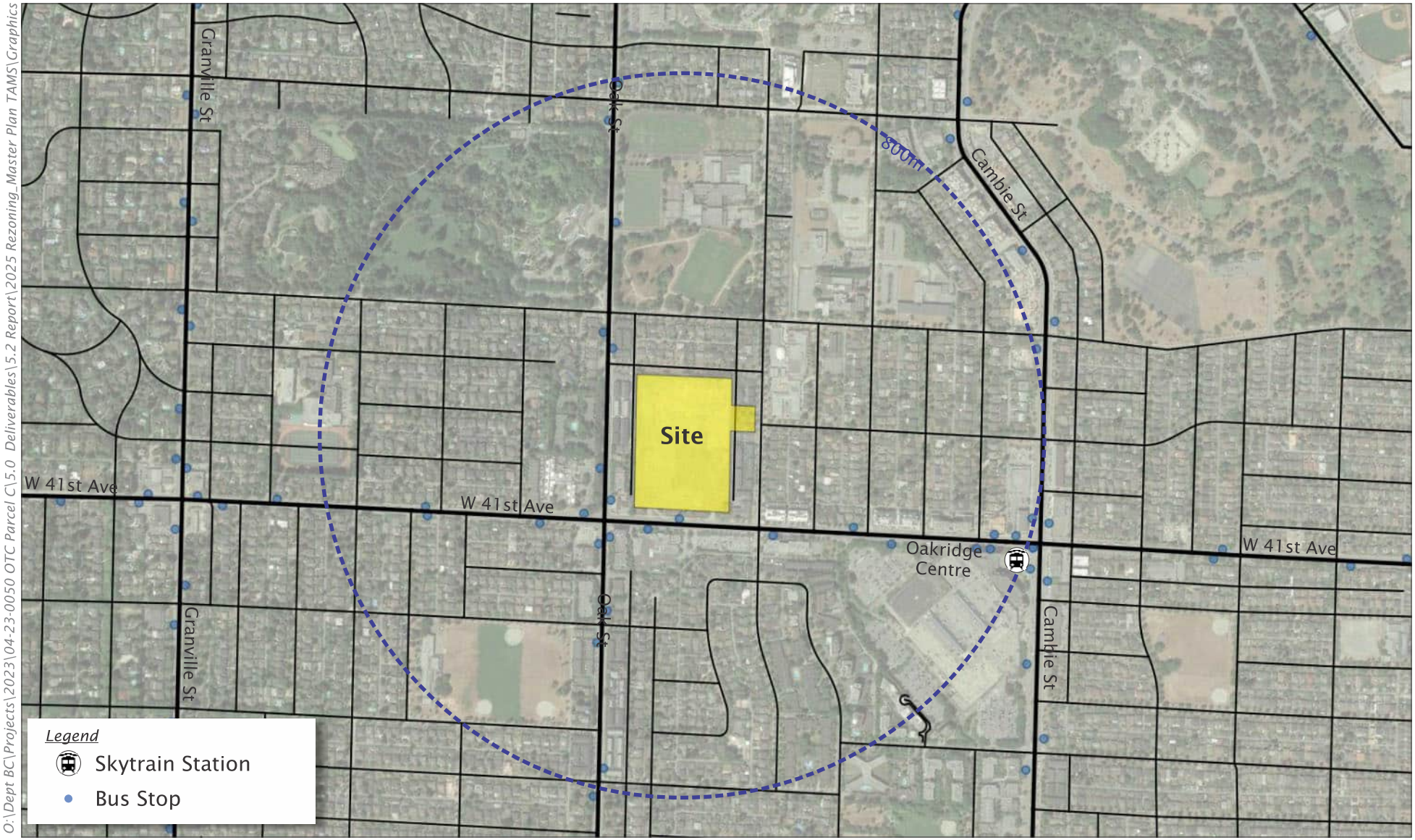
Exhibit 2.2 illustrates the locations of bus stops and SkyTrain stations within 800 m of the site.

According to Walk Score (www.walkscore.com) a website that rates addresses out of 100 based on the distance and type of nearby transit lines, the site has a Transit Score of 75 and is rated as "Excellent Transit" given that transit is convenient for most trips. The key finding is that the site is well served by public transit given the frequent bus service along Oak Street and W 41st Street and the site's proximity the SkyTrain station.

Table 2.2: Transit Stops within 800m Walking Distance of Site

STOP LOCATION	DIRECTION	AMENITY	ROUTES SERVICED	WALKING DISTANCE
W 41st Avenue & Oak Street	WB	-	41	150m
Oak Street & W 41st Avenue	NB	Shelter, Bench, Bin	17	150m
Oak Street & W 41st Avenue	SB	Shelter, Bench, Bin	17	180m
W 41st Avenue & Oak Street	WB	RTI, Shelter, Bench, Bin	R4	180m
West 41st Avenue & Oak Street	EB	RTI, Shelter, Bench, Bin	R4	240m
W 41st Avenue & Osler Street	EB	-	41	250m
Cambie St & W 41st Avenue	NB	Shelter, Bench, Bin	15, N15	750m
Cambie St & W 41st Avenue	SB	Shelter, Bench, Bin	15, N15	750m
Oakridge-41st Avenue Station	NB/SB	-	Canada Line	750m

Note: RTI – Real Time Information



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Exhibit 2.2

Transit Stops

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2.2.3 Cycling & Pedestrian Networks

This site is located within an urban environment conducive to biking and walking. The average person is typically willing to walk a distance of 400-800 m, or a 5- to 10-minute walk. An average cyclist is generally able to travel 3 to 4 times the walking distance, allowing a travel distance of 2 to 3 km in the same 5- to 10-minute time period.

Sidewalks are available on both sides of the streets for all roadways within the study area with the exception of W 38th Avenue which does not have sidewalk on either side. Marked crosswalks are provided at all of the full or pedestrian signalized study intersections (W 37th Avenue/Oak Street, W 41st Avenue/Oak Street, and W 41st Avenue/Willow Street). The roads are on a grid system and are supplemented with lanes, to further increase permeability. According to Walk Score, the site has a Walk Score of 90 and is rated as a "Walker's Paradise". As outlined in the OTC Policy Statement, sidewalk is proposed along 38th Avenue as part of the redevelopment.

As shown in **Exhibit 2.3**, the site is well positioned to access the city's east-west and north-south bikeway network. Local street bikeways are located along Willow Street and W 37th Avenue where people cycling share the roadway with vehicles on relatively quiet neighbourhood streets. A painted bike lane also exists on the south side of W 41st Avenue east of Willow Street. According to Walk Score, the site has a Bike Score of 100 and is rated as a "Biker's Paradise" given that area is described as being "flat as a pancake [with] excellent bike lanes".

As outlined in the OTC Policy Statement, additional bike infrastructure is expected to be constructed including protected bike lanes on both sides of the primary north-south road connecting W 38th Avenue and W 41st Avenue through the site. A shared (with bus lane) bike lane is also provided along the north side of W 41st Avenue. Finally, provision of space within the Oakridge Transit Centre site for public bike share stations is also outlined within the policy.

The key finding is that the site is well positioned to support walking and cycling to accomplish typical daily errands based on existing and future infrastructure.

2.3 Current Relevant Policies & Plans

2.3.1 Oakridge Transit Centre and Adjacent Sites Policy Statement

The Oakridge Transit Centre (OTC) Policy Statement dated October 2015 was established by the City to describe planning principles that will guide future development of the large site related to the mix of uses, density and height, building forms, parks and public spaces, circulation and movement, and community facilities. The Statement highlights several transportation policies as follows:

- Design site to support sustainable transportation modes by prioritizing pedestrians, cyclists, and transit users.
- Employ street design measures to limit traffic speed and discourage short-cutting across the site while accommodating protected bicycle paths (on the primary street) and on-street parking.

- Limit access to underground parking to new or existing laneways.
- Consider enhanced public realm treatment of laneways to improve site permeability and to promote pedestrian and cyclist movement through the site.

2.3.2 Cambie Corridor Plan

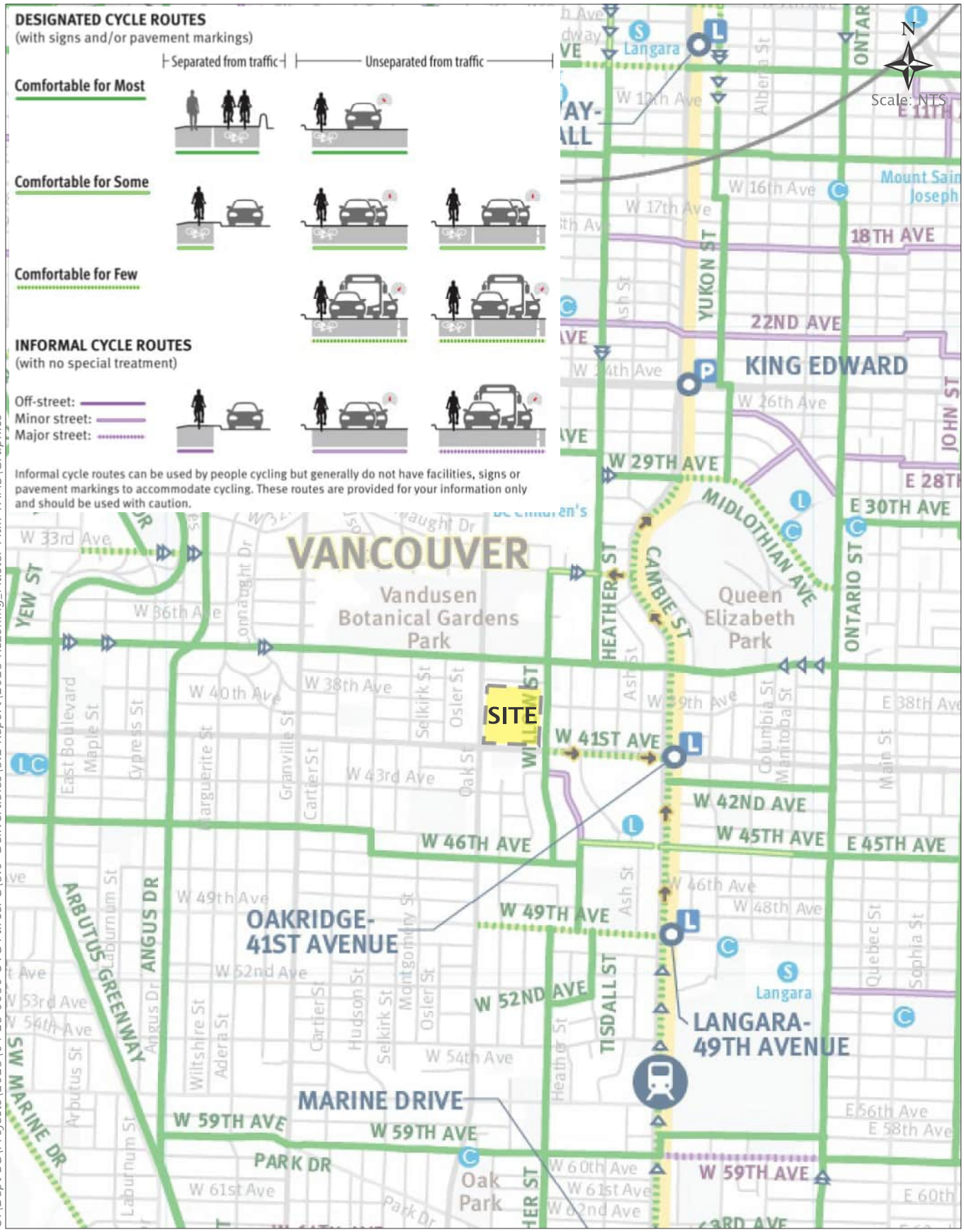
The site is located towards the western boundary of the City of Vancouver's Cambie Corridor study area boundary. While the Cambie Corridor Plan does not provide specific policy and guidance on plots already considered as part of Major Project Sites, it does provide a framework for the broader 41st Avenue corridor up to and including Oak Street. Key considerations from the Plan are as follows.

The site is located within the Oakridge Municipal Town Centre neighbourhood of the Cambie Corridor and is discussed within Section 4.3 of the plan. The following comments set out the plan for the 41st Avenue arterial:

'Along 41st Avenue, new residential and mixed-use buildings will offer opportunities for enhancing the public realm with wide green setbacks and additional landscaping'

Section 8 sets out plans for '*Transportation and Mobility'* along the corridor. Along Oak Street, crossing improvements are planned at regular intervals along the north-south corridor, while '*complete street improvements'* are planned to span the length of 41st Avenue, including improvements to all transportation modes.

Figure 8.2 highlights *'Planned Transportation Improvements'* for the Cambie Corridor. This figure identifies two new *'secondary active links'* associated with the project site; the first would provide a midblock connection through to W 37th Avenue to the north, while the second would connect the site through to W 39th Avenue east of the site.



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Exhibit 2.3

Cycling Facilities

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2.3.3 Transportation 2040 Action Plan (2012)

The Transportation 2040 Action Plan, adopted by Vancouver City Council in October 2012, is a long-term strategic vision for the City of Vancouver that will help guide transportation and land use decisions and public investments for the years ahead.

The Transportation 2040 Plan builds on the Greenest City's transportation goals by stating that its travel mode goal is to "make at least two-thirds (67%) of trips on foot, bike, and transit by 2040". This timeline has since been accelerated by 10 years to 2030 within the City's Climate Emergency Action Plan.

In addition, the Transportation 2040 Action Plan identified a number of policies concerning parking for new development projects. Specifically, the plan indicates that off-street parking requirements should be used to support reduced auto ownership and use. Further, the cost of housing and parking should be separated to increase housing affordability.

2.4 Data Collection

2.4.1 Traffic Data Collection Program

Given the data used in previous TAMS reports are more than five years old, Bunt conducted new data collection for this update in 2025. **Table 2.4** provides a summary of the traffic count data of study intersections. Raw traffic data is included in **Appendix B**.

Table 2.4: Summary of Available and Counted Traffic Data

INTERSECTION	SOURCE	DATE OF COUNT	PEAK HOURS	
			AM	PM
Oak Street & W 37th Avenue	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Willow Street & W 37th Avenue	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Oak Street & W 38th Avenue	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
West Laneway & W 38th Avenue	Bunt	September 25, 2025	8:00-9:00	15:15-16:15
East Laneway & W 38th Avenue	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Willow Street & W 38th Avenue	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Willow Street & W 39th Avenue	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Oak Street & Laneway	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Willow Street & Laneway	Bunt	September 25, 2025	8:00-9:00	15:00-16:00
Oak Street & W 41st Avenue	Bunt	June 10, 2025	8:00-9:00	15:00-16:00
Willow Street & W 41st Avenue	Bunt	June 10, 2025	8:00-9:00	15:00-16:00
OVERALL STUDY AREA PEAK HOUR			8:00-9:00	15:00-16:00

2.4.2 Peak Hour Traffic Volumes

Through traffic volumes were balanced through the adjacent intersections based on the City's intersection counts. The existing balanced peak hour vehicle traffic volumes are illustrated in **Exhibit 2.4** while the existing pedestrian and cycling volumes are shown in **Exhibit 2.5**. **Table 2.5** presents a summary of the two-way peak-hour vehicle movements for the streets in the study area.

Table 2.5: Existing Peak Hour Roadway Link Volumes

ROAD LINK	PEAK LINK VOLUMES (VEH/HR)	
	AM	PM
Oak Street (North of W 41st Avenue)	3066	3406
Willow Street (South of W 38th Avenue)	312	225
W 41st Avenue (East of Oak Street)	1894	1760
W 39th Avenue (East of Willow Street)	185	140
W 38th Avenue (West of Willow Street)	73	71
W 37th Avenue (East of Oak Street)	232	180
W 37th Avenue (West of Oak Street)	371	263

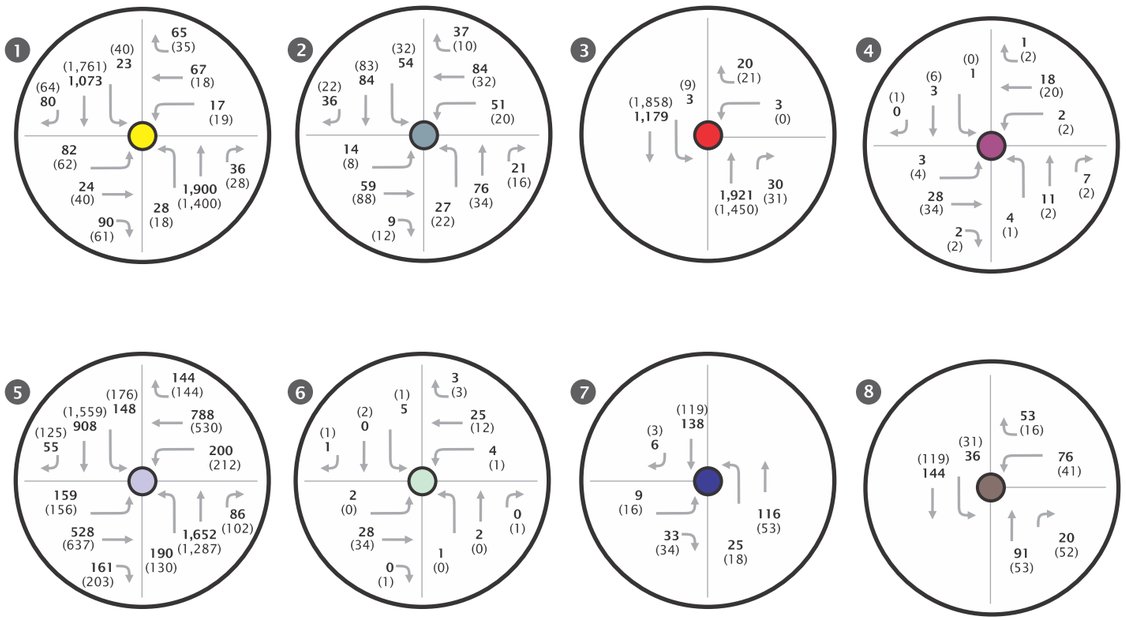
2.5 Existing Operations

2.5.1 Performance Thresholds

The existing operations of study area intersections and access points were assessed using the methods outlined in the Highway Capacity Manual (HCM) 6, using the Synchro 11 analysis software. The traffic operations were assessed using the performance measures of Level of Service (LOS) and volume-to-capacity (V/C) ratio.

The LOS rating is based on average vehicle delay and ranges from "A" to "F" based on the quality of operation at the intersection. LOS "A" represents optimal, minimal delay conditions while a LOS "F" represents an over-capacity condition with considerable congestion and/or delay. Delay is calculated in seconds and is based on the average intersection delay per vehicle.

Table 2.6 below summarizes the LOS thresholds for the six Levels of Service, for both signalized and unsignalized intersections.





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Exhibit 2.4

Existing Peak Hour Vehicle Traffic Volumes

04-23-0050

Oakridge Transit Centre
November 2025

bunt & associates



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Exhibit 2.5

Existing Peak Hour Pedestrian & Cycling Traffic Volumes

Oakridge Transit Centre
04-23-0050 November 2025

bunt & associates

Table 2.6: Intersection Level of Service Thresholds

LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: Highway Capacity Manual

The performance thresholds that were used to trigger consideration of roadway or traffic control improvements to support roadway or traffic control improvements employed in this study are listed below:

Signalized Intersections:

- Overall intersection Level of Service = LOS D or better;
- Overall intersection V/C ratio = 0.85 or less;
- Individual movement Level of Service = LOS E or better; and,
- Individual movement V/C ratio = 0.90 or less.

Unsignalized Intersections and Roundabouts:

- Individual movement Level of Service = LOS E or better, unless the volume is very low in which case LOS F is acceptable.

In interpreting of the analysis results, note that the HCM methodology reports performance differently for various types of intersection traffic control. In this report, the performance reporting convention is as follows:

- For signalized intersections: HCM 6 output for overall LOS as well as individual movement LOS and V/C is reported. 95th Percentile Queues are reported as estimated by Synchro;

- For unsignalized stop controlled intersections: HCM 6 LOS and V/C output is reported just for individual lane; overall performance was translated based on control delay. 95th Percentile Queues are reported based on HCM 6 results, but converted from "vehicles" to "metres" to be consistent with results reported for signalized intersections. It is noted that HCM 6 is unable to produce results for the intersection of Oak Street & W 37th Avenue and Oak Street & Laneway due to the high traffic volumes. These intersections have therefore been reported using HCM 2000 methodology.

- All queues are rounded to the nearest 5 metres.

- For roundabouts: HCM 6 output for overall LOS as well as individual movement LOS, V/C, and 95th percentile queues are reported.

The performance reporting conventions noted above have been consistently applied throughout this document and the detailed outputs are provided in **Appendix C**.

2.5.2 Existing Conditions Analysis Assumptions

Signal Timing

Existing signal timings plans were obtained from the City of Vancouver and used in the Synchro analysis. It is noted that the intersections of Willow Street & W 41st Avenue and Oak Street & W 37th Avenue are pedestrian-activated signals. When the number of pedestrians utilizing the crossing is high such that the signal is activated to stop major approach vehicle traffic nearly each minute the intersection effectively operates as signalized during the peak hours and is model as such in the following analysis. For peak hours with lower pedestrian volumes, the intersection is analyzed as both unsignalized and signalized as the resulting capacity is likely somewhere in between.

Synchro Parameters

The analysis is completed utilizing Synchro defaults for the majority of parameters with a default saturation flow of 1,900 vehicles per hour. Peak hour factors, pedestrian and cyclist volumes, and percentage of heavy vehicles are taken from existing traffic count observations when available.

Sidra Parameters

The analysis is completed utilizing Sidra 9 defaults for most parameters. A peak hour factor of 0.92 are applied. Pedestrian and cyclist volumes and percentage of heavy vehicles are taken from existing traffic count observations.

2.5.3 Existing Operational Analysis Results

Table 2.7 summarizes the operational analysis results for the existing AM and PM peak-hour periods.

Table 2.7: Existing Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Oak Street & W 37th Avenue *(Minor Stop)* HCM 2000	*OVERALL*	-	-	-	-	-	-
	EBL/T/R	F	Err	Err	F	Err	Err
	WBL/T/R	F	Err	Err	F	Err	Err
	NBL/T	A	0.06	<5	A	0.07	<5
	NBT	A	0.61	0	A	0.43	0
	NBT/R	A	0.33	0	A	0.23	0
	SBL/T	A	0.13	5	A	0.11	5
	SBT	A	0.34	0	A	0.55	0
	SBT/R	A	0.22	0	A	0.31	0
Oak Street & W 37th Avenue *(Ped Ctrld Signal)*	*OVERALL*	B	-	-	A	-	-
	EBL/T/R	C	0.47	35	C	0.41	35
	WBL/T/R	C	0.34	30	C	0.18	15
	NBL/T	B	0.68	100	A	0.46	55
	NBT	B	0.71	100	A	0.49	55
	NBT/R	B	0.71	100	A	0.49	55
	SBL/T	A	0.42	45	A	0.61	90
	SBT	A	0.44	45	A	0.64	90
	SBT/R	A	0.44	45	A	0.64	90
West Laneway & W 37th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/R	A	0.02	<5	A	0.01	0
	WBL/T	A	0.001	5	A	0.002	0
East Laneway & W 37th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/R	A	0.01	0	A	0.004	0
	WBL/T	A	0.001	0	A	0.001	0
Willow Street & W 37th Ave *(Roundabout)* SIDRA - HCM 6	*OVERALL*	A	0.17	-	A	0.12	-
	EBL/T/R	A	0.08	5	A	0.10	5
	WBL/T/R	A	0.16	5	A	0.05	<5
	NBL/T/R	A	0.12	5	A	0.07	<5
	SBL/T/R	A	0.17	5	A	0.12	5
Oak Street & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	WBL/R	F	0.25	5	C	0.10	<5
	SBL/T	E	0.03	<5	D	0.06	<5
	SBT	A	-	-	A	-	-
West Laneway & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	A	0.03	<5	A	0.01	0
	EBL/T/R	A	0.002	0	A	0.003	0
	WBL/T/R	A	0.001	0	A	0.001	0
	SBL/T/R	A	0.005	0	A	0.01	0
East Laneway & W 38th Ave	*OVERALL*	-	-	-	-	-	-

(Minor Stop)	NBL/T/R	A	0.004	0	A	0.001	0
	EBL/T/R	A	0.001	0	A	0	0
	WBL/T/R	A	0.003	0	A	0.001	0
	SBL/T/R	A	0.007	0	A	0.01	0
Willow St & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T	A	0.02	<5	A	0.02	<5
	EBL/R	B	0.07	<5	B	0.09	<5
Willow St & W 39th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	WBL/R	B	0.24	5	B	0.10	<5
	SBL/T	A	0.03	<5	A	0.03	<5
Oak St & Laneway *(Minor Stop)* HCM 2000	*OVERALL*	-	-	-	-	-	-
	WBL/R	B	0.01	0	A	0.00	0
	NBT/R	A	0.24	0	A	0.19	0
	SBL/T	A	0.00	0	A	0.00	0
Willow St & Laneway *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	A	0.002	0	A	0.01	0
	EBL/T/R	B	0.02	<5	B	0.01	0
	WBL/T/R	B	0.07	<5	B	0.03	<5
	SBL/T/R	A	0.003	0	A	0.01	0
Oak St & W 41st Ave *(Signalized)*	*OVERALL*	D	-	-	D	-	-
	EBL	D	0.70	70	C	0.52	45
	EBT	D	0.61	90	D	0.74	110
	EBR	D	0.44	15	D	0.62	35
	WBL	C	0.64	60	D	0.74	80
	WBT	D	0.83	135	D	0.55	85
	WBR	D	0.37	15	C	0.27	15
	NBL	C	0.58	45	C	0.69	55
	NBT	D	0.83	210	C	0.71	150
	NBT/R	D	0.83	210	C	0.71	150
	SBL	C	0.73	45	C	0.72	60
	SBT	C	0.47	85	D	0.82	175
	SBT/R	C	0.48	85	D	0.82	175
Willow St & W 41st Ave *(Ped Ctrld Signal)*	*OVERALL*	B	-	-	B	-	-
	EBL/T	B	0.44	40	B	0.55	50
	EBT	B	0.48	40	B	0.60	50
	EBR	A	0.12	5	A	0.16	10
	WBL/T	C	0.78	100	B	0.62	55
	WBT	C	0.84	100	B	0.68	55
	WBR	A	0.04	5	A	0.02	<5
	NBT/L/R	B	0.43	40	B	0.46	40
	SBL/T/R	B	0.47	40	B	0.33	30
W 41st Ave & JCC Site Access *(Signalized)*	*OVERALL*	-	-	-	-	-	-
	NBR	B	0.05	<5	B	0.08	<5

Most intersections within the study area currently operate within the acceptable performance thresholds with overall LOS 'C' or better during the peak hour periods. The following issues have been identified at a few study area intersections:

Oak Street/W 37th Avenue

- The intersection is currently controlled by a pedestrian-activated half signal which cannot be modelled directly in Synchro, therefore capacity results as a minor stop-control intersection and two-phase signalized intersection are reported. While the actual capacity of the intersection is likely between the two, upgrading to a full signal is not recommended as W 37th Avenue is a recommended cycling route and it may encourage drivers to shortcut through the community to avoid W 41st Avenue.

Oak Street/W 38th Avenue

- As part of the enactment conditions previously agreed with the City, the applicant has committed to upgrading this intersection to a full signal operation. However, for the purposes of this analysis, the existing intersection arrangement has been assessed to demonstrate the limited number of vehicles that are likely to be impacted without any signalization upgrades.

- The westbound movement currently experiences significant delay at LOS F during the AM peak hour which is due to the high through traffic volumes along Oak Street that leaves minimal gap opportunities. This delay affects 23 westbound vehicles during the peak.

- The southbound left turn currently experiences significant delay at LOS E during the AM peak hour which is due to the high northbound through traffic volume that leaves minimal gap opportunities. This delay affects three vehicles turning southbound left during the peak hour.

Oak Street/W 41st Avenue

- Although long queues were observed at northbound movements and eastbound movements during the peak hours, all the movements are operating below capacity with an acceptable LOS D or better.

3. FUTURE TRAFFIC CONDITIONS

3.1 Traffic Forecasts

3.1.1 Future Road Network Changes

Background Road Network

The corridor of W 41st Avenue fronting the site is planned for transportation upgrades with the addition of a traffic signal at the intersection of Willow Street & W 41st Avenue, and a full movement intersection at W 41st Avenue & Site/Jewish Community Centre (JCC) Access. The new roadway improvements are assumed to be implemented by full build out of JCC, as part of the requirements in JCC application.

3.1.2 Background Traffic Forecasts

Background traffic is traffic that would be present on the road network if the site did not redevelop.

The historical traffic data was reviewed along main arterial roads (peak hour link volumes at W 41st Avenue and Oak Street) to identify the background growth rate in the immediate area. **Table 3.1** summarized the calculations.

Table 3.1: Growth Rates Review

YEAR	AM PEAK HOUR			PM PEAK HOUR		
	W 41ST AVENUE	OAK STREET	TOTAL	W 41ST AVENUE	OAK STREET	TOTAL
2017 -2018	2,275	3,039	5,314	2,313	2,749	5,062
2025	1,894	3,144	5,038	1,760	3,287	5,047
		ANNUAL GROWTH RATE	-0.70%		ANNUAL GROWTH RATE	-0.04%

Oak Street is increasing over the past seven to eight years and W 41st Avenue is decreasing in volumes, while the blended growth rates are negative. To count for the overall negative background traffic growth during both AM and PM peak hours, an annul growth rate of negative 0.5 percent was identified and applied to future conditions.

In addition to the growth rate, site traffic flows from known developments in the area were included in the background traffic forecast: JCC, Heather Lands and Oakridge Park developments, to create the background traffic as shown in **Exhibit 3.1**.

The JCC development is located directly south of the proposed site. The weekday AM and PM peak hour volumes were sourced directly from the study completed by Bunt in September 2025.

The Heather Lands development is located east of the proposed site. The weekday AM and PM peak hour volumes at Willow Street & W 37th Avenue were sourced directly from the study completed by Bunt in

October 2025. These volumes were then balanced through the remaining intersections based on the distribution of the existing intersection counts.

The Oakridge Park development is located east of the proposed site on the southwest corner of Cambie Street & W 41st Avenue. The weekday PM peak hour volumes at the intersection of Willow Street & W 41st Avenue were sourced from the study completed by Bunt in March 2018. These volumes were then balanced through the remaining intersections based on the distribution of the existing intersection counts. The AM peak hour volumes were generated by factoring the PM trip rates based on the ITE Trip Generation Manual and applying the trip distribution from the Oakridge Study.

The traffic associated with each development site added to the background is included in **Appendix D**.

3.1.3 Site Traffic

Detailed in **Section 1**, this report represents an update to a previous study completed in 2022. The calculation of site-generated vehicle trips has been updated to reflect the latest densities, site access points using the trip rates from the latest version of Institute of Transportation Engineers (ITE) Trip Generation Manual (12th Edition).

Trip Generation

Table 3.2 shows the vehicle trip rates used for the development's trip generation. As mentioned above, the trip rates for the residential and daycare uses are sourced from the ITE Trip Generation Manual. Retail rates were sourced from Bunt's database in local area. Note the trip generation rates was reduced by 60% for the residential rental and social housing uses, as minimal to no parking is provided for these uses.

Table 3.2: Peak Hour Vehicle Trip Rates

LAND USE	UNITS	AM PEAK HOUR			PM PEAK HOUR			SOURCE
		IN	OUT	TRIP RATE	IN	OUT	TRIP RATE	
Residential – Strata (High-rise)	Dwelling Units	11%	89%	0.22	69%	31%	0.19	(1)
Residential – Strata (Mid-rise)	Dwelling Units	15%	85%	0.25	74%	26%	0.25	(2)
Residential – Rental and Social Housing	Dwelling Units	11%	89%	0.088	69%	31%	0.076	(3)
Retail	1000 SF GLA	62%	38%	0.94	48%	52%	3.81	(4)
Daycare	Child	53%	47%	0.79	47%	53%	0.79	(5)

Notes: GFA = gross floor area; GLA = gross leasable area

1 - ITE Trip Generation Manual 12th Edition Land Use Code 222 Multifamily Housing (High-Rise) Dense Multi-Use Urban

2 - ITE Trip Generation Manual 12th Edition Land Use Code 220 Multifamily Housing (Low-Rise) General Urban/Suburban

3 - ITE Trip Generation Manual 12th Edition LUC 222 reduced by 60% to reflect minimal parking provision.

4 – Heather Lands Policy Statement Transportation Assessment, Bunt & Associates, September 2025.

5 - ITE Trip Generation Manual 12th Edition Land Use Code 565 Day Care Centre

Table 3.3 summarizes the anticipated future site generated vehicle trips for the proposed development based on the above rates.

Table 3.3: Estimated Peak Hour Site Vehicle Trips

LAND USE	UNITS	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	2-WAY	IN	OUT	2-WAY
Residential – Strata (High-rise)	1,568 units	38	307	345	204	92	296
Residential – Strata (Mid-rise)	74 units	3	16	19	14	5	19
Residential – Rental and Social Housing	1,174 Units	11	92	103	62	28	90
Retail	52,975 SF GLA	31	19	50	97	105	202
Daycare	69 Children	29	26	55	26	29	55
Total		112	459	571	403	259	662

Trip Distribution & Assignment

Trip distributions were estimated based on existing travel patterns as well as the approved studies completed in area. Vehicular trip distribution is summarized in **Table 3.4**., while the resulting site traffic is presented in **Exhibit 3.2**.

Routing to and from the site was assigned for each individual parcel with each having 1-2 underground parkade entrances as per latest site plan. Network assignment was based on the shortest path to/from the external points of the study network. When more than one route was equally viable then trips were distributed evenly among all possible routes. The right-in/right-out restriction at the N/S Lane & Oak Street led to routing vehicles from the south travelling inbound to the lane but outbound to utilize the signalized access with JCC on W 41st Street.

Table 3.4: Estimated Trip Distribution

ORGIN/DESTINATION	AM PEAK HOUR		PM PEAK HOUR	
	IN (%)	OUT (%)	IN (%)	OUT (%)
To/from the north on Oak Street	20%	20%	20%	20%
To/from the north on Willow Street	5%	5%	5%	5%
To/from the east on W 39th Avenue	15%	15%	15%	15%
To/from the west on W 41st Avenue	25%	25%	25%	25%
To/from the east on W 41st Avenue	15%	15%	15%	15%
To/from the south on Oak Street	15%	15%	15%	15%
To/from the south on Willow Street	5%	5%	5%	5%
TOTAL	100%	100%	100%	100%

3.1.4 Total Traffic

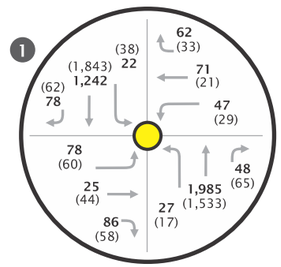
The future total traffic was calculated by adding the site traffic to the background traffic and is illustrated in **Exhibit 3.3** for the Opening Day. The impact of site traffic on the study intersections is presented in **Table 3.5**.

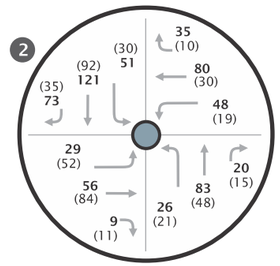
Table 3.5: Net Change in Future Intersection Vehicle Volumes with New Site Trips

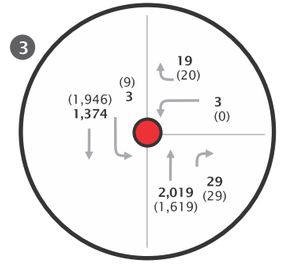
INTERSECTION	AM PEAK HOUR VOLUMES			PM PEAK HOUR VOLUMES		
	BACK-GROUND	SITE	% CHANGE	BACK-GROUND	SITE	% CHANGE
Oak Street & W 37th Avenue	3,769	114	+3%	3,803	132	+3%
West Laneway & W 37th Avenue	283	44	+15%	237	51	+21%
East Laneway & W 37th Avenue	279	44	+16%	237	51	+21%
Willow Street & W 37th Avenue	631	29	+5%	447	33	+7%
Willow Street & W 38th Avenue	363	122	+34%	261	140	+54%
East Laneway & W 38th Avenue	67	210	+311%	53	228	+429%
West Laneway & W 38th Avenue	76	167	+220%	72	141	+196%
Oak Street & W 38th Avenue	3,446	148	+4%	3,623	124	+3%
Willow Street & W 39th Avenue	455	95	+21%	327	108	+33%
Oak Street & Laneway	3,411	119	+3%	3,612	146	+4%
Willow Street & Laneway	427	144	+34%	336	163	+49%
Oak Street & W 41st Avenue	5,939	228	+4%	6,428	265	+4%
W 41st Ave & Site Access	2,847	188	+7%	2,987	207	+7%
Willow St & W 41st Ave	2,864	199	+7%	3,165	231	+7%

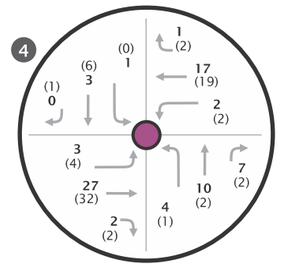
Key findings and insights include:

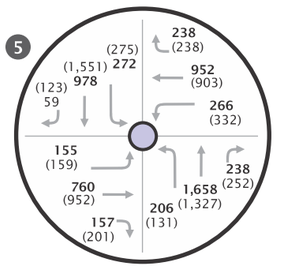
- Traffic volumes at major intersections in the study area are expected to increase less than 7 percent due to the addition of site-generated traffic;
- Traffic volumes at minor intersections in the study area are expected to increase by up to 54 percent due to the addition of site-generated traffic;
- Traffic volumes at intersections with the lane accessing the site are expected to increase by up to 54 precent at minor intersections (except for the laneways).

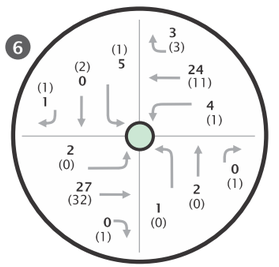


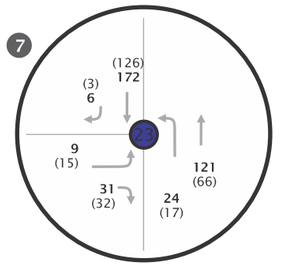


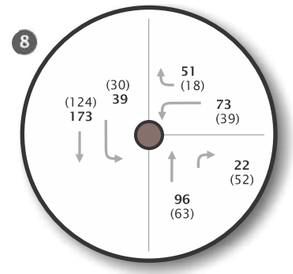


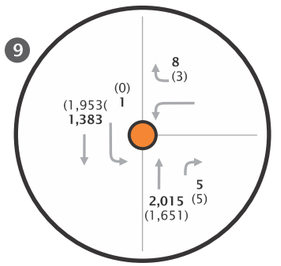


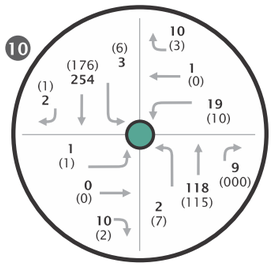


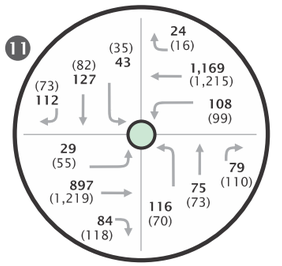


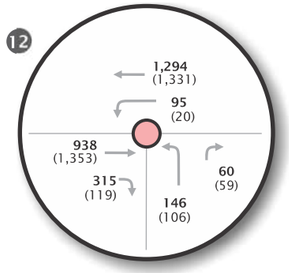














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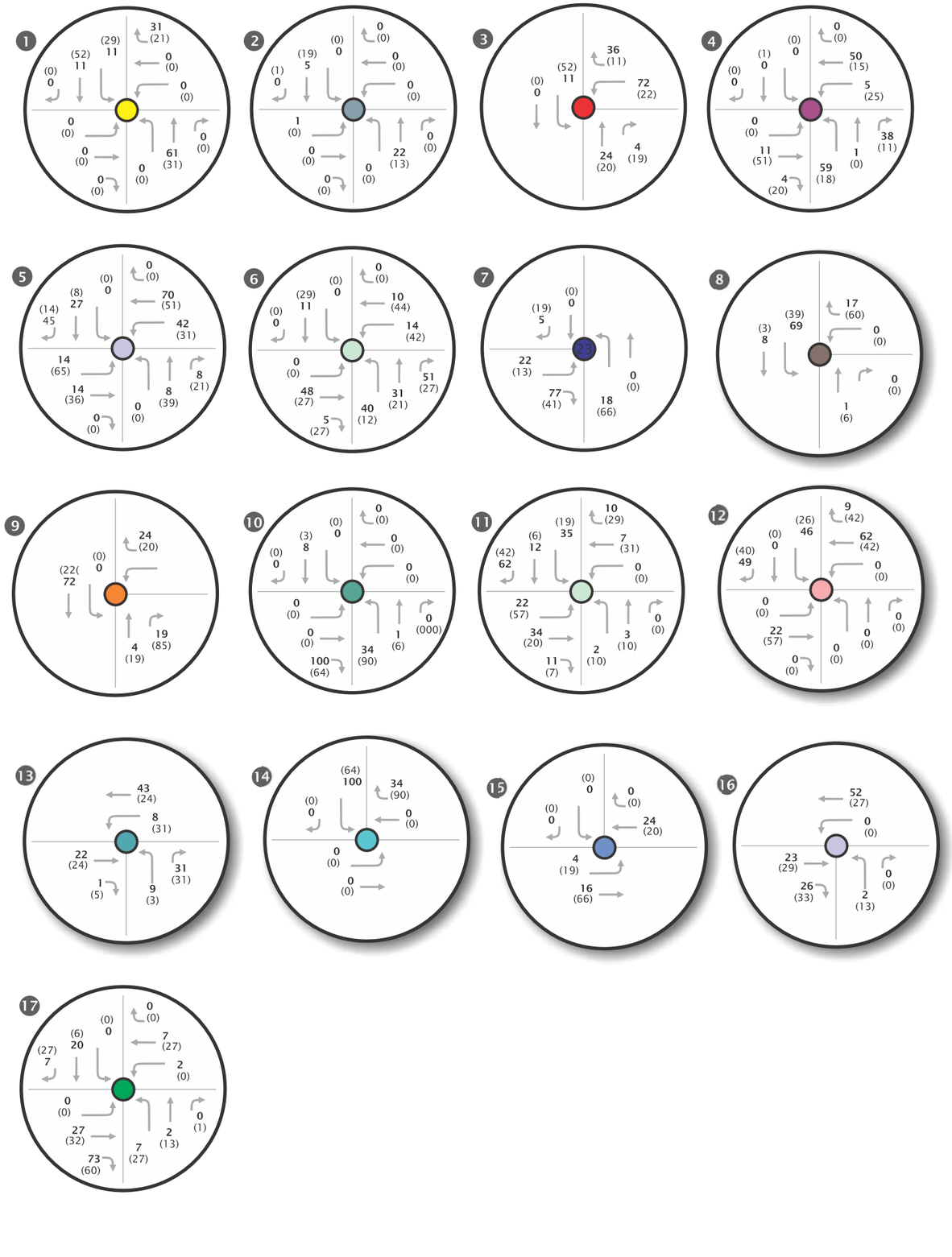
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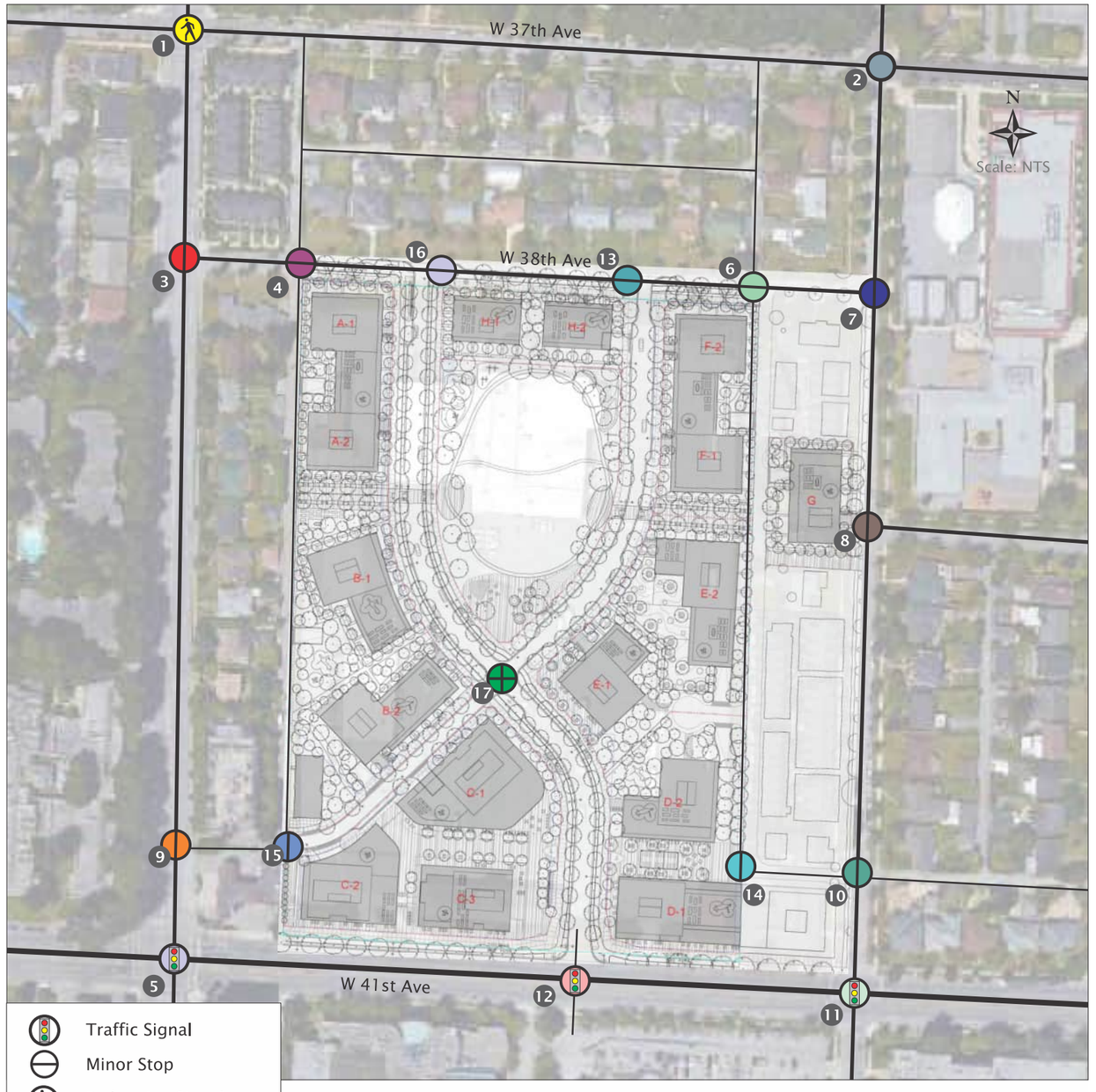
Opening Day Background Traffic Forecasts

04-23-0050

Oakridge Transit Centre
November 2025

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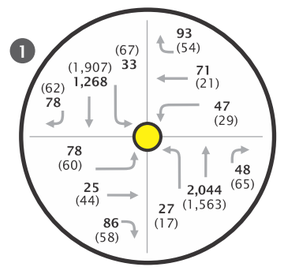
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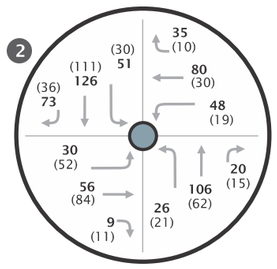
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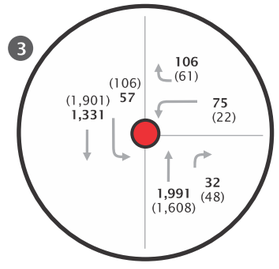
Site Traffic Forecasts

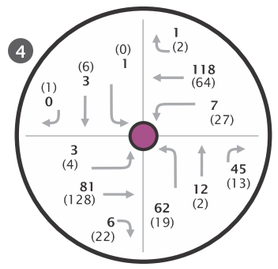
Oakridge Transit Centre
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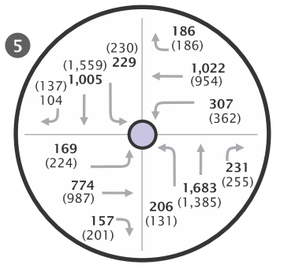
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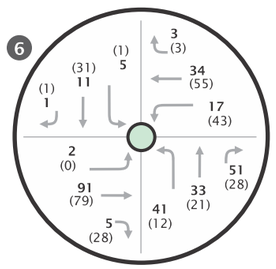


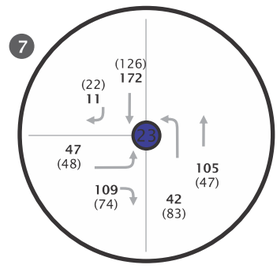


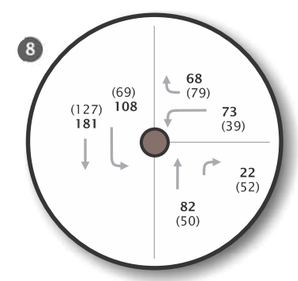


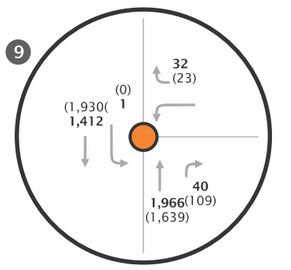


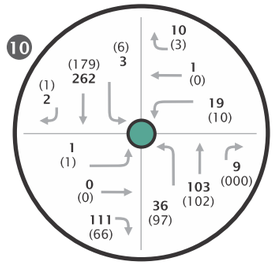


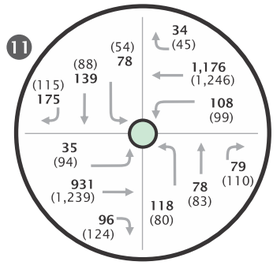


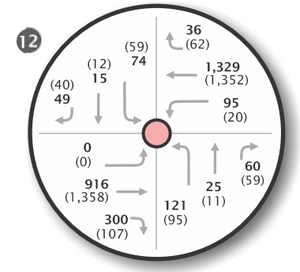


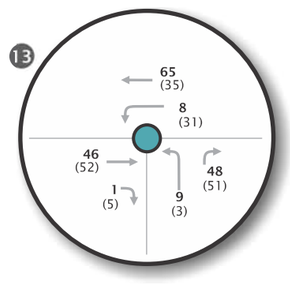


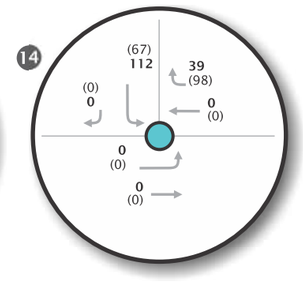


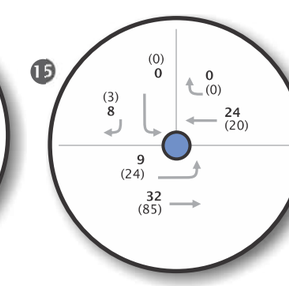


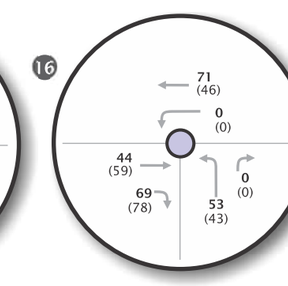


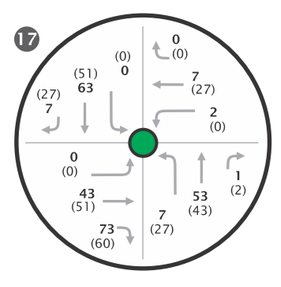


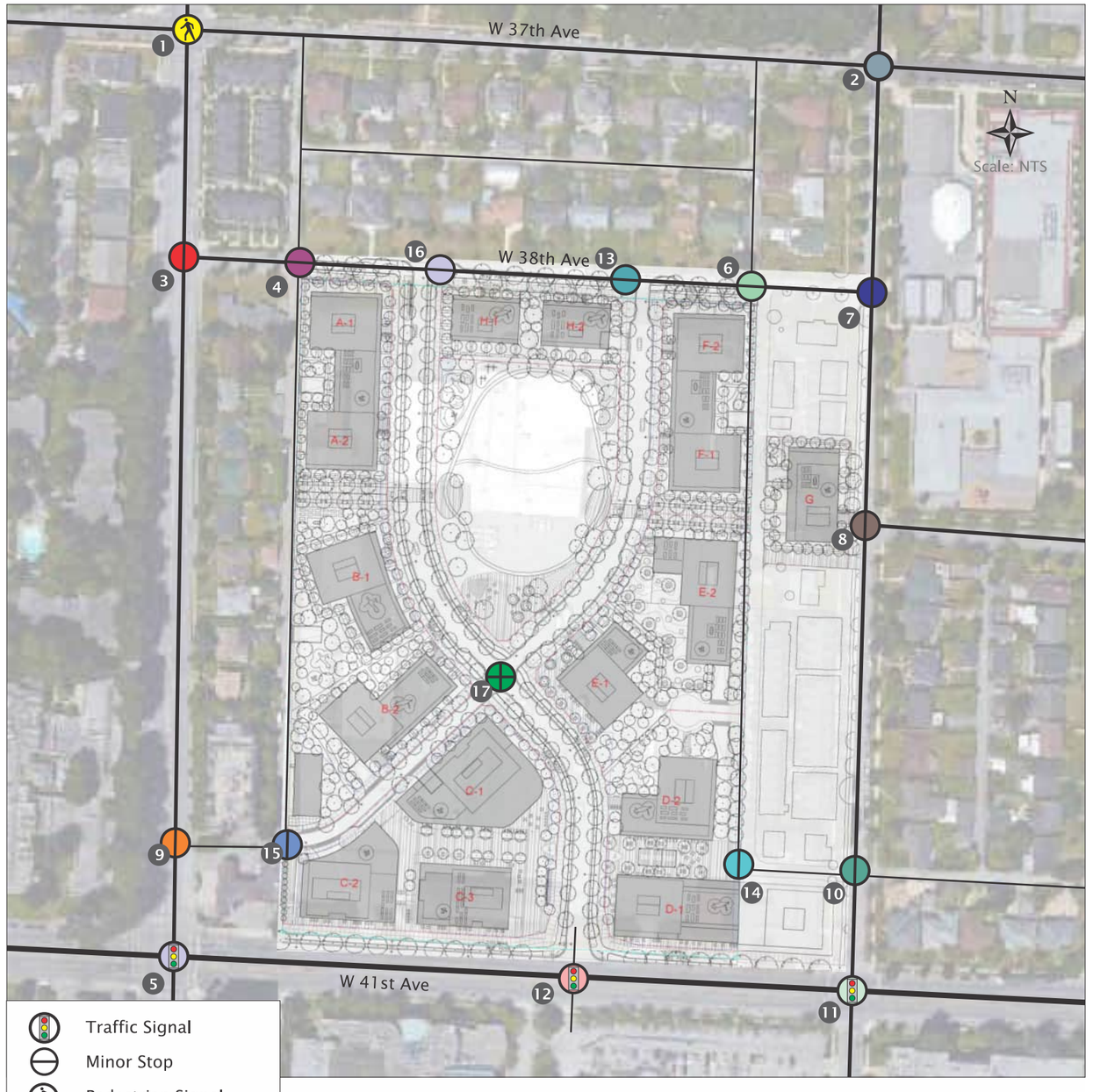












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Exhibit 3.3

Opening Day Total Traffic Forecasts

Oakridge Transit Centre
04-23-0050 November 2025

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3.2 Future Traffic Operations

3.2.1 Future Conditions Analysis Assumptions

In the case of the study network, the corridor of W 41st Avenue fronting the site has been assumed to include the following transportation upgrades:

- A full movement signalized intersection at W 41st Avenue & JCC Access/Site Access. Dedicated EB and WB left turn-lanes will also be provided, in addition to a northern arm connecting with the site.
- A full movement signalized intersection at W 41st Avenue & Willow Street. Dedicated EB and WB left turn-lanes will also be provided.

Both intersections have been modelled as actuated and will be coordinated with the signalized intersection of Oak Street & W 41st Avenue further west.

3.2.2 Future Background Traffic Operations

The results of the traffic operation analysis for AM and PM peak-hour during the future "Opening Day" Background Scenario is summarized in **Table 3.5.** The detailed Synchro reports can be found in **Appendix B.** As previously mentioned, full signals at the intersections of W 41st Avenue & Site/Jewish Community Centre (JCC) Access and W 41st Avenue & Willow Street are assumed to be implemented by full build out of JCC (2035). And the signals along W 41st Avenue are assumed to be coordinated.

Table 3.5: Opening Day Background Vehicle Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Oak Street & W 37th Avenue *(Minor Stop)* HCM 2000	*OVERALL*	-	-	-	-	-	-
	EBL/T/R	F	Err	Err	F	Err	Err
	WBL/T/R	F	Err	Err	F	Err	Err
	NBL/T	A	0.07	<5	A	0.07	<5
	NBT	A	0.63	0	A	0.47	0
	NBT/R	A	0.35	0	A	0.28	0
	SBL/T	A	0.14	5	A	0.13	5
	SBT	A	0.40	0	A	0.57	0
	SBT/R	A	0.25	0	A	0.32	0
Oak Street & W 37th Avenue *(Ped Ctrld Signal)*	*OVERALL*	*B*	-	-	*A*	-	-
	EBL/T/R	C	0.45	40	C	0.41	35
	WBL/T/R	C	0.41	40	C	0.21	15
	NBL/T	B	0.72	110	A	0.52	70
	NBT	B	0.74	110	A	0.54	70
	NBT/R	B	0.74	110	A	0.54	70
	SBL/T	A	0.47	55	A	0.64	45

	SBT	A	0.50	55	A	0.66	45
	SBT/R	A	0.50	55	A	0.67	45
West Laneway & W 37th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/R	A	0.02	<5	A	0.01	0
	WBL/T	A	0.001	0	A	0.002	0
East Laneway & W 37th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/R	A	0.01	0	A	0.004	0
	WBL/T	A	0.002	0	A	0.001	0
Willow Street & W 37th Ave *(Roundabout)* SIDRA - HCM 6	*OVERALL*	*A*	*0.15*	-	*A*	*0.07*	-
	EBL/T/R	A	0.15	5	A	0.07	<5
	WBL/T/R	A	0.15	5	A	0.05	<5
	NBL/T/R	A	0.08	5	A	0.06	<5
	SBL/T/R	A	0.15	5	A	0.05	<5
Oak Street & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	WBL/R	F	0.33	5	D	0.11	<5
	SBL/T	E	0.03	<5	D	0.07	<5
	SBT	A	-	-	A	-	-
West Laneway & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	A	0.03	<5	A	0.01	0
	EBL/T/R	A	0.002	0	A	0.003	0
	WBL/T/R	A	0.001	0	A	0.001	0
	SBL/T/R	A	0.01	0	A	0.01	0
East Laneway & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	A	0.004	0	A	0.001	0
	EBL/T/R	A	0.001	0	A	-	0
	WBL/T/R	A	0.003	0	A	0.001	0
	SBL/T/R	A	0.01	0	A	0.01	0
Willow St & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T	A	0.02	<5	A	0.02	<5
	EBL/R	B	0.07	<5	B	0.08	<5
Willow St & W 39th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	WBL/R	B	0.24	5	B	0.10	<5
	SBL/T	A	0.03	<5	A	0.03	<5
Oak St & Laneway *(Minor Stop)* HCM 2000	*OVERALL*	-	-	-	-	-	-
	WBL/R	B	0.01	0	B	0.00	0
	NBT/R	A	0.25	0	A	0.21	0
	SBL/T	A	0.00	0	A	0.00	0
Willow St & Laneway *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	A	0.002	0	A	0.01	0
	EBL/T/R	B	0.02	<5	B	0.01	0
	WBL/T/R	B	0.07	<5	B	0.03	<5
	SBL/T/R	A	0.003	0	A	0.01	0
Oak St & W 41st Ave	*OVERALL*	*E*	-	-	*E*	-	-

(Signalized)	EBL	E	0.87	70	E	0.85	75
	EBT	E	0.89	145	F	1.09	205
	EBR	D	0.44	20	D	0.60	40
	WBL	F	1.07	130	F	1.46	180
	WBT	E	0.97	185	E	0.91	170
	WBR	D	0.59	25	D	0.57	25
	NBL	C	0.67	60	D	0.69	55
	NBT	F	1.03	250	D	0.90	180
	NBT/R	F	1.04	250	E	0.91	180
	SBL	F	1.00	120	F	0.99	130
	SBT	C	0.48	90	D	0.78	175
	SBT/R	C	0.48	90	D	0.79	175
Willow St & W 41st Ave *(Signalized)*	*OVERALL*	*B*	-	-	*B*	-	-
	EBL	C	0.15	10	C	0.28	15
	EBT	B	0.53	60	B	0.71	85
	EBR	A	0.12	10	A	0.17	10
	WBL	C	0.41	25	D	0.54	35
	WBT	B	0.69	85	B	0.69	85
	WBR	A	0.04	5	A	0.02	<5
	NBT/L/R	C	0.61	65	C	0.53	50
	SBL/T/R	C	0.55	50	B	0.38	35
W 41st Ave & JCC Site Access *(Signalized)*	*OVERALL*	A	-	-	A	-	-
	EBT	A	0.43	40	A	0.60	60
	EBR	A	0.34	10	A	0.13	5
	WBL	A	0.28	15	A	0.07	5
	WBT	A	0.59	60	A	0.59	55
	NBL	C	0.64	25	C	0.59	20
	NBR	B	0.31	5	B	0.37	10

Key findings and insights include:

- Under the background conditions, most intersections within the study area will still be operating with overall LOS 'C' or better during the peak hour periods with the inclusion of the JCC, Heather Lands and Oakridge Park developments on top of the annual growth rates.

- The following issues have been identified at the study area intersections:

Oak Street/W 37th Avenue

- Capacity results are similar to the existing conditions as the approved developments in the area only add a small amount of traffic to the intersection. No improvements are recommended as W 37th Avenue is a designated cycling route and it may encourage drivers to shortcut through the

community to avoid W 41st Avenue. It is noted that as pedestrian and cycling activity increases in the area, actuation of the signal is expected more frequently during the peak hours resulting in the traffic control functioning much like a signalized intersection.

Oak Street/W 38th Avenue

- The southbound left turn movement and westbound movement continues to experience long delays with LOS F during the AM peak hour, due to the anticipated shortcutting traffic from the nearby developments.

Oak Street/W 41st Avenue

- The intersection would be over capacity with the inclusion of the adjacent background developments. This means that with the addition of new traffic generated locally by the JCC, Heather Lands and Oakridge Park sites, more external traffic is expected to either choose different routes, travel outside of peak hour, or switch from automobile use to transit as these options would provide for a more competitive travel time.

3.2.3 Future Total Traffic Operations

The results of the AM and PM peak-hour traffic operation analysis for the "Opening Day" Total Scenario are summarized in **Table 3.6**. The assumptions are consistent with the analysis under future background conditions.

Table 3.6: Opening Day Total Vehicle Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Oak Street & W 37th Avenue *(Minor Stop)* HCM 2000	*OVERALL*	-	-	-	-	-	-
	EBL/T/R	F	Err	Err	F	Err	Err
	WBL/T/R	F	Err	Err	F	Err	Err
	NBL/T	A	0.06	<5	A	0.06	<5
	NBT	A	0.63	0	A	0.47	0
	NBT/R	A	0.35	0	A	0.28	0
	SBL/T	A	0.17	5	A	0.18	5
	SBT	A	0.39	0	A	0.58	0
	SBT/R	A	0.24	0	A	0.33	0
Oak Street & W 37th Avenue *(Ped Ctrld Signal)*	*OVERALL*	B	-	-	A	-	
	EBL/T/R	C	0.45	35	C	0.44	30
	WBL/T/R	C	0.49	45	C	0.29	20
	NBL/T	A	0.69	60	A	0.49	65
	NBT	B	0.71	60	A	0.52	65
	NBT/R	B	0.72	60	A	0.52	65
	SBL/T	A	0.47	30	A	0.66	130
	SBT	A	0.50	30	A	0.67	130

	SBT/R	A	0.50	30	A	0.67	130
West Laneway & W 37th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/R	A	0.02	<5	A	0.01	0
	WBL/T	A	0.001	0	A	0.002	0
East Laneway & W 37th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/R	B	0.06	<5	B	0.04	<5
	WBL/T	A	0.002	0	A	0.001	0
Willow Street & W 37th Ave *(Roundabout)* SIDRA - HCM 6	*OVERALL*	A	0.15	-	A	0.07	-
	EBL/T/R	A	0.15	5	A	0.07	<5
	WBL/T/R	A	0.15	5	A	0.05	<5
	NBL/T/R	A	0.10	5	A	0.07	<5
	SBL/T/R	A	0.15	5	A	0.06	<5
Oak Street & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	WBL/R	F	1.16	40	F	1.00	30
	SBL/T	F	0.61	20	F	0.73	25
	SBT	E	-	-	A	-	-
West Laneway & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	B	0.17	<5	B	0.05	<5
	EBL/T/R	A	0.002	0	A	0.003	0
	WBL/T/R	A	0.005	0	A	0.02	<5
	SBL/T/R	B	0.01	0	B	0.01	0
East Laneway & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	B	0.18	5	B	0.12	<5
	EBL/T/R	A	0.002	0	A	-	0
	WBL/T/R	A	0.01	0	A	0.04	<5
	SBL/T/R	B	0.03	<5	B	0.08	<5
Willow St & W 38th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T	A	0.06	<5	A	0.07	<5
	EBL/R	C	0.50	15	B	0.22	5
Willow St & W 39th Ave *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	WBL/R	C	0.40	10	B	0.19	5
	SBL/T	A	0.11	<5	A	0.06	<5
Oak St & Laneway *(Minor Stop)* HCM 2000	*OVERALL*	-	-	-	-	-	-
	WBL/R	B	0.05	<5	B	0.04	<5
	NBT/R	A	0.28	0	A	0.28	0
	SBL/T	A	0.00	0	A	0.00	0
Willow St & Laneway *(Minor Stop)*	*OVERALL*	-	-	-	-	-	-
	NBL/T/R	A	0.04	<5	A	0.08	<5
	EBL/T/R	B	0.20	5	B	0.10	<5
	WBL/T/R	B	0.07	<5	B	0.03	<5
	SBL/T/R	A	0.002	0	A	0.004	0
Oak St & W 41st Ave *(Signalized)*	*OVERALL*	E	-	-	F	-	-
	EBL	E	0.90	80	F	1.27	125

	EBT	E	0.82	135	F	1.10	225
	EBR	D	0.44	25	D	0.50	40
	WBL	F	1.18	160	F	1.61	200
	WBT	D	0.96	195	E	0.93	195
	WBR	C	0.41	20	D	0.42	25
	NBL	D	0.72	65	D	0.75	60
	NBT	F	1.03	245	D	0.93	205
	NBT/R	F	1.04	245	E	0.93	205
	SBL	E	0.91	90	E	0.91	100
	SBT	C	0.53	95	D	0.83	185
	SBT/R	C	0.53	95	D	0.83	185
Willow St & W 41st Ave *(Signalized)*	*OVERALL*	B	-	-	B	-	-
	EBL	B	0.24	10	D	0.49	65
	EBT	A	0.62	70	B	0.68	75
	EBR	A	0.16	10	B	0.16	15
	WBL	B	0.41	45	D	0.59	40
	WBT	B	0.79	105	B	0.68	90
	WBR	A	0.06	5	A	0.05	5
	NBT/L/R	C	0.68	65	C	0.64	60
	SBL/T/R	C	0.75	85	C	0.58	50
W 41st Ave & JCC Site Access *(Signalized)*	*OVERALL*	A	-	-	A	-	-
	EBL	A	0.00	-	A	0.00	-
	EBT	A	0.41	30	A	0.58	175
	EBR	A	0.30	5	A	0.10	10
	WBL	A	0.30	10	A	0.07	<5
	WBT	A	0.59	85	A	0.57	115
	WBR	A	0.04	<5	A	0.06	5
	NBL	C	0.44	30	C	0.39	25
	NBT/R	C	0.30	15	C	0.31	15
	SBL	C	0.29	20	C	0.26	15
	SBT/R	C	0.23	15	C	0.23	10
Central Road & Central Lane (All Way Stop)	*OVERALL*	*A*	-	-	*A*	-	-
	NBL/T/R	A	0.08	<5	A	0.10	<5
	EBL/T/R	A	0.14	5	A	0.13	5
	WBL/T/R	A	0.01	0	A	0.04	<5
	SBL/T/R	A	0.09	<5	A	0.10	<5

Key insights and findings when comparing the 2035 Total conditions with 2035 Background conditions are as follows:

Oak Street / W 41st Avenue

- Similar to the background conditions, this intersection is expected to continue operating over capacity with site traffic under 2035 total conditions.
- The V/C values are anticipated to increase in both peak hours, and the reported overall V/C are over 1.0. The WB movements continue to fail during both AM and PM peak hours. The LOS rating reported for the EBL movement changes from E to F in the PM peak hour, while the SBL movement would operate with higher V/C ratio.

Willow & W 41st Avenue

- The intersection performs acceptably with a full-movement signal in place.

W 41st Avenue & Site / JCC Access

- As expected, the concentration of site-generated traffic at the site access with W 41st Avenue (with planned signalization upgrades) would result in increased LOS ratings and V/C values. However, all the movements are still expected to operate within acceptable performance thresholds.

W 38th Avenue / Oak Street

- The southbound left turn movement and westbound movement continues to experience delays with LOS F during the AM peak hour when analyzed as stop-controlled intersection. A queueing analysis was also conduced using SimTraffic to count for the impact of the upstream signal. The results show the 95th percentile queue at westbound is expected to be 40m and 30m during AM and PM peak hour, respectively, which are not expected to block the downstream driveway.

- Assuming full signal, the queueing issue will be mitigated.

- Synchro analysis was completed to confirm the AM peak hour (worse-case) with a pre-timed cycle length of 80 seconds. The WBL delay improved to a LOS C with all other operations at LOS A. However, no improvements are recommended due to the intersection spacing to W 37th Avenue. As previously mentioned, a signal could contribute to drawing traffic away from W 41st Avenue and result in potential shortcutting through the neighbourhood.

Central Road / Central Lane

- All the movements are expected to operate well with a LOS of A during both peak hours, with a all-way stop control.

3.2.4 Mitigation at Oak Street & W 41st Avenue

To explore potential solutions for operational issues that already existed due to other planned developments in the area—and that are expected to persist under future conditions—and dual WBL turn lanes and associated signal timing changes at the intersection of Oak Street & W 41st Avenue were tested to increase the left-turn movement capacity. Note based on the recent correspondence with the Client, Mayfair West masterplan is not able to influence the modification to include WBL's as the project is not

adjacent to this intersection. If desired in the future, it will need to be provided from redevelopment of the gas station and office building on SE corner of the intersection.

The mitigation is summarized as follows:

- The splits for the signalized intersection of W 41st Avenue & Oak Street were optimized where necessary.
- Dual WBL turn lanes were implemented along with necessary signal phasing changes.

With this mitigation implemented, **Table 3.7** summarizes the results that exceed the performance thresholds for 2035 Total traffic operations analysis at the study intersections.

Table 3.7: Opening Day Total Vehicle Operations – Mitigation

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Oak St & W 41st Ave *(Signalized)*	*Overall*	*E*	-	-	*E*	-	-
	EBL	F	0.97	80	E	0.91	100
	EBT	E	0.86	135	F	1.01	205
	EBR	D	0.45	25	D	0.46	55
	WBL	E	0.90	70	F	0.99	90
	WBT	D	1.00	195	D	0.95	190
	WBR	C	0.42	20	C	0.43	25
	NBL	C	0.65	50	D	0.78	55
	NBT	E	0.98	235	E	0.99	215
	NBT/R	E	0.98	235	E	0.99	215
	SBL	F	0.97	105	F	1.02	110
	SBT	C	0.54	115	D	0.90	200
	SBT/R	C	0.54	115	E	0.90	200

Compared to the previous assessment of the Total conditions, the key insights and findings relating to this 'Mitigation' scenario are as follows:

- While the Oak Street & W 41st Avenue operations continue to exceed acceptable performance thresholds overall, the mitigation results in improved operations on WBL movements during both peak hours.
- With the mitigation, all other movements would generally operate within capacity during both peak hours, and the overall LOS rating reduce from F to E in the PM peak hour.

3.2.5 Summary of Traffic Impacts & Recommended Mitigations

With the addition of traffic volumes from nearby developments (Background 2035), the operation of W 41st Avenue & Oak Street would worsen when compared with existing conditions.

For the assessment of the 2035 future conditions, planned upgrades were included as part of the redevelopment of JCC including the signalization of the W 41st Avenue intersections with the JCC (Primary) Access, and a full signal upgrade at Willow Street & W 41st Avenue. Dedicated EB and WB left turn-lanes will also be provided.

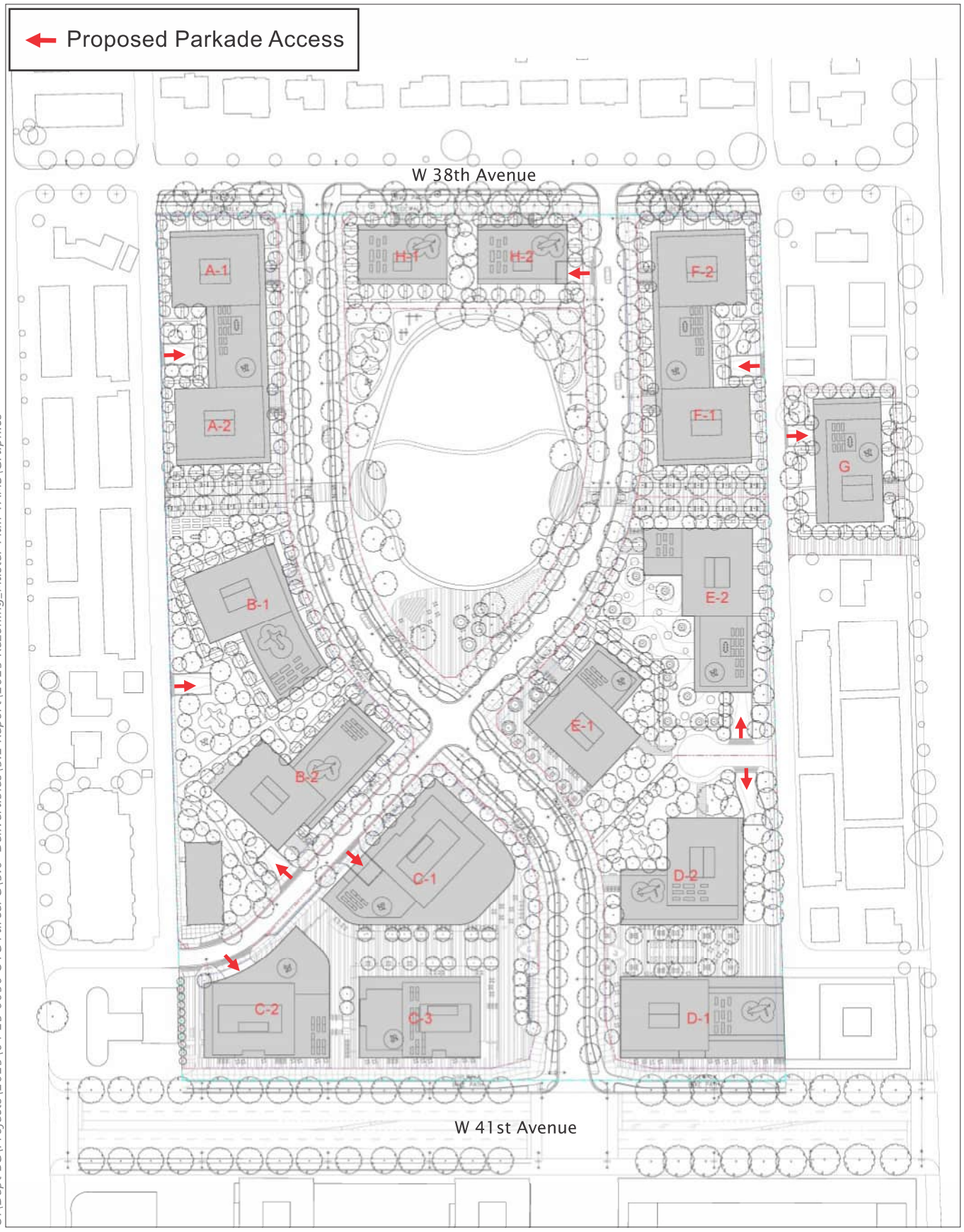
The Oak Street & W 41st Avenue intersection is expected to operate above theoretical capacity in the future with development traffic in the area.

Signal timing optimizations and dual WBL turn lanes were tested at Oak Street & W 41st Avenue which result in operation improvements on WBL movement during PM peak hour, and improved operations on all movements during both peak hours with V/C ratios close to or below 1. However, as the goal is to reduce auto trips and increase active trips, and adding another WBL requires widening of the intersection and increasing pedestrian crossing distance, which is not applicable for urban, transit oriented, neighbourhood. Bunt recommends the City to monitor the intersection operations to understand the travel pattern trend and consider further mitigations only when necessary.

4. SITE PLAN REVIEW

4.1 Site Access Design

It is proposed that each parcel will have a separate underground parkade shared among the buildings on each parcel. Each parkade will have parking restricted to within individual parcels and will not be positioned in the dedicated road allowance. The access to each parkade is proposed from one of the internal / local roadways. This proposed internal street network is shown in **Exhibit 4.1**.



O:\Dept BC\Projects\2023\04-23-0050 OTC Parcel C\5.0 Deliverables\5.2 Report\2025 Rezoning_Master Plan TAMS\Graphics

Exhibit 4.1

Proposed Internal Street Network

Oakridge Transit Centre
04-23-0050 November 2025

bunt & associates

4.2 Bylaw Requirements

The City of Vancouver's Parking Bylaw includes minimum off-street parking for different land use types. This section reviews these minimum requirements and compares them to the planned vehicle and bicycle parking supplies.

The Parking Bylaw was recently amended to *eliminate* minimum vehicle parking requirements for all land uses across the City, effective June 30, 2024, however minimum visitor and accessible parking spaces must still be provided.

4.2.1 Vehicle Parking

Visitor Parking

Based on Section 4.1.3(a) of the City's Parking Bylaw, the minimum requirement for residential visitor parking spaces is:

- **Dwelling uses, including live-work use**, a minimum of 0.05 spaces and a maximum of 0.1 spaces per dwelling unit.

Accessible Parking

Section 4.1.4 of the City's Parking Bylaw refers to a minimum requirement for accessible parking spaces:

- **Multiple dwelling or live-work use**, there must be at least one accessible parking space for each building that contains at least seven residential units and an additional 0.034 space for each additional dwelling unit; and
- **Non-residential uses**, there must be at least one accessible parking space for each building that contains at least 500 m^2 of gross floor area and an additional 0.4 parking spaces for each 1000 m^2 of gross floor area.

Vehicle Parking Supply

The development's proposed vehicle parking supply is summarized in **Table 4.1**. Note this table does not include passenger loading spaces, which are discussed in the following section. The project is planning to provide additional parking to meet expected demands.

Table 4.1: Off-Street Vehicle Parking Supply by Parking Space Type

LAND USE	TYPE	DENSITY	BYLAW SUPPLY REQUIREMENT
Residential	Residents	2,816 units	0
	Visitor	2,816 units	141
	Accessible	2,816 units	22
Retail	Regular	4,922 sq.m.	0
	Accessible		3
Child Care	Accessible	790 sq.m.	1
		ACCESSIBLE TOTAL	167

4.2.2 Bicycle Parking

Well managed, secure, accessible, and covered bicycle parking will be provided as part of the development plan. **Table 4.2** summarizes the development's Class A (long-term) and Class B (short-term) bicycle parking requirements.

Table 4.2: Off-Street Bicycle Parking Supply Requirement & Provision

LAND USE	DENSITY	BYLAW SUPPLY REQUIREMENT	
		CLASS A	CLASS B
Residential*	0 (Units < 65 m2)	7.040	33
	2,816 (65< Units< 105 m2)		
	0 (Units> 105 m2)		
	2,816 All Units		
Retail	4,922 sq.m.	14	16
Child Care	12 staff	1	-
	69 children	-	12
	TOTAL	7,055	61

*: note the size breakdown is still being developed. An average of 85 sq.m. was used for all units for bike space calculation purposes.

Detailed provision is still under development at this point. A total of 7,055 Class A Bicycle spaces and 61 Class B Bicycle spaces is required for the development. All long-term bicycle parking (Class A) will be installed indoors within convenient distance of the end-of-trip facilities, where applicable. This indoor location will ensure enhanced security and cover from weather.

4.2.3 Passenger Loading

The required passenger loading spaces are summarized in **Table 4.3**. Only Class A passenger loading spaces are required for this development, as there is no Class B or Class C requirement for any of the proposed land uses.

Table 4.3: Class A Passenger Loading Supply Requirement & Provision

LAND USE	DENSITY	REQUIRED
Residential	2,816 units	19
Retail	4,922 sq.m.	1
Childcare	69 children	9
	TOTAL	29

A total of 29 Class A passenger loading spaces is required for this development. Detailed provision is still under development at this point.

4.2.4 Service Loading

The City of Vancouver's Parking Bylaw also includes minimum requirements for off-street goods and services. **Table 4.4** presents the off-street loading rates for the proposed land uses, while **Table 4.5** compares the minimum requirement.

Table 4.4: Off-Street Loading Supply Rates

LAND USE	CLASS A	CLASS B	CLASS C
Residential	1 space for 50-299 units, then 1 space for any portion of each additional 200 units	1 space for 100 to 299 dwelling units; a minimum of 1 additional space for 300 to 499 dwelling units; and at least 1 additional space for any portion of each additional 200 dwelling units.	None
Retail	None	1 space for the first 2,325 square metres of gross floor area plus 1 space for any portion of the next 2,325 square metres.	At least 1 space for 1 900 square metres to 5 000 square metres of gross floor area
Childcare	-	-	-

Table 4.5: Loading Supply Requirement & Provision

LAND USE	DENSITY	REQUIRED		
		CLASS A	CLASS B	CLASS C
Residential	2,816 units	14	14	0
Retail	4,922 sq.m.	0	3	1
TOTAL		14	17	1

A total of 14 Class A spaces, 17 Class B spaces and one Class C loading spaces are required for this development. Detailed provision and locations are still under development at this point.

5. TRANSPORTATION DEMAND MANAGEMENT PLAN

Transportation Demand Management (TDM) is defined as the "application of strategies and policies to reduce travel demand (specifically that of single-occupancy private vehicles), or to redistribute this demand in space or in time"[1]. A successful TDM program can influence travel behaviour away from Single Occupant Vehicle (SOV) travel during peak periods towards more sustainable modes such as High Occupancy Vehicle (HOV) travel, transit, cycling or walking. The responsibility for implementation of TDM measures can range across many groups, including regional and municipal governments, transit agencies, private developers, residents/resident associations or employers.

The proposed development is inside of transit-oriented area and rezoned under the Rezoning Policy for Sustainable Large Developments, where the submission of a TDM Plan is mandatory. The developer is planning to provide TDM Plan C: Shared Mobility Package but may vary for each development phase which will be reviewed individually at each development permit stage.

TDM Plan C Shared Mobility Package requires a combination of car share program, bike share, and transit passes. The requirements for this package were calculated based on the number of dwelling units and the GFA of retail uses in the site, as summarized in **Table 5.1**.

It is anticipated that the TDM Plan for the site will be further refined as the project progresses to the next phase of the project approval process.

Table 5.1: TDM Plan C Requirements

LAND USE	UNITS / GFA	TDM PLAN B BIKE PARKING REUQIRMENTS (SPACES)		
		CAR SHARE PROGRAM	MOBI ALL ACCESS PASS	ZONE 1 TRANSIT MONTHLY PASS
COMMITMENT		3 YEARS	3 YEARS	1 YEAR
Residential	2,816 units	70 vehicles & spaces	2,816	2,816
Retail	4,922 sq.m.	1 vehicle & space	51	51
Childcare	790 sq.m.			
TOTAL		71	2,867	2,867

[1] http://ops.fhwa.dot.gov/tdm/index.htm FHWA Travel Demand Management home page

6. CONCLUSIONS & RECOMMENDATIONS

1. The 13.8-acre Oakridge Transit Centre site located at 949 W 41st Avenue (at Oak Street) is planned to be redeveloped into a mixed-use site that is primarily residential with retail frontage on 41st Avenue and a daycare located at Parcel E.

2. Bunt prepared an earlier TAMS report in support of the Oakridge Transit Centre rezoning application submitted in July 2019 and March 2022. Major site plan layout and proposed density changed since then. To support the rezoning submission, Bunt has prepared this updated TAMS to reflect the latest site statistics and new policies as per City of Vancouver guidelines.

3. The site will consist of 2,816 residential units (1,642 strata units, 1,001 rental units, and 173 social housing units), 4.922 sqm of commercial retail uses, and a daycare with 69 children.

4. The site is well served by public transit with R4 RapidBus service along 41st Avenue, supplemented by other bus services on the FTN operating along Oak Street and W 41st Avenue plus the sites' proximity the Oakridge-41st Avenue Skytrain Station (12-minute walk). The site is located in a walkable neighbourhood with various destinations within a short walk. It is well positioned to access the city's east-west and north-south bikeway network with local street bikeways located along Willow Street and W 37th Avenue.

5. The intersections of W 37th Avenue and W 38th Avenue at Oak Street are experiencing longer delays due to the heavy through traffic along Oak Street, which is common for the traffic entering from minor streets to major roads. The remaining study intersections within the study area currently operate well with LOS 'D' or better during the peak hour periods.

6. Site traffic flows from known developments (JCC, Heather Lands and Oakridge Park) in the area were included in the background traffic forecast. An annul growth rate of negative 0.5% was applied in the analysis based on a review of historical traffic data in the study area.

7. The site is expected to generate about 571 vehicle trips (= 112 entering + 459 exiting) during the weekday AM peak hour and 662 vehicle trips (= 403 entering + 259 exiting) during the weekday PM peak hour. This equates to about 11 vehicles per minute at peak times, on average.

8. Access to the site includes a new signalized all-turns intersection on W 41st Avenue shared with JCC, two all-turn intersections on W 38th Avenue and laneway access from Oak Street, Willow Street and W 38th Avenue.

9. Operations at the four study area intersections that are expected to be above acceptable capacity thresholds:

    - The Oak Street & W 37th Avenue intersection is currently controlled by a pedestrian-activated half signal which cannot be modelled directly in Synchro; therefore, capacity results as a minor stop-

control intersection (LOS F) and two-phase signalized intersection (LOS C) are reported. Upgrading to a full signal is not recommended as W 37th Avenue is a designated cycling route and it may encourage drivers to shortcut through the community to avoid W 41st Avenue.

- At the intersection of Oak Street & 38th Avenue, the southbound left turn movement and westbound movement will continue to experience long delays with LOS F during the AM peak hour, due to the anticipated shortcutting traffic from the nearby developments. A queueing analysis was also conduced using SimTraffic to count for the impact of the upstream signal. The results show that the 95th percentile queue at westbound is expected to be 40m and 30m during AM and PM peak hour, respectively, which are not expected to block the downstream driveway.

- At the intersection of Oak Street & 38th Avenue, no improvements are recommended due to the intersection spacing to W 37th Avenue as signal could contribute to drawing traffic away from W 41st Avenue and result in potential shortcutting through the neighbourhood.

- The Oak Street & W 41st Avenue intersection will be at capacity in the future horizon year with the development in place. This means that with the addition of new traffic generated locally by Oakridge Transit Centre, JCC, Heather Lands and Oakridge Park sites, more external traffic would need to either choose different routes, travel outside peak hour, or switch from automobile use as these options would provide for a more competitive travel time.

- The internal intersection, Central Road & Central Lane is expected to operate well with a LOS of A with all-way stop control.

- A mitigation scenario in the form of signal timing optimizations, plus dual WBL turn lanes were tested at W 41st Avenue & Oak Street to increase capacity for left-turn movement. While the several movements of this intersection continue to exceed acceptable performance thresholds during PM peak hour, the mitigation results in improved operations on all movements with V/C ratios close to or below 1 during both peak hours.

- As the goal is to reduce auto trips and increase active trips, and adding another WBL requires widening of the intersection and increasing pedestrian crossing distance, which is not applicable for urban, transit oriented, neighbourhood. Bunt recommends the City to monitor the intersection operations to understand the travel pattern trend and consider further mitigations only when necessary.

10. It is proposed that each parcel will have a separate underground parkade shared among the buildings on each parcel. Each parkade will have parking restricted to within individual parcels and will not be positioned in the dedicated road allowance. The access to each parkade is proposed from one of the internal / local roadways.

11. A total of 26 of accessible parking spaces and 141 residential visitor spaces are required for this development. A total of 2,551 parking spaces will be provided at three underground parking levels,

which is expected to meet the minimum requirements. Detailed allocation is still being refined at this point.

12. A total of 7,055 Class A Bicycle spaces and 61 Class B Bicycle spaces is required for the development. All long-term bicycle parking (Class A) will be installed indoors within convenient distance of the end-of-trip facilities, where applicable. This indoor location will ensure enhanced security and cover from weather.

13. A total of 29 Class A passenger loading spaces is required for this development.

14. A total of 14 Class A spaces, 17 Class B spaces and one Class C loading spaces are required for this development.

15. The proposed development is inside of transit-oriented area and rezoned under the Rezoning Policy for Sustainable Large Developments, where the submission of a TDM Plan is mandatory. The developer is planning to provide TDM Plan C: Shared Mobility Package. TDM Plan C Shared Mobility Package requires a combination of car share program and transit passes. It is anticipated that the TDM Plan for the site will be further refined as the project progresses to the next phase of the project approval process.

No further recommendations are proposed to support the proposed development.

APPENDIX A

Terms of Reference

MEMO

DATE: May 9, 2019
PROJECT NO: 04-18-0448
PROJECT: Oakridge Transit Centre
SUBJECT: Terms of Reference for Transportation Assessment & Management Study (TAMS)

TO: John Turecki, P.Eng.
City of Vancouver Engineering

PREPARED BY: Lindsay de Leeuw, P.Eng.
REVIEWED BY: Peter Joyce, P.Eng.

1. INTRODUCTION

Modern Green Canada is planning to redevelop the 13.8 acre Oakridge Trans Centre (OTC) site bounded by W 38th Avenue to the north, Willow Street to the east, W 41st Avenue to the south, and an existing laneway to the west. The proposed site plan has a target FSR of 2.3 and a gross building area of approximately 1.5M square feet. Land use on site will be primarily residential (approximately 995 market housing, 140 moderate-income rental housing, and 285 social housing) with retail frontage on 41st Avenue and a daycare along W 38th Avenue.

Our proposed study scope has been developed based on similar scopes agreed to for developments in the neighbouring area. This scope is presented in the following sections.

2. SCOPE OF WORK

2.1 Existing Conditions

The traffic study will review the following existing conditions:

a. Existing multi-modal transportation network
b. Current relevant policies and plans
c. Assemble data collected in 2014 and 2017 for the following study intersections:
   i. Oak Street & W 41st Avenue (November 2017);
   ii. Oak Street & Laneway (November 2014);
   iii. Oak Street & W 38th Avenue (November 2014);
   iv. Oak Street & W 37th Avenue ~~(November 2014)~~ (March 2018);

v. West Laneway & W 38th Avenue (November 2014);
vi. West Laneway & W 37th Avenue (November 2014);
vii. Willow Street & W 39th Avenue (November 2014);
viii. Willow Street & Laneway (November 2014);
ix. Willow Street & W 41st Avenue (November 2017);
x. Jewish Community Centre Entrance & W 41st Avenue (July 2017);

d. Obtain traffic signal timing plans for the existing signalized intersection of Oak Street & W 41st Avenue and Willow Street & W 41st Avenue;
e. Review existing traffic operations at the study intersections listed above

The study intersections will be evaluated using the lastest version of Trafficware Synchro /SimTraffic software for the Weekday AM and PM peak-hour periods, consistent with methodologies outlined in the latest version of Highway Capacity Manual, as appropriate.

2.2 FUTURE TRAFFIC CONDITIONS

The future traffic conditions at the above study intersections as well as the site accesses will be evaluated for the Opening Day conditions. ~~We propose using the existing traffic volume conditions as a basis for developing the Opening Day background traffic by applying a background traffic growth rate of 1% growth per annum on through movement traffic on W 41st Street and Oak Street.~~ Based on previous work in the area (Jewish Community Centre TIA and Oakridge Redevelopment), a ***negative*** growth rate of 1% is recommended for the through movement traffic on W 41st Street and Oak Street due to area densification and increased transit.

In addition, it is proposed that the site traffic for nearby developments that Bunt has assessed will also be included as part of the background traffic. This includes:

- Oakridge Centre;
- Jewish Community Centre; and
- Heather Lands.

2.3 ACCESS, PARKING AND LOADING/SERVICING

The traffic study will address the following design elements:

- Identify a preferred transportation access strategy;
- Confirm bylaw parking and loading requirements.

2.4 TDM PLAN

- Complete TDM Worksheet as per City's Parking By-law requirements;

- Develop TDM measures to meet the appropriate points required based on the City's Parking bylaw.

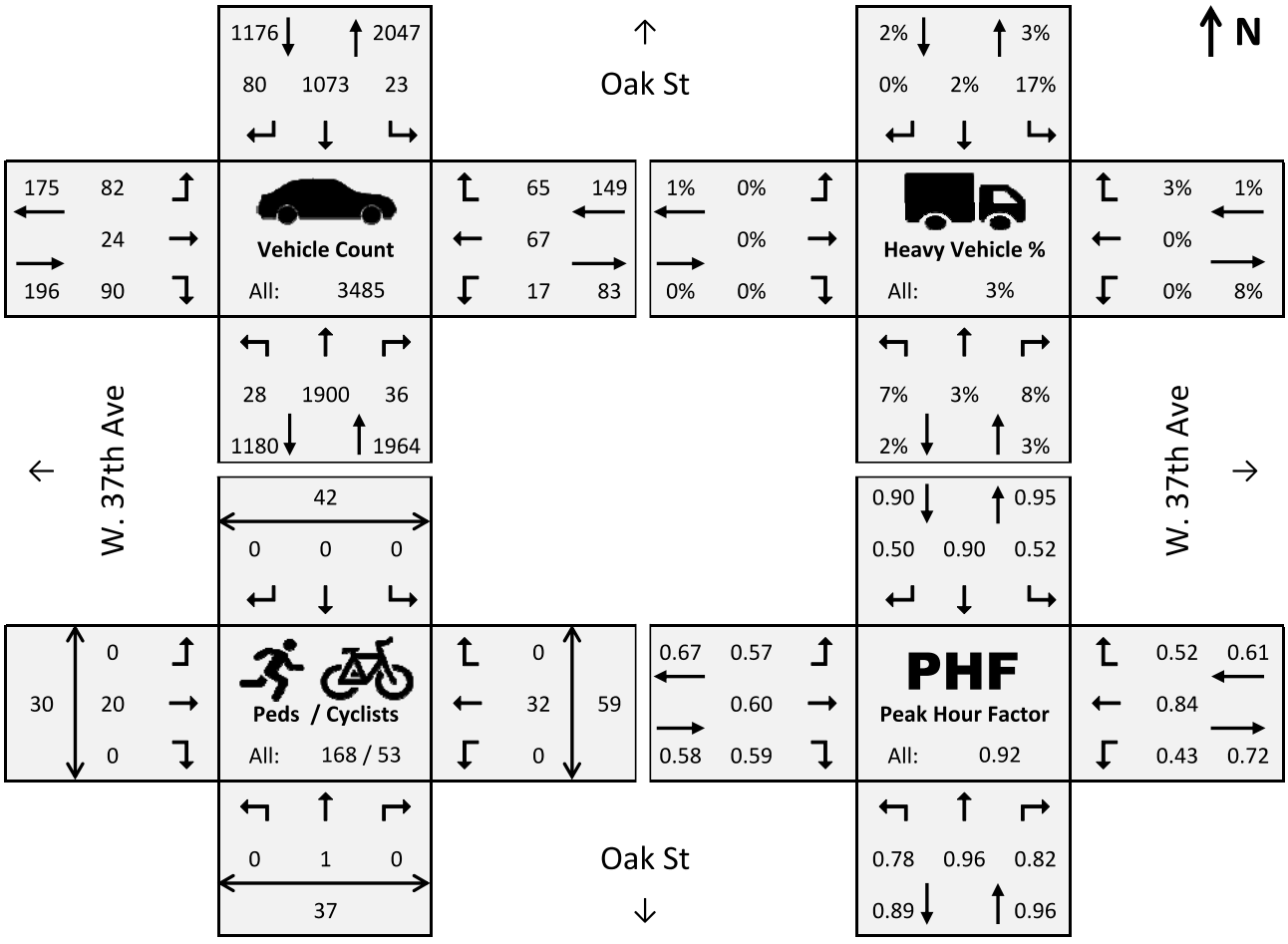
APPENDIX B

Traffic Data

Oak St @ W. 37th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

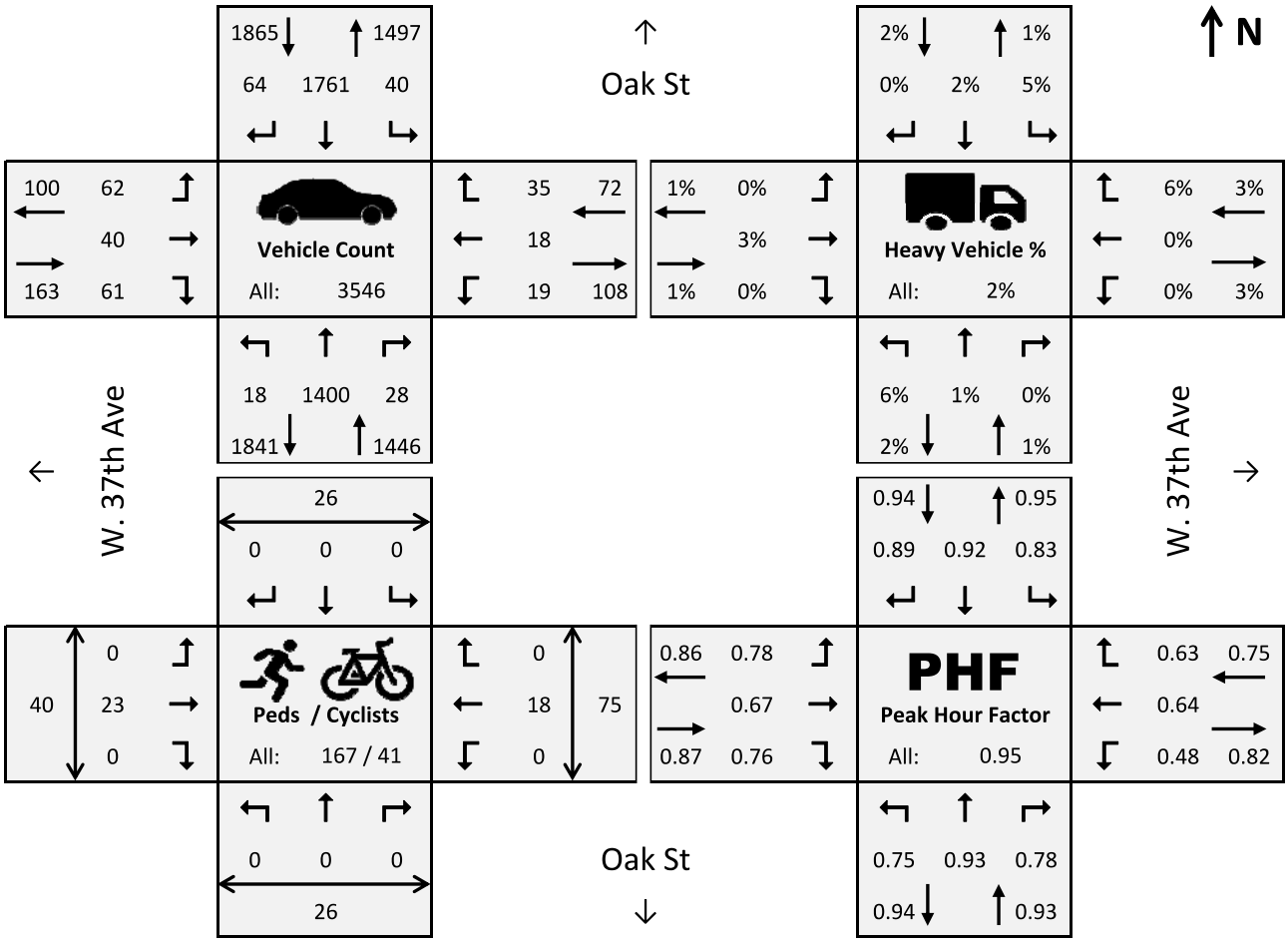
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	4	347	4	1	209	6	9	1	4	1	1	1	1	1	1	1
7:15 - 7:30	5	417	4	0	254	5	4	0	9	3	1	6	0	2	1	1
7:30 - 7:45	4	427	2	0	187	9	5	1	3	0	3	2	4	4	4	4
7:45 - 8:00	2	480	3	0	232	13	16	0	13	3	2	3	2	2	3	0
8:00 - 8:15	8	455	8	4	239	29	20	2	24	1	12	6	21	6	5	10
8:15 - 8:30	5	482	8	11	274	40	36	10	38	4	20	18	9	18	34	7
8:30 - 8:45	9	466	11	6	299	8	20	8	24	10	20	31	8	12	16	10
8:45 - 9:00	6	497	9	2	261	3	6	4	4	2	15	10	4	1	4	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Oak St @ W. 37th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

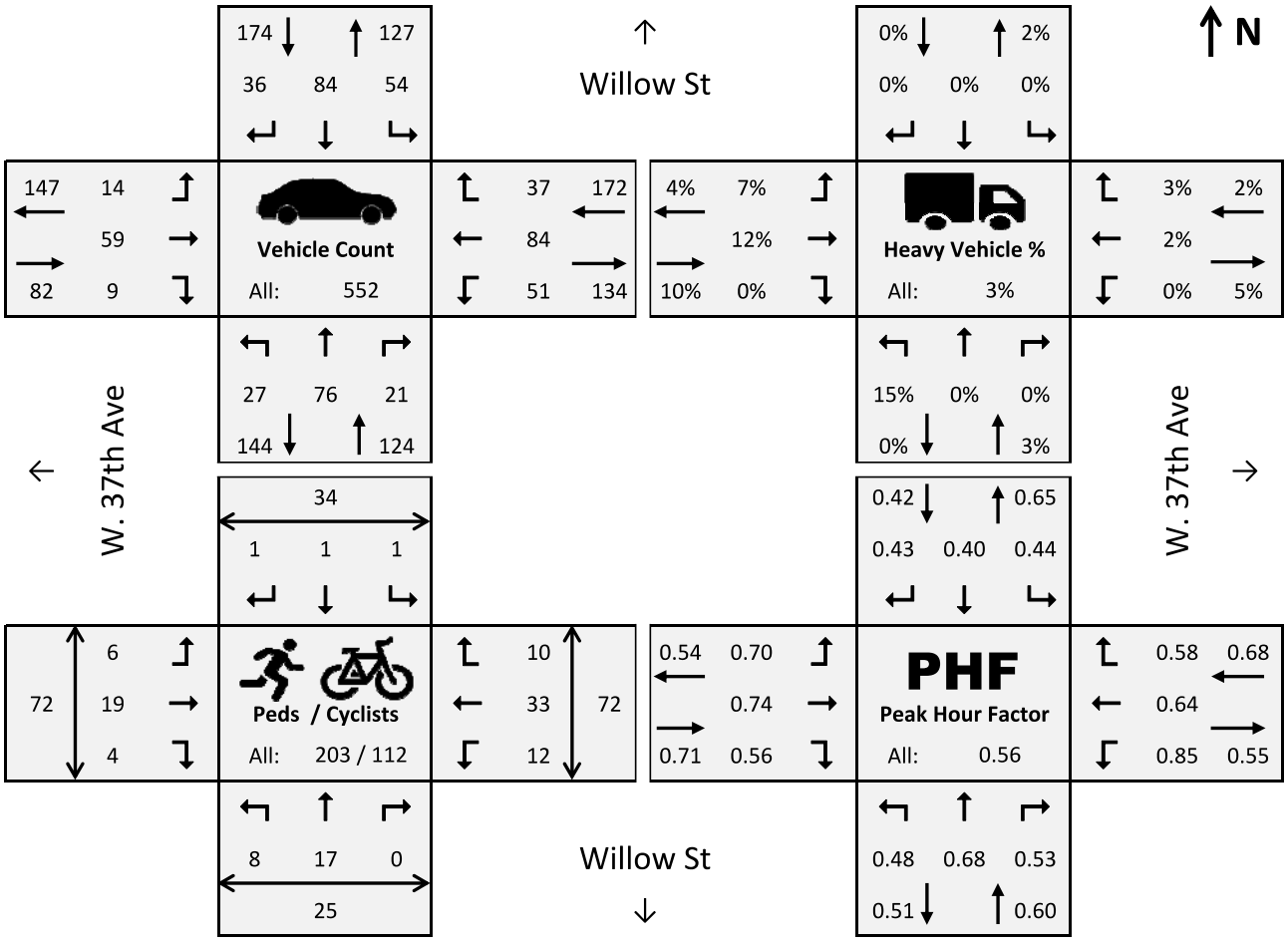
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	4	352	9	10	424	18	20	7	20	4	3	14	5	9	31	2
15:15 - 15:30	3	341	9	9	431	16	17	15	15	10	7	7	10	13	35	27
15:30 - 15:45	6	375	8	9	476	12	11	13	11	3	2	9	8	1	6	7
15:45 - 16:00	5	332	2	12	430	18	14	5	15	2	6	5	3	3	3	4
16:00 - 16:15	3	289	5	6	421	15	20	7	14	3	3	3	4	5	5	1
16:15 - 16:30	3	346	3	8	457	13	11	9	19	2	2	9	4	3	7	4
16:30 - 16:45	1	313	4	7	437	11	11	2	10	3	2	8	8	5	5	9
16:45 - 17:00	0	395	4	16	403	10	20	4	12	2	2	8	6	5	2	5
17:00 - 17:15	0	315	4	7	409	9	16	1	13	2	0	13	3	1	2	4
17:15 - 17:30	3	404	10	10	412	6	16	5	14	1	0	11	3	4	13	1
17:30 - 17:45	1	355	6	7	441	7	10	1	12	0	4	10	6	3	6	5
17:45 - 18:00	5	324	4	4	383	7	5	0	10	3	0	10	3	3	4	2
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Willow St @ W. 37th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

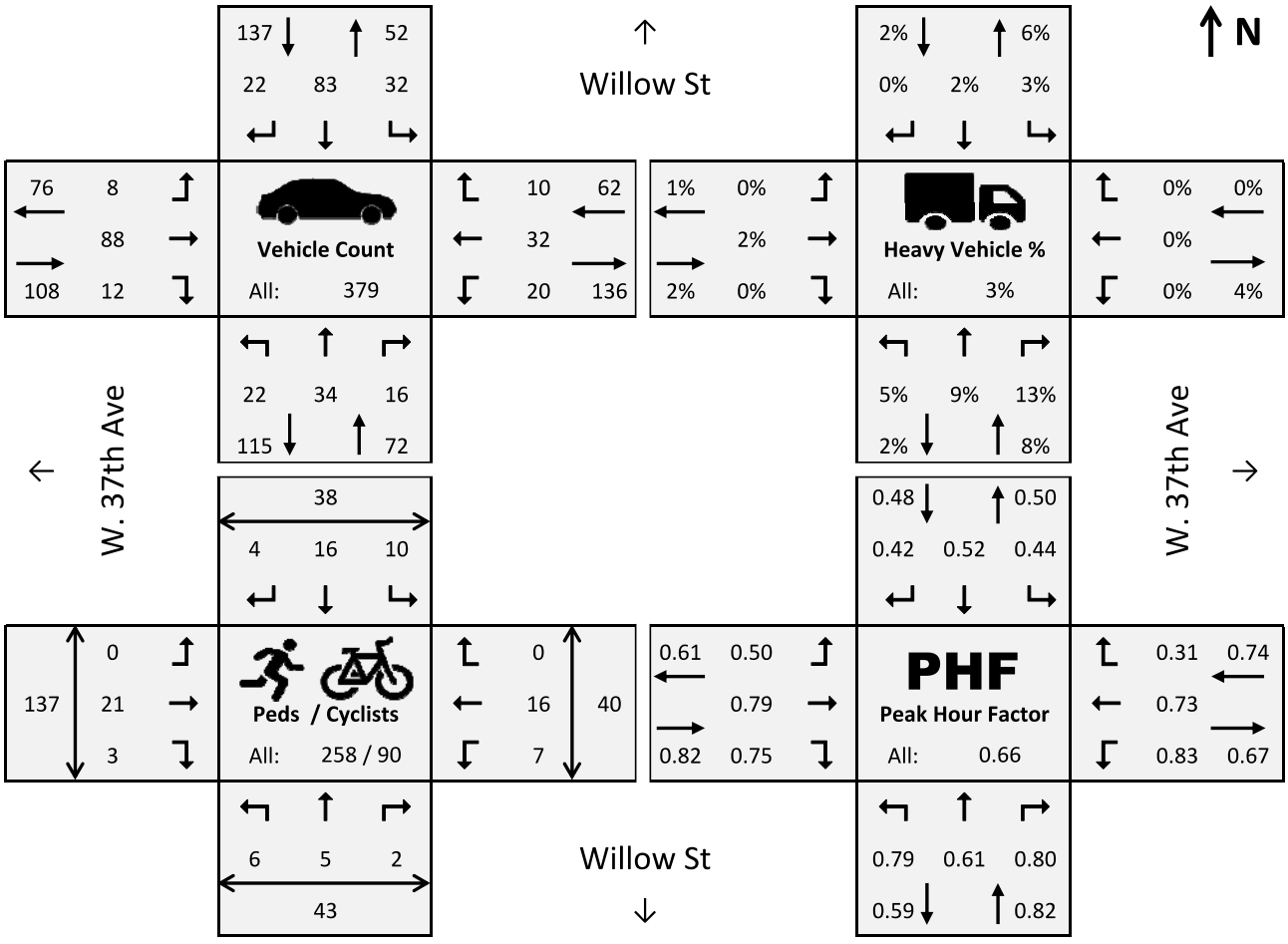
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	2	1	0	1	3	1	0	2	1	0	2	0	1	3	1	1
7:15 - 7:30	2	4	2	0	3	2	0	3	0	2	6	1	2	2	2	2
7:30 - 7:45	0	10	0	1	2	2	0	4	0	4	3	3	2	3	7	3
7:45 - 8:00	2	2	2	3	4	2	2	1	0	5	7	0	5	2	3	3
8:00 - 8:15	0	9	3	4	4	4	5	7	1	8	8	5	2	11	4	10
8:15 - 8:30	9	28	4	15	19	7	0	20	4	14	29	14	8	10	23	29
8:30 - 8:45	14	28	10	31	52	21	5	20	4	14	33	16	5	3	22	25
8:45 - 9:00	4	11	4	4	9	4	4	12	0	15	14	2	19	1	23	8
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Willow St @ W. 37th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

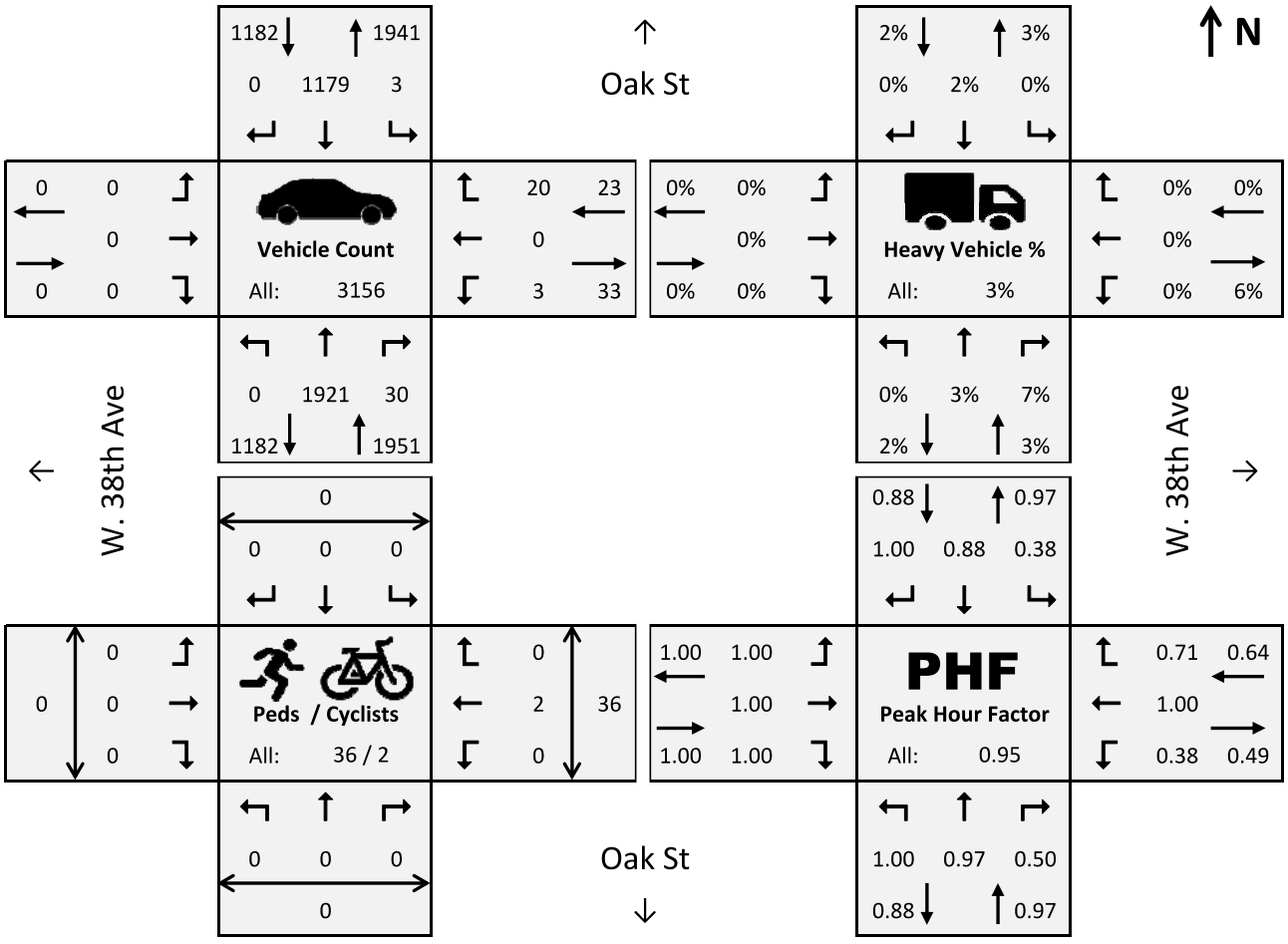
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	6	14	2	7	24	7	4	16	3	4	9	8	10	17	18	47
15:15 - 15:30	7	9	5	18	40	13	2	28	3	6	11	2	20	15	19	85
15:30 - 15:45	7	6	5	2	14	0	1	27	4	5	5	0	3	8	3	2
15:45 - 16:00	2	5	4	5	5	2	1	17	2	5	7	0	5	3	0	3
16:00 - 16:15	3	1	3	6	17	2	1	14	3	7	7	1	7	13	7	8
16:15 - 16:30	2	0	2	1	9	0	1	12	5	3	6	3	5	7	3	7
16:30 - 16:45	4	1	1	3	7	3	1	5	6	4	4	0	8	0	8	5
16:45 - 17:00	0	2	2	3	7	2	1	12	9	2	7	1	3	3	3	3
17:00 - 17:15	9	4	5	1	8	2	1	7	4	8	4	2	1	7	3	5
17:15 - 17:30	2	9	1	2	11	4	1	16	5	8	4	2	4	8	4	2
17:30 - 17:45	10	6	3	2	14	0	1	14	3	1	7	0	1	3	5	2
17:45 - 18:00	2	5	2	1	7	3	1	4	1	1	5	1	6	5	2	6
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Oak St @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

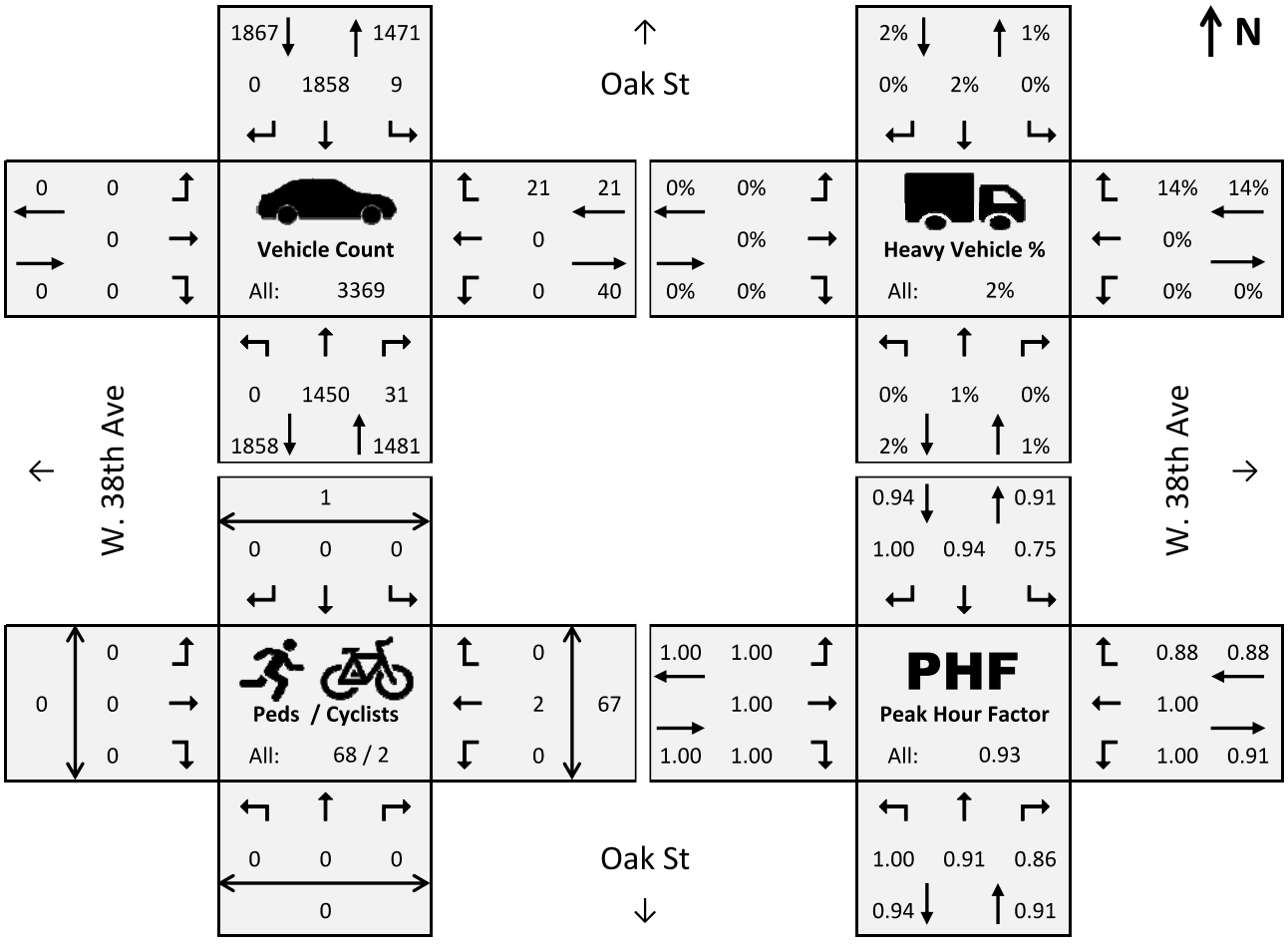
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	371	2	1	212	0	0	0	0	0	0	1	0	0	1	0
7:15 - 7:30	0	411	4	0	265	0	0	0	0	0	0	1	0	0	1	0
7:30 - 7:45	0	448	2	0	193	0	0	0	0	0	0	2	0	0	5	0
7:45 - 8:00	0	478	4	1	249	0	0	0	0	0	0	4	0	0	3	0
8:00 - 8:15	0	465	1	0	263	0	0	0	0	0	0	4	0	0	1	0
8:15 - 8:30	0	490	5	0	315	0	0	0	0	0	0	5	0	0	23	0
8:30 - 8:45	0	471	15	2	334	0	0	0	0	2	0	7	0	0	9	0
8:45 - 9:00	0	495	9	1	267	0	0	0	0	1	0	4	0	0	3	0
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Oak St @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

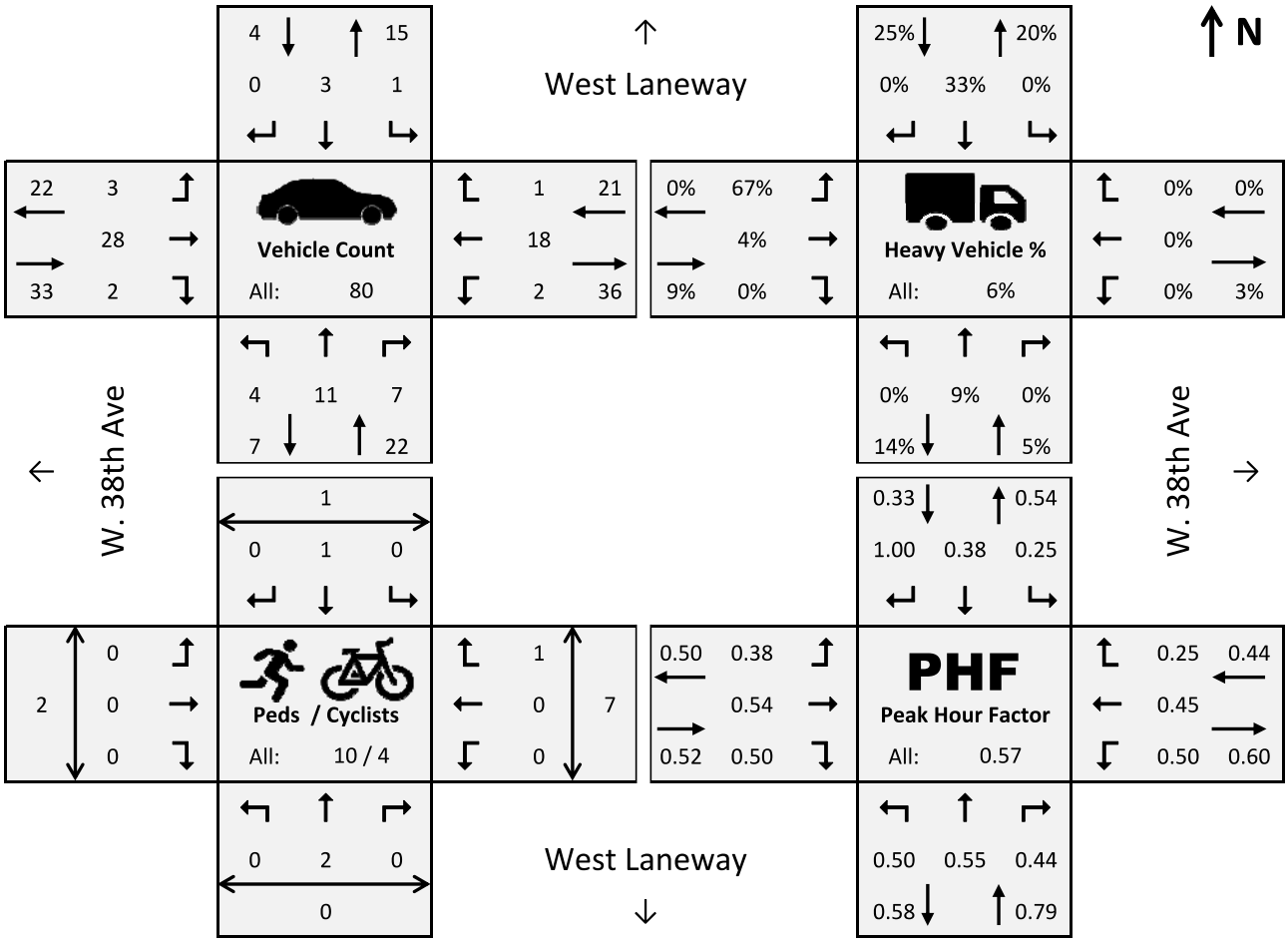
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	0	377	7	2	448	0	0	0	0	0	0	6	0	0	21	0
15:15 - 15:30	0	336	8	2	460	0	0	0	0	0	0	4	0	0	33	0
15:30 - 15:45	0	398	9	2	492	0	0	0	0	0	0	6	1	0	10	0
15:45 - 16:00	0	339	7	3	458	0	0	0	0	0	0	5	0	0	3	0
16:00 - 16:15	0	293	11	6	430	0	0	0	0	3	0	3	0	0	2	0
16:15 - 16:30	0	337	3	3	473	0	0	0	0	0	0	2	0	0	3	0
16:30 - 16:45	0	315	5	1	449	0	0	0	0	0	0	3	0	0	6	0
16:45 - 17:00	0	407	8	0	420	0	0	0	0	0	0	2	0	0	6	0
17:00 - 17:15	0	328	5	3	421	0	0	0	0	1	0	3	0	0	0	0
17:15 - 17:30	0	406	9	2	430	0	0	0	0	0	0	1	0	0	11	0
17:30 - 17:45	0	359	9	4	459	0	0	0	0	0	0	5	0	2	2	0
17:45 - 18:00	0	329	10	4	397	0	0	0	0	0	0	5	0	0	9	0
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West Laneway @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

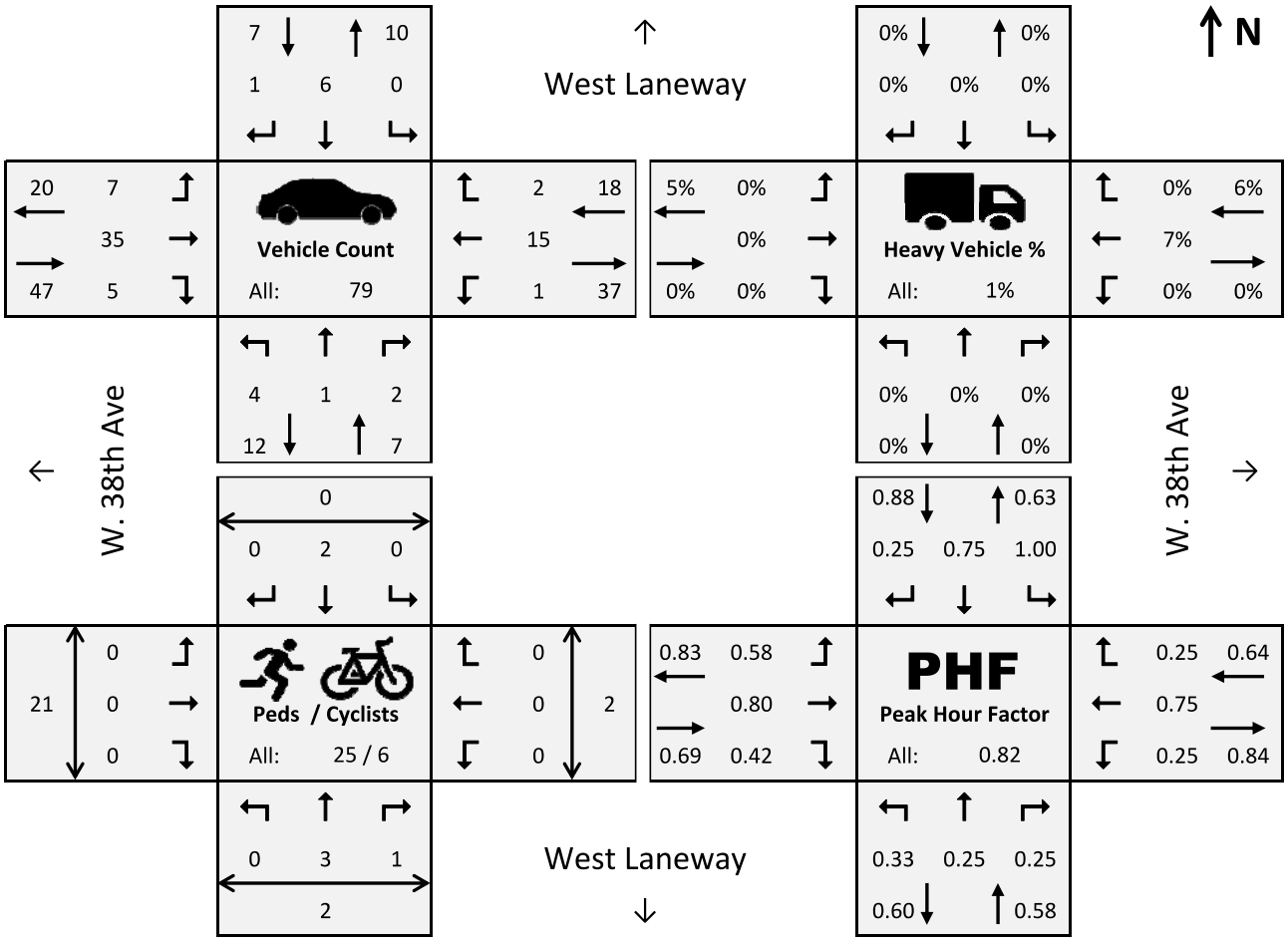
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	0	0	0	0	0	0	4	0	0	1	0	0	0	0	0
7:15 - 7:30	0	0	0	0	0	0	0	4	0	1	1	0	0	0	0	1
7:30 - 7:45	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
7:45 - 8:00	1	0	0	0	0	0	2	3	1	0	4	0	0	0	2	0
8:00 - 8:15	2	5	0	0	0	0	0	1	0	0	1	0	0	0	0	0
8:15 - 8:30	1	1	1	1	2	0	1	4	0	0	4	0	0	0	1	0
8:30 - 8:45	1	4	2	0	0	0	2	13	1	1	10	1	0	0	5	2
8:45 - 9:00	0	1	4	0	1	0	0	10	1	1	3	0	1	0	1	0
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West Laneway @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:15 - 16:15
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:15 - 16:15
Notes:					

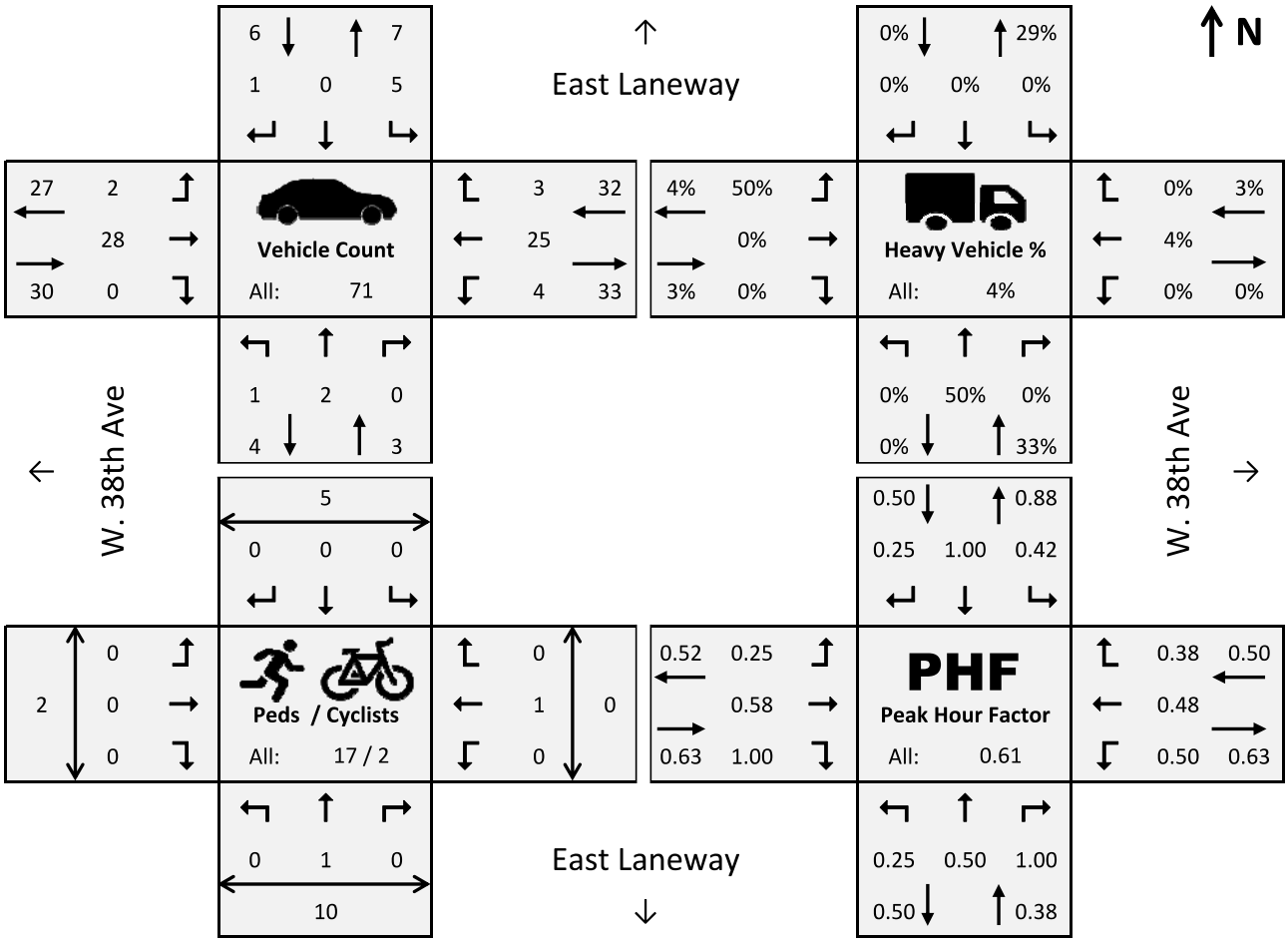
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	0	1	0	0	2	0	0	10	0	1	7	0	0	0	2	6
15:15 - 15:30	1	0	2	0	2	0	2	9	0	1	3	0	0	0	0	15
15:30 - 15:45	0	1	0	0	0	1	0	7	1	0	5	0	0	1	0	4
15:45 - 16:00	0	0	0	0	2	0	2	8	1	0	5	2	0	1	1	1
16:00 - 16:15	3	0	0	0	2	0	3	11	3	0	2	0	0	0	1	1
16:15 - 16:30	1	0	1	1	0	0	0	6	0	0	2	0	1	0	0	0
16:30 - 16:45	1	0	2	0	1	0	0	4	1	1	2	0	0	0	0	0
16:45 - 17:00	1	0	2	0	2	0	1	7	0	0	2	0	0	0	2	5
17:00 - 17:15	0	0	0	0	0	0	2	6	2	4	5	2	0	0	0	2
17:15 - 17:30	1	0	1	0	0	0	0	8	2	3	0	1	1	0	1	0
17:30 - 17:45	0	1	1	0	1	0	0	10	2	0	5	1	0	1	1	2
17:45 - 18:00	2	0	0	0	0	0	1	9	3	0	3	1	0	0	2	0
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East Laneway @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

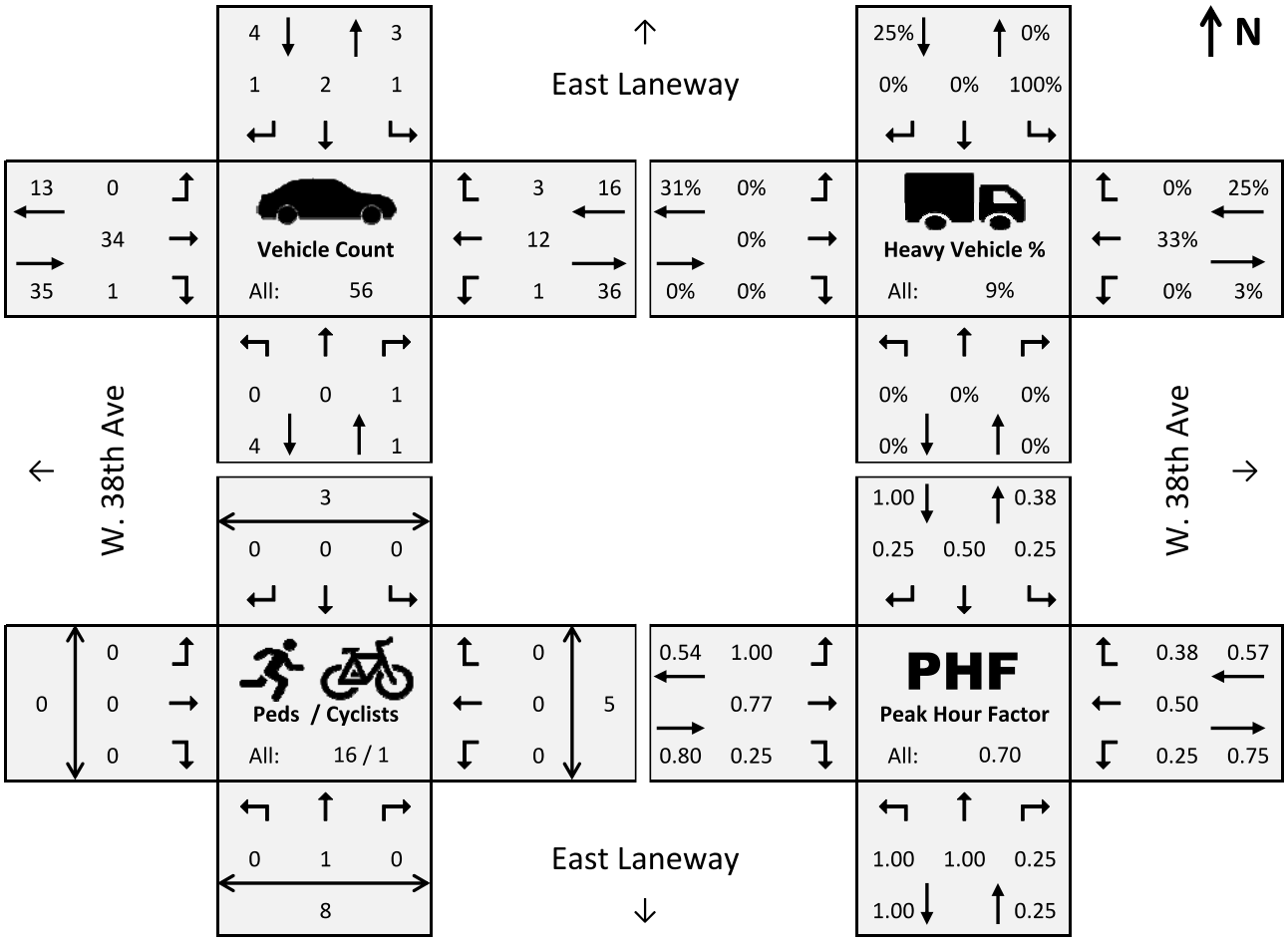
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	0	1	0	0	0	0	2	0	1	4	0	0	4	0	0
7:15 - 7:30	0	0	0	0	0	0	1	2	0	0	4	0	0	3	0	0
7:30 - 7:45	0	0	0	0	0	0	0	1	0	0	1	0	2	1	0	0
7:45 - 8:00	3	1	0	0	0	0	1	2	0	0	5	0	0	2	0	0
8:00 - 8:15	0	1	0	1	0	0	0	1	0	2	3	0	2	2	0	0
8:15 - 8:30	1	1	0	0	0	1	0	5	0	0	4	1	1	4	0	0
8:30 - 8:45	0	0	0	1	0	0	0	12	0	1	13	2	2	3	0	0
8:45 - 9:00	0	0	0	3	0	0	2	10	0	1	5	0	0	1	0	2
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East Laneway @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

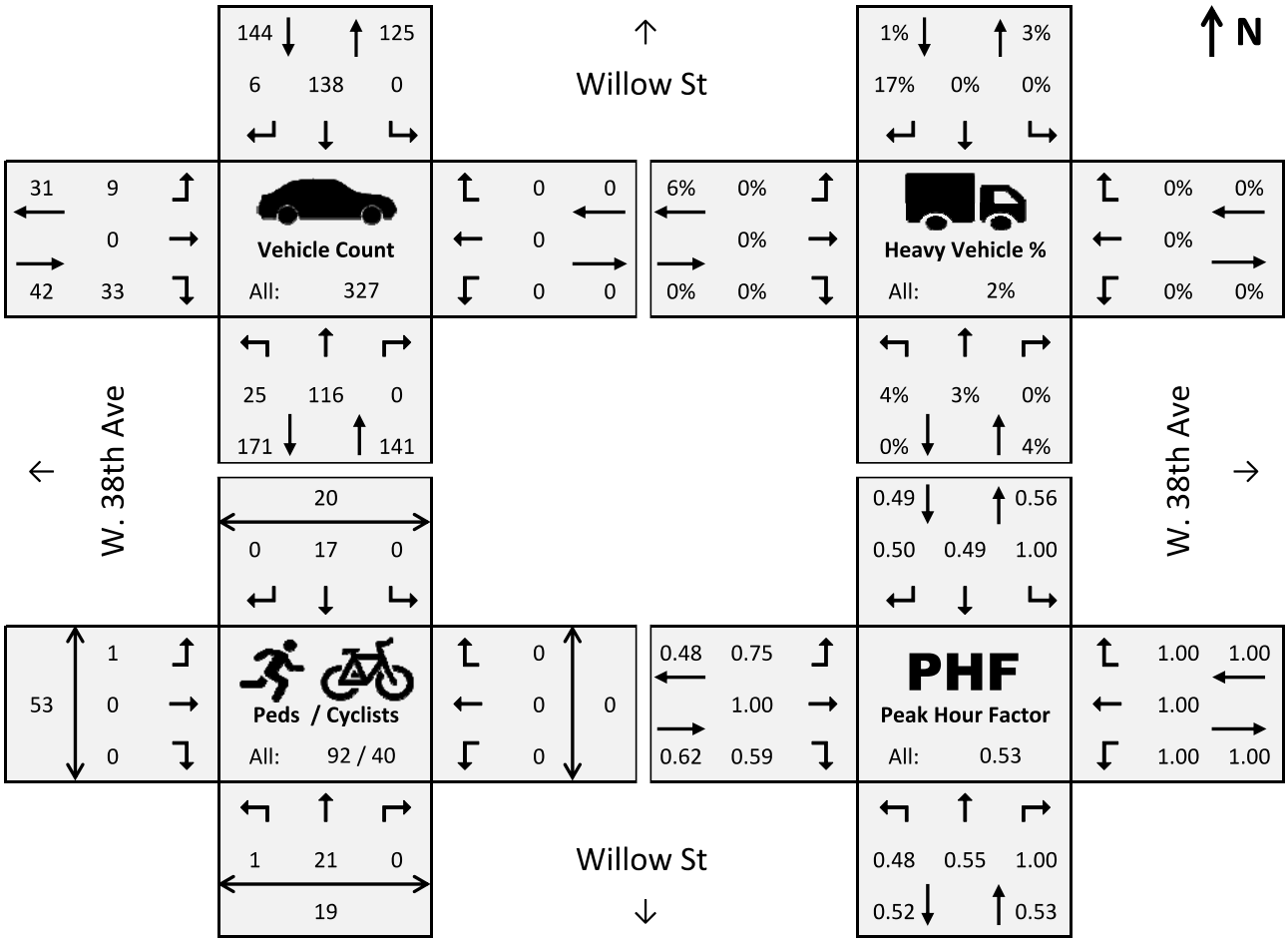
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	0	0	1	0	1	0	0	11	0	0	6	1	0	2	2	0
15:15 - 15:30	0	0	0	0	0	1	0	9	0	1	1	0	1	1	0	0
15:30 - 15:45	0	0	0	1	0	0	0	7	1	0	3	2	1	5	2	0
15:45 - 16:00	0	0	0	0	1	0	0	7	0	0	2	0	1	0	1	0
16:00 - 16:15	0	0	1	0	0	0	0	2	0	0	1	0	0	1	0	0
16:15 - 16:30	0	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0
16:30 - 16:45	0	1	0	0	0	0	0	2	0	0	1	0	0	0	0	0
16:45 - 17:00	0	0	0	1	0	0	0	4	0	1	3	0	0	3	0	0
17:00 - 17:15	0	0	0	0	0	0	0	3	0	0	8	0	0	1	0	0
17:15 - 17:30	0	0	1	0	0	1	0	5	2	1	0	0	0	1	1	0
17:30 - 17:45	0	0	0	1	0	0	0	11	1	0	5	1	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	8	0	0	3	0	0	1	0	0
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Willow St @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

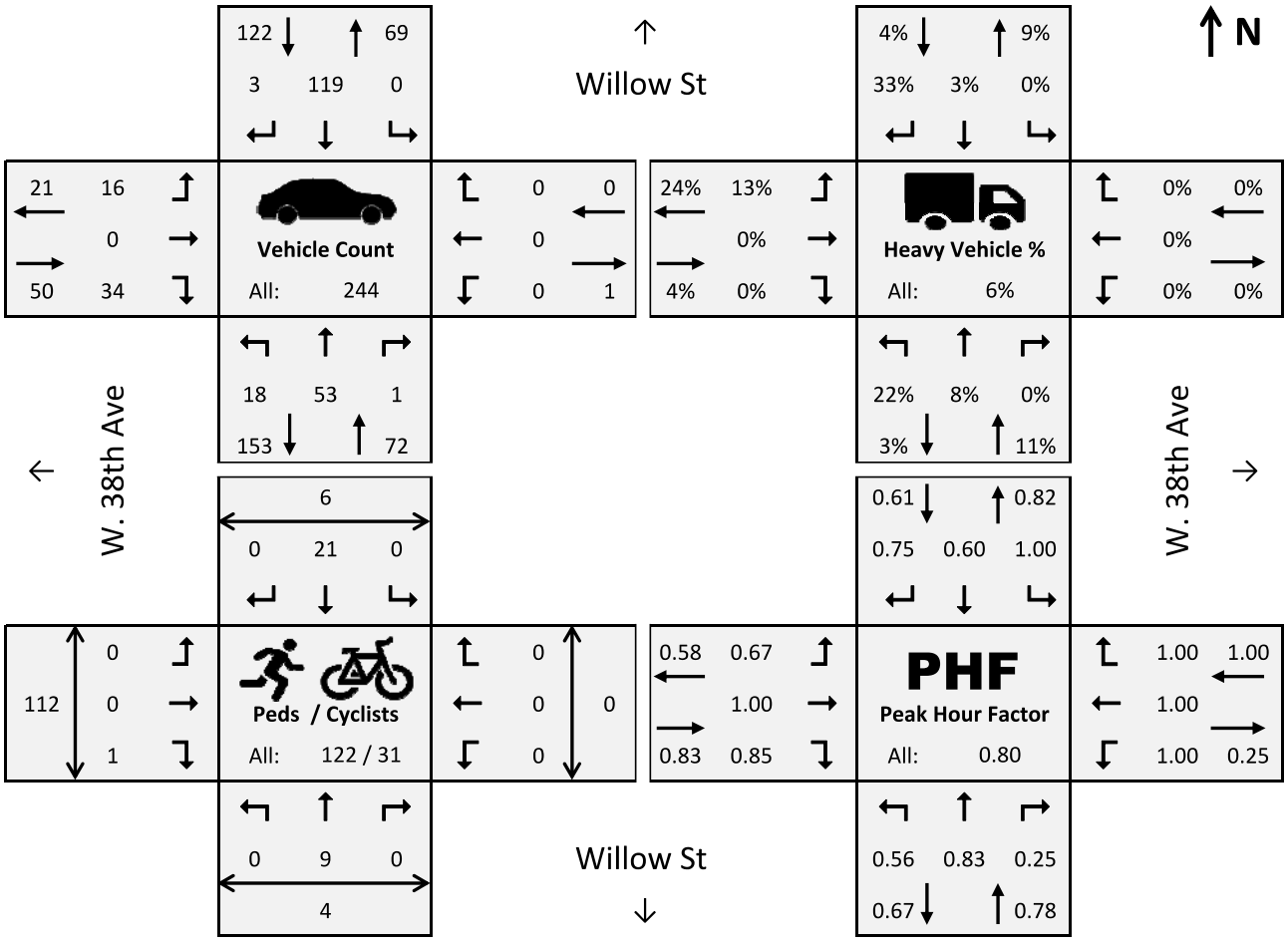
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	4	3	0	0	2	0	1	0	1	0	0	0	0	0	0	0
7:15 - 7:30	2	7	0	0	4	2	3	0	1	0	0	0	2	0	0	6
7:30 - 7:45	1	9	0	0	6	0	0	0	1	0	0	0	2	0	0	3
7:45 - 8:00	5	8	0	0	9	1	1	0	2	0	0	0	4	0	0	4
8:00 - 8:15	4	13	0	0	12	1	1	0	2	0	0	0	2	4	0	6
8:15 - 8:30	4	38	0	0	32	1	2	0	5	0	0	0	9	4	0	26
8:30 - 8:45	13	53	0	0	70	3	3	0	12	0	0	0	6	9	0	12
8:45 - 9:00	4	12	0	0	24	1	3	0	14	0	0	0	3	2	0	9
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Willow St @ W. 38th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

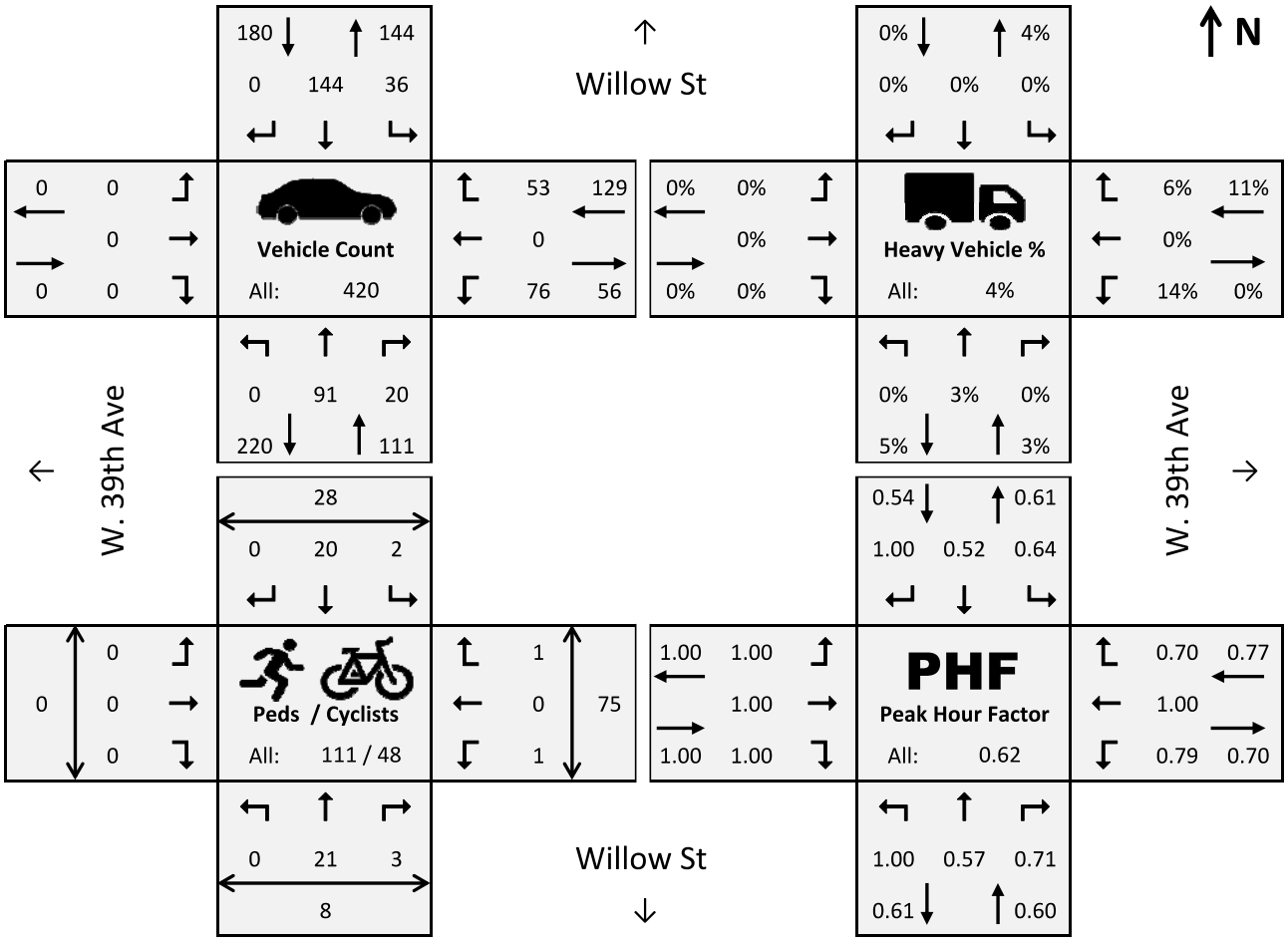
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	8	15	0	0	33	1	6	0	9	0	0	0	0	2	0	20
15:15 - 15:30	2	12	0	0	50	0	5	0	7	0	0	0	2	0	0	88
15:30 - 15:45	5	16	0	0	23	1	4	0	10	0	0	0	2	2	0	2
15:45 - 16:00	3	10	1	0	13	1	1	0	8	0	0	0	2	0	0	2
16:00 - 16:15	3	3	0	0	26	0	3	0	13	0	0	0	1	9	0	7
16:15 - 16:30	2	3	0	0	12	1	1	0	7	0	0	0	3	1	0	0
16:30 - 16:45	2	5	0	0	18	0	1	0	5	0	0	0	2	13	0	6
16:45 - 17:00	3	3	0	0	16	1	0	0	10	0	0	0	1	2	0	2
17:00 - 17:15	7	16	0	0	17	3	1	0	4	0	0	0	6	9	0	5
17:15 - 17:30	1	12	0	0	21	3	2	0	5	0	0	0	0	2	0	3
17:30 - 17:45	3	11	0	0	14	3	7	0	7	0	0	0	2	2	0	0
17:45 - 18:00	0	8	0	0	6	3	2	0	9	0	0	0	1	3	0	3
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Willow St @ W. 39th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

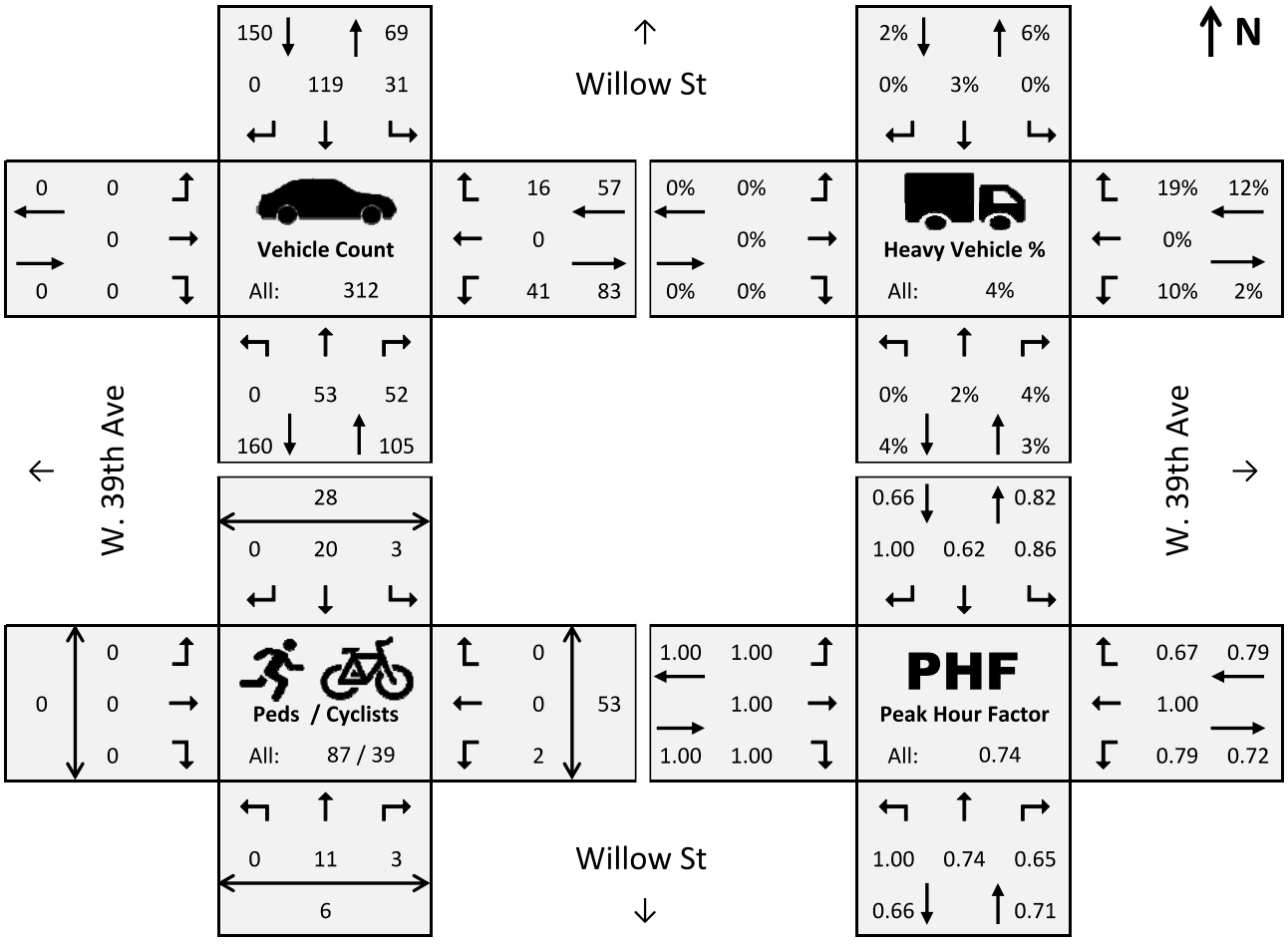
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	4	2	0	3	0	0	0	0	6	0	2	2	2	1	0
7:15 - 7:30	0	9	11	1	5	0	0	0	0	5	0	2	5	1	3	0
7:30 - 7:45	0	10	4	1	7	0	0	0	0	14	1	2	2	0	11	0
7:45 - 8:00	0	8	4	2	9	0	0	0	0	12	0	5	1	0	2	0
8:00 - 8:15	0	7	2	5	11	0	0	0	0	19	0	11	3	0	10	0
8:15 - 8:30	0	33	5	5	32	0	0	0	0	24	0	18	13	1	25	0
8:30 - 8:45	0	40	6	14	69	0	0	0	0	21	0	19	9	7	33	0
8:45 - 9:00	0	11	7	12	32	0	0	0	0	12	0	5	3	0	7	0
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Willow St @ W. 39th Ave – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

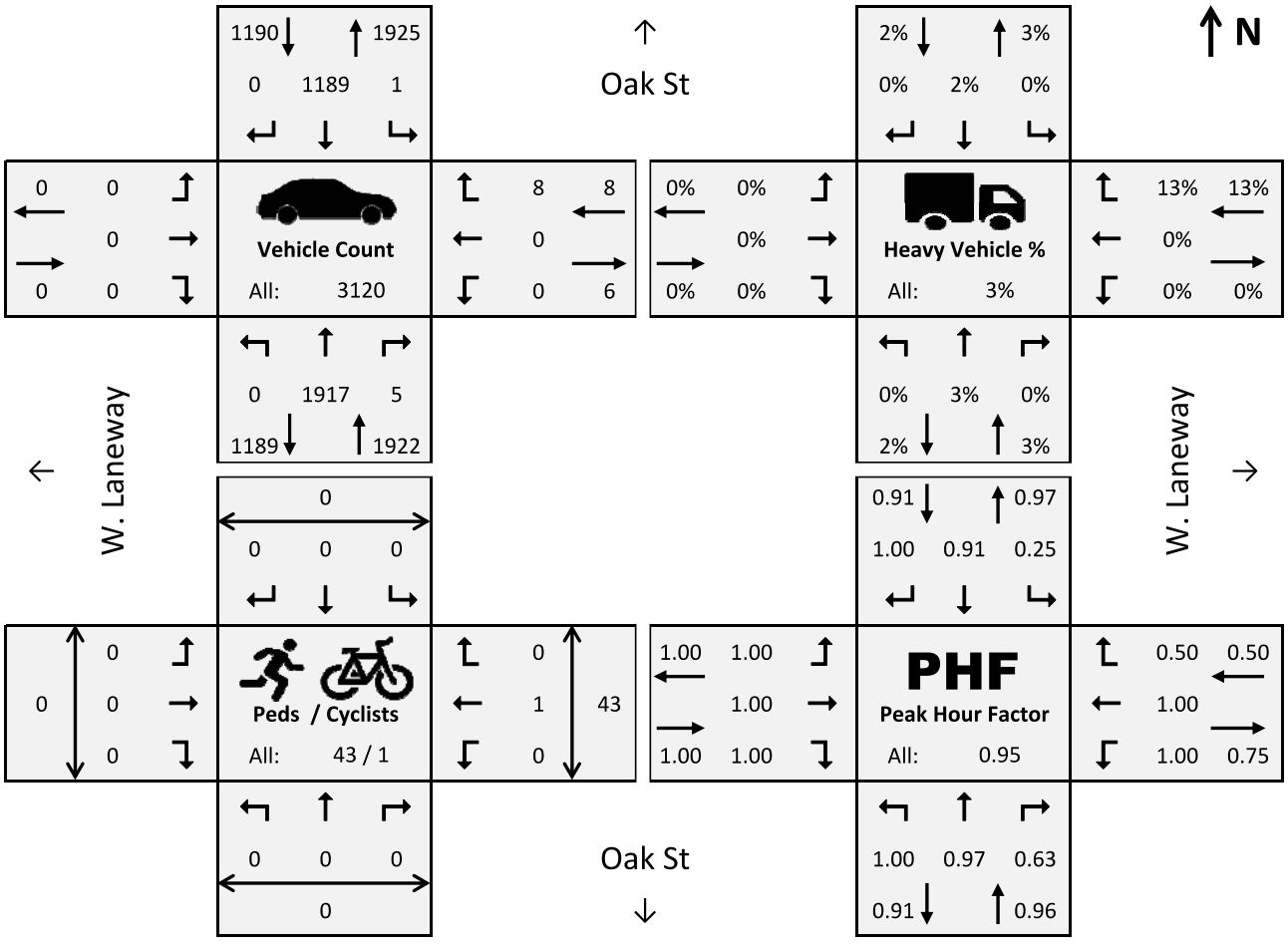
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	0	16	6	7	37	0	0	0	0	10	0	5	22	0	10	0
15:15 - 15:30	0	12	20	9	48	0	0	0	0	13	0	3	2	4	23	0
15:30 - 15:45	0	18	19	9	22	0	0	0	0	6	0	2	3	1	8	0
15:45 - 16:00	0	7	7	6	12	0	0	0	0	12	0	6	1	1	12	0
16:00 - 16:15	0	4	10	7	34	0	0	0	0	2	0	3	4	0	8	0
16:15 - 16:30	0	3	4	4	17	0	0	0	0	4	0	2	3	0	4	0
16:30 - 16:45	0	3	6	8	16	0	0	0	0	5	0	2	1	0	1	0
16:45 - 17:00	0	4	6	10	14	0	0	0	0	7	0	4	1	1	8	0
17:00 - 17:15	0	12	5	7	15	0	0	0	0	5	0	8	4	0	1	0
17:15 - 17:30	0	4	13	5	18	0	0	0	0	6	0	5	0	2	3	0
17:30 - 17:45	0	9	2	5	14	0	0	0	0	2	0	5	0	0	0	0
17:45 - 18:00	0	5	2	10	8	0	0	0	0	2	0	4	3	1	4	0
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Oak St @ W. Laneway – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

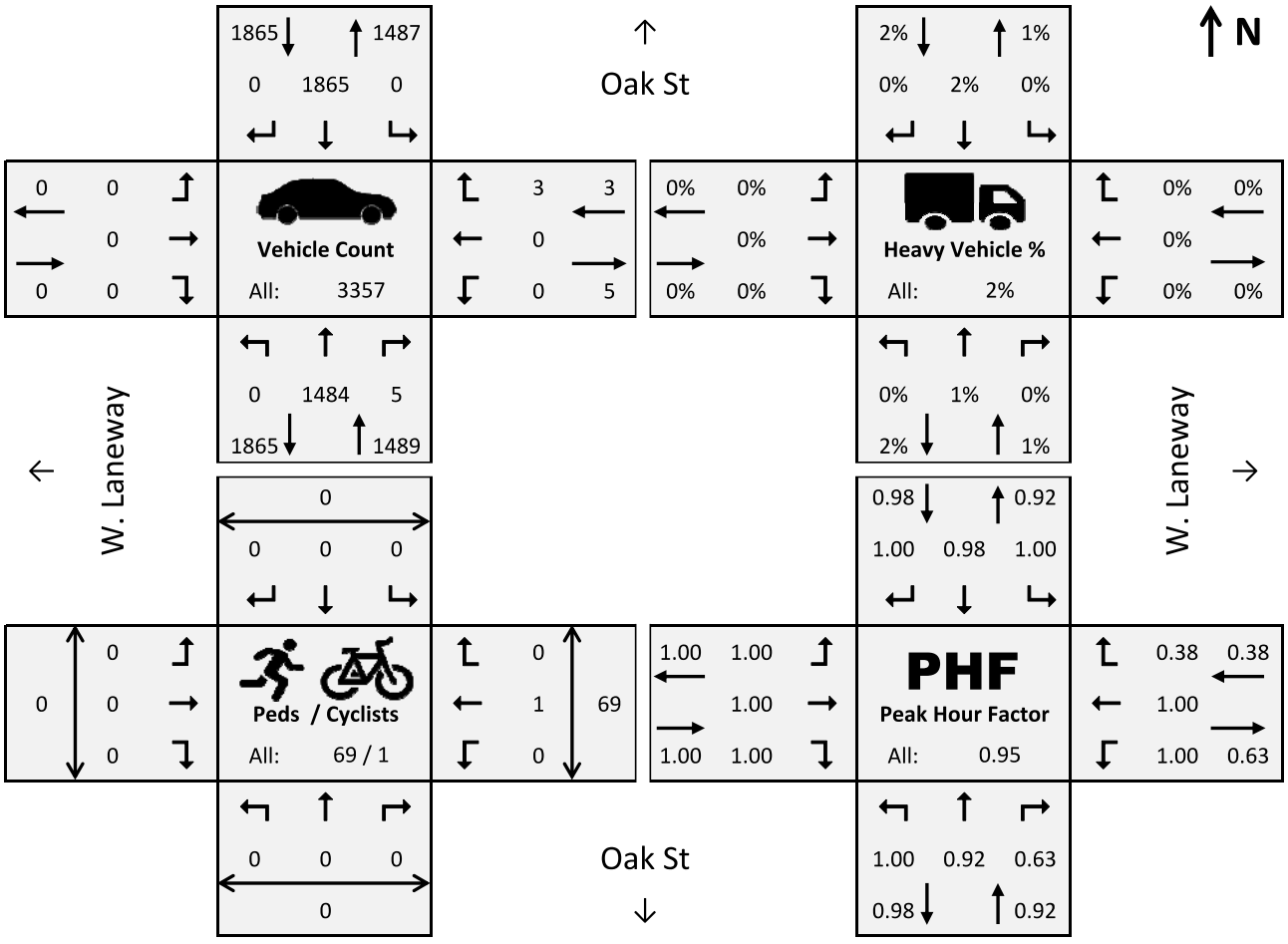
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	379	0	0	212	0	0	0	0	0	0	0	0	0	2	0
7:15 - 7:30	0	412	0	0	265	0	0	0	0	0	0	0	0	0	4	0
7:30 - 7:45	0	454	0	0	191	0	0	0	0	0	0	1	0	0	2	0
7:45 - 8:00	0	497	0	0	255	0	0	0	0	1	0	0	0	0	2	0
8:00 - 8:15	0	470	1	1	253	0	0	0	0	0	0	0	0	0	4	0
8:15 - 8:30	0	477	1	0	326	0	0	0	0	0	0	2	0	0	27	0
8:30 - 8:45	0	496	2	0	322	0	0	0	0	0	0	2	0	0	9	0
8:45 - 9:00	0	474	1	0	288	0	0	0	0	0	0	4	0	0	3	0
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Oak St @ W. Laneway – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

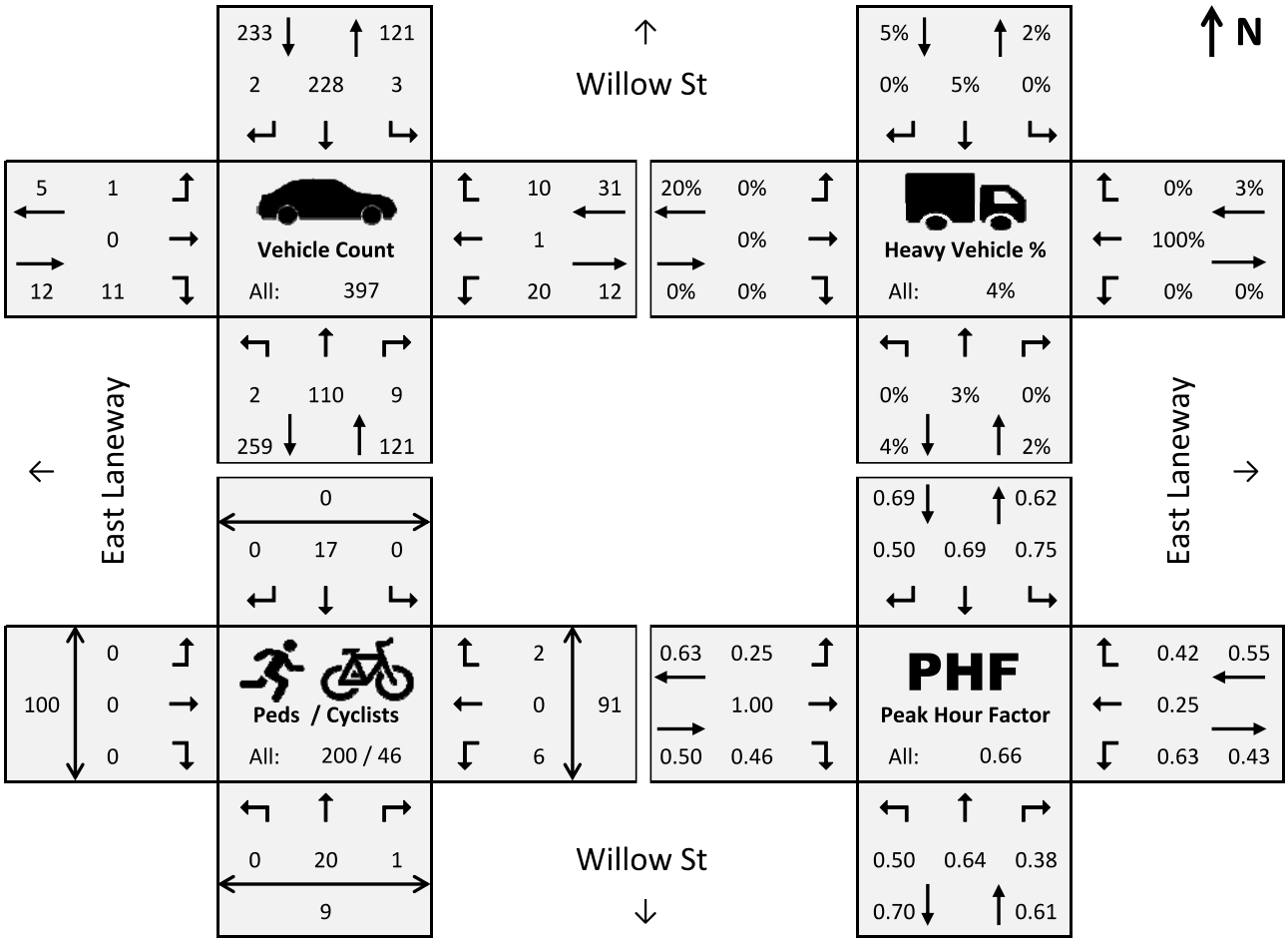
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	0	384	2	0	451	0	0	0	0	0	0	2	0	0	4	0
15:15 - 15:30	0	355	2	0	464	0	0	0	0	0	0	1	0	0	44	0
15:30 - 15:45	0	404	1	0	478	0	0	0	0	0	0	0	0	0	11	0
15:45 - 16:00	0	341	0	0	472	0	0	0	0	0	0	0	0	0	10	0
16:00 - 16:15	0	304	1	0	444	0	0	0	0	0	0	1	0	0	7	0
16:15 - 16:30	0	325	0	0	468	0	0	0	0	0	0	0	0	0	6	0
16:30 - 16:45	0	343	0	1	442	0	0	0	0	0	0	0	0	0	3	0
16:45 - 17:00	0	392	1	0	414	0	0	0	0	0	0	1	0	0	16	0
17:00 - 17:15	0	350	2	0	435	0	0	0	0	0	0	0	0	0	2	0
17:15 - 17:30	0	400	4	1	419	0	0	0	0	0	0	0	0	0	16	0
17:30 - 17:45	0	361	1	0	426	0	0	0	0	0	0	3	0	0	5	0
17:45 - 18:00	0	349	1	0	445	0	0	0	0	0	0	1	0	0	8	0
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Willow St @ East Laneway – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

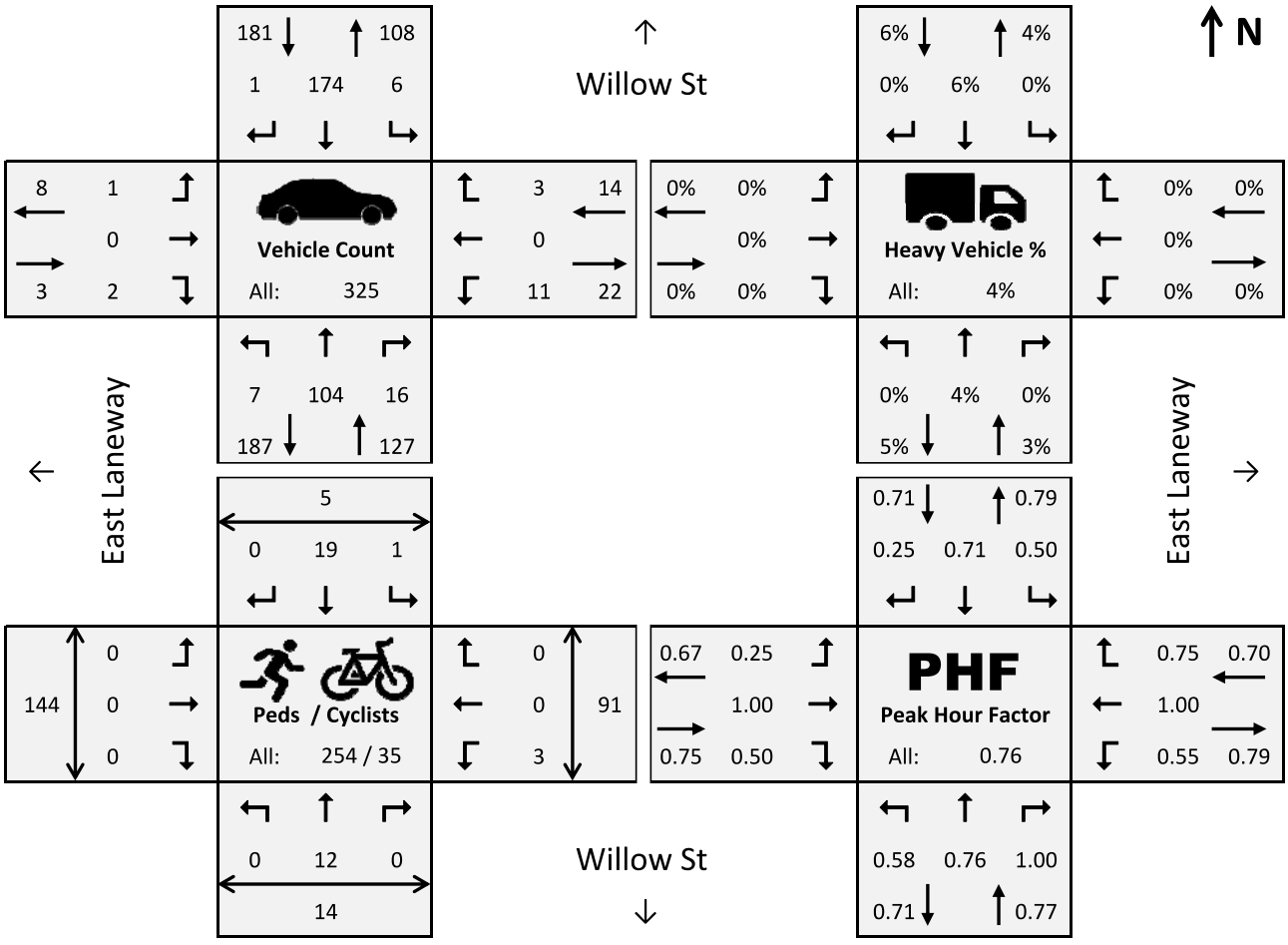
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	6	4	1	7	0	1	0	0	2	1	0	0	1	8	3
7:15 - 7:30	0	18	1	1	10	0	0	0	0	0	0	0	0	4	5	8
7:30 - 7:45	0	13	0	0	21	1	0	0	0	1	0	1	3	0	14	5
7:45 - 8:00	0	14	0	0	18	1	0	0	1	2	0	0	2	1	7	2
8:00 - 8:15	1	12	1	1	29	0	0	0	2	3	1	0	0	2	17	15
8:15 - 8:30	0	35	1	1	53	1	1	0	1	6	0	3	0	0	35	42
8:30 - 8:45	1	43	6	1	83	0	0	0	2	8	0	6	0	0	31	33
8:45 - 9:00	0	20	1	0	63	1	0	0	6	3	0	1	0	7	8	10
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Willow St @ East Laneway – Vancouver, BC

Project#:	04-23-0050	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Sep 25, 2025 (Thu)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

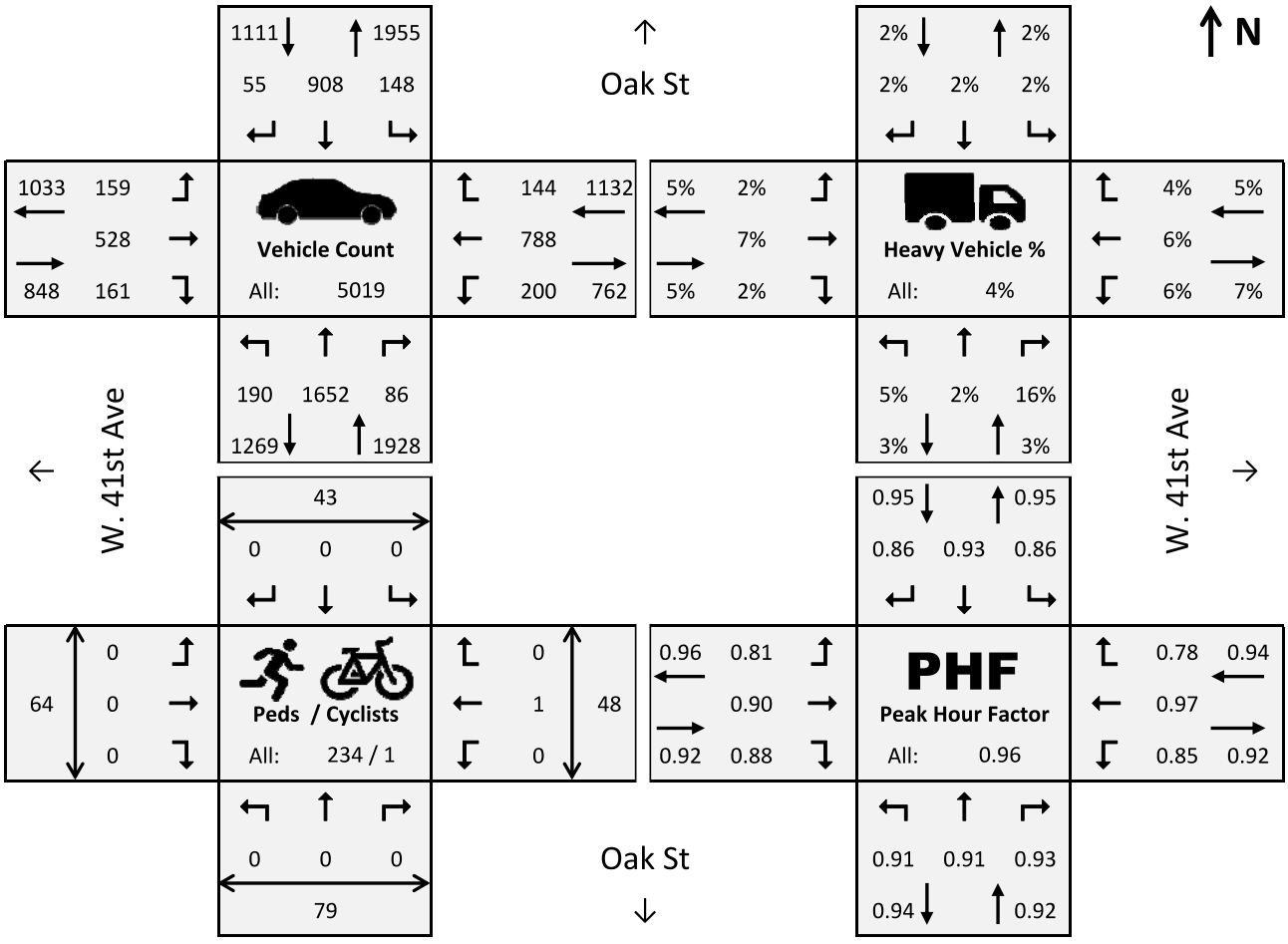
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	2	24	4	0	53	0	0	0	0	1	0	1	1	1	19	29
15:15 - 15:30	0	33	4	2	61	1	0	0	1	4	0	1	1	9	37	99
15:30 - 15:45	3	34	4	1	33	0	0	0	1	5	0	0	1	1	18	7
15:45 - 16:00	2	13	4	3	27	0	1	0	0	1	0	1	2	3	17	9
16:00 - 16:15	1	14	5	1	35	0	0	0	3	2	0	0	0	0	7	10
16:15 - 16:30	1	8	1	1	23	0	0	0	0	2	0	0	3	0	7	4
16:30 - 16:45	0	9	1	0	22	0	0	0	0	2	0	0	1	0	4	5
16:45 - 17:00	0	14	1	1	21	0	0	0	1	2	0	0	0	1	7	7
17:00 - 17:15	0	18	1	0	21	0	0	1	1	2	0	0	1	4	0	5
17:15 - 17:30	3	20	5	3	25	0	0	1	0	1	0	0	0	0	11	9
17:30 - 17:45	0	10	2	1	22	1	0	0	0	1	0	1	0	1	8	10
17:45 - 18:00	0	8	5	0	12	0	0	0	1	0	0	0	1	1	3	12
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Oak St @ W. 41st Ave – Vancouver, BC

Project#:	04-24-0243	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Jun 10, 2025 (Tue)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

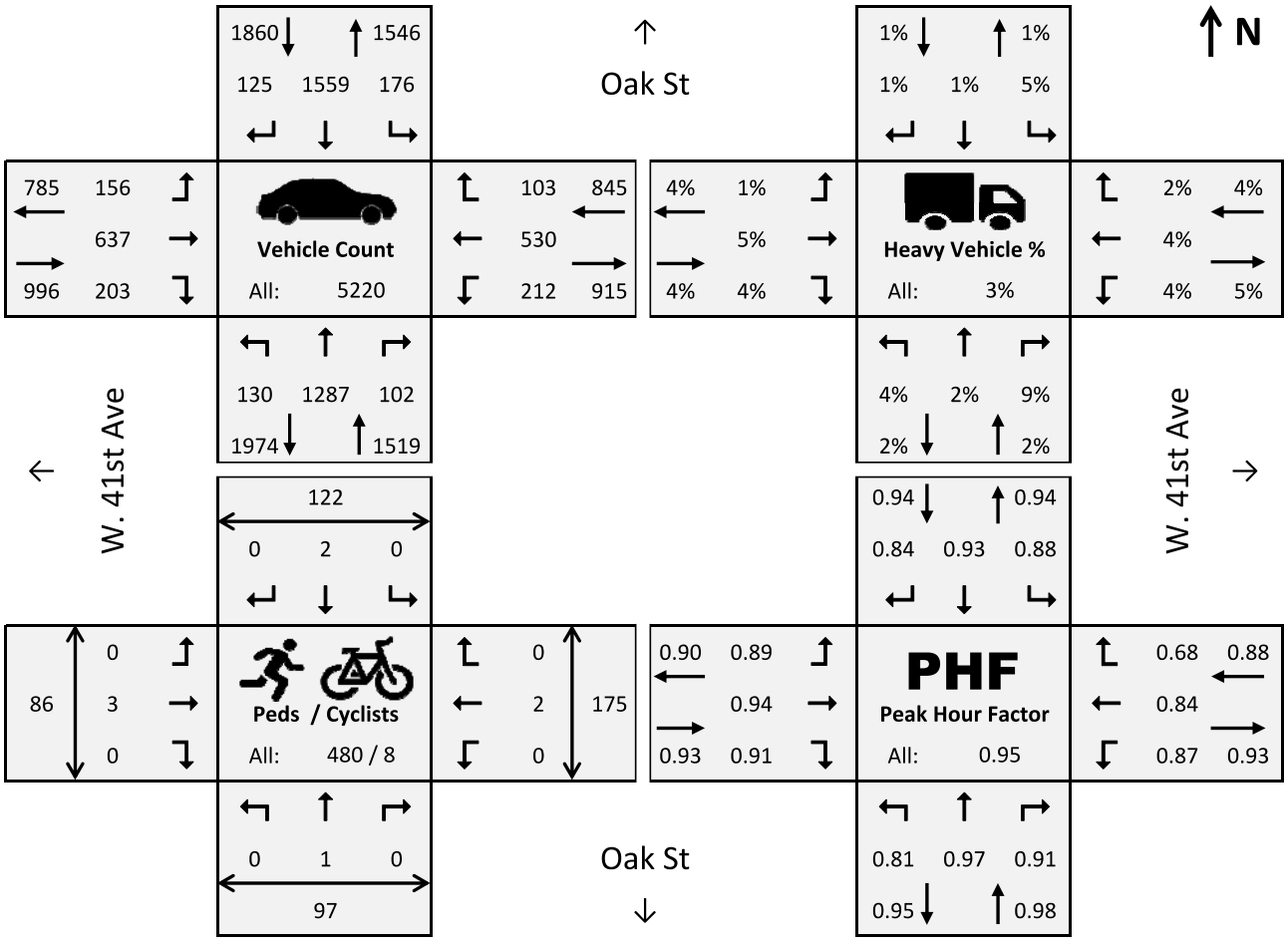
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	23	338	23	13	153	10	20	69	18	20	117	18	7	5	8	3
7:15 - 7:30	20	389	34	14	222	6	16	72	27	15	93	16	13	16	7	23
7:30 - 7:45	36	452	26	10	204	11	16	74	28	24	114	23	5	20	4	19
7:45 - 8:00	33	464	10	16	214	10	15	100	31	39	166	37	6	12	4	10
8:00 - 8:15	47	453	22	27	245	11	32	93	34	42	182	29	11	17	12	17
8:15 - 8:30	52	380	23	38	196	15	49	147	35	42	199	46	16	17	9	13
8:30 - 8:45	39	437	19	40	232	16	37	145	46	59	204	38	13	25	16	24
8:45 - 9:00	52	382	22	43	235	13	41	143	46	57	203	31	3	20	11	10
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Oak St @ W. 41st Ave – Vancouver, BC

Project#:	04-24-0243	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Jun 10, 2025 (Tue)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

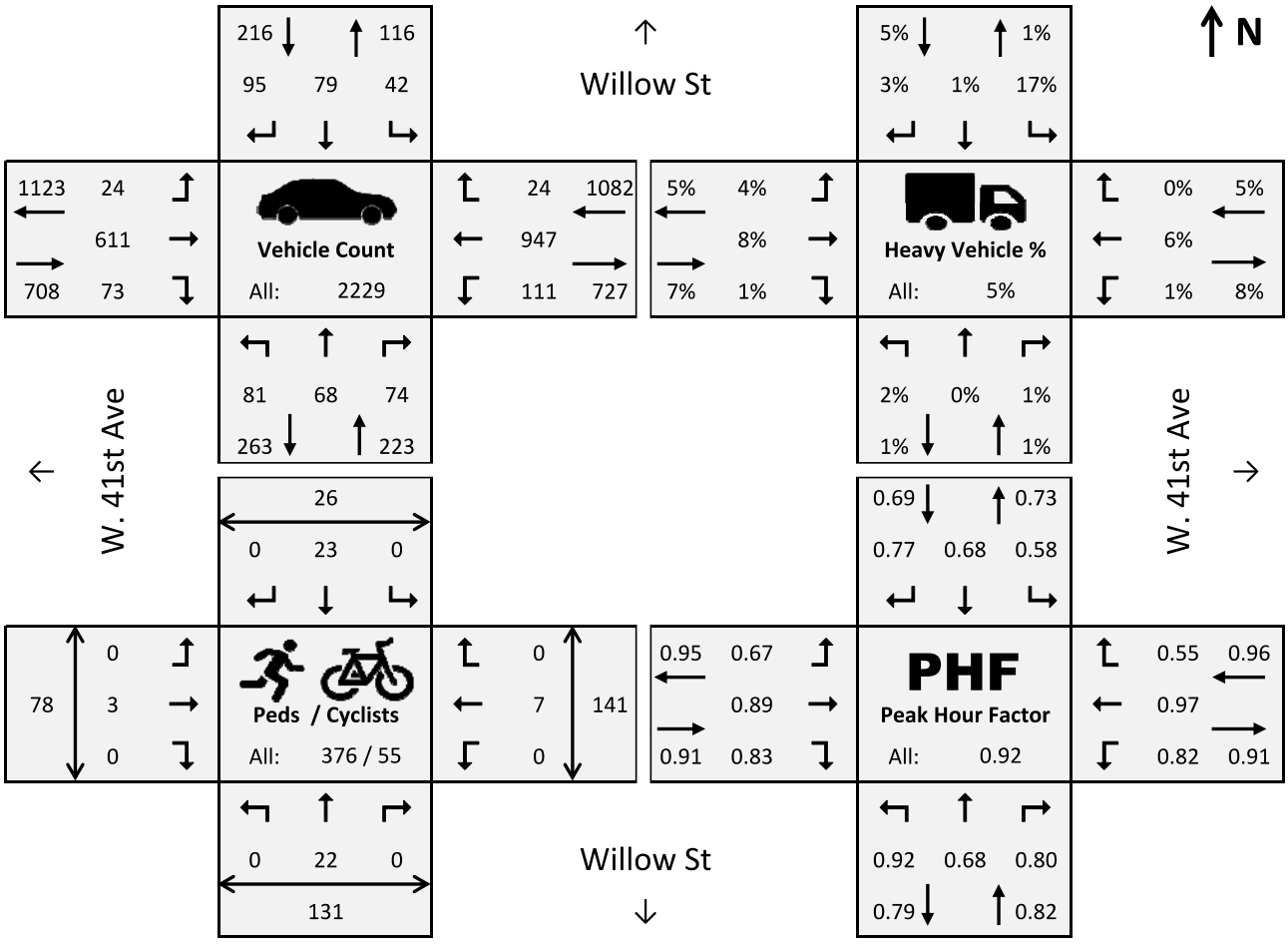
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	31	331	24	41	407	34	44	167	56	50	150	38	32	18	29	20
15:15 - 15:30	40	312	26	50	337	22	43	170	54	61	157	22	52	37	71	33
15:30 - 15:45	29	321	24	42	419	32	29	146	47	56	113	19	22	29	47	24
15:45 - 16:00	30	323	28	43	396	37	40	154	46	45	110	24	16	13	28	9
16:00 - 16:15	31	329	23	28	449	20	31	135	48	43	121	33	20	14	26	12
16:15 - 16:30	34	344	20	39	428	22	29	169	41	50	126	25	16	4	16	8
16:30 - 16:45	30	297	18	58	389	20	28	127	44	56	132	26	10	12	19	13
16:45 - 17:00	29	324	28	49	366	31	31	154	42	47	111	39	9	11	13	11
17:00 - 17:15	23	305	24	45	361	20	34	156	43	44	149	31	15	31	10	28
17:15 - 17:30	30	322	21	36	381	19	33	172	31	53	129	32	15	9	16	7
17:30 - 17:45	22	327	15	37	368	16	30	170	42	54	156	27	22	17	15	12
17:45 - 18:00	36	297	35	56	375	26	27	141	25	57	139	28	21	6	18	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Willow St @ W. 41st Ave – Vancouver, BC

Project#:	04-24-0243	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Jun 10, 2025 (Tue)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:					

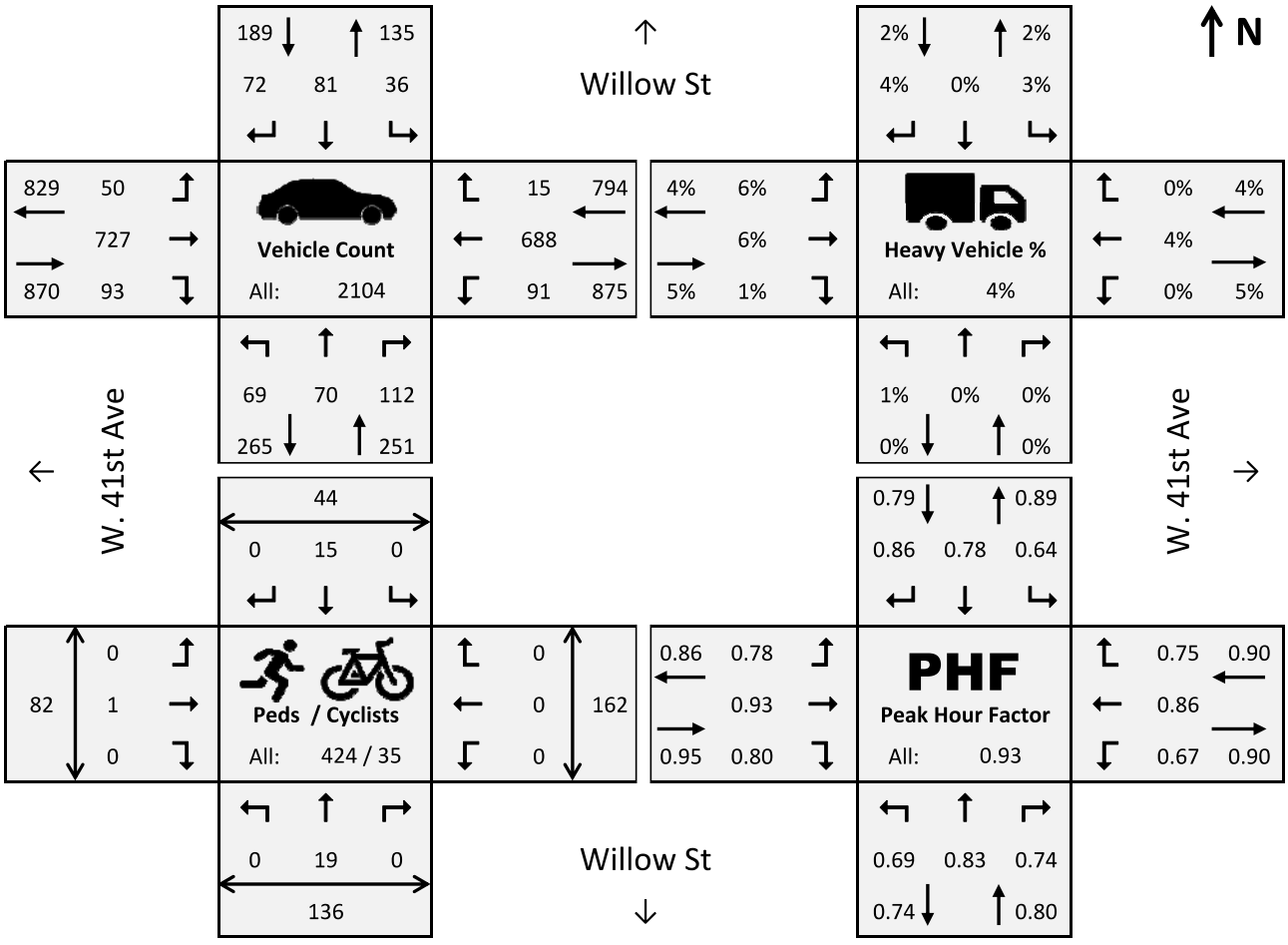
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	3	3	11	0	0	6	10	83	8	18	140	6	6	8	7	3
7:15 - 7:30	4	3	13	0	1	0	4	106	7	16	118	4	4	8	5	7
7:30 - 7:45	8	1	13	2	3	8	5	91	4	10	146	5	1	3	11	3
7:45 - 8:00	14	10	14	0	4	23	2	124	3	14	217	5	1	9	10	3
8:00 - 8:15	20	5	14	2	8	25	2	128	13	16	235	2	9	13	18	15
8:15 - 8:30	22	19	16	12	15	14	7	172	16	29	228	11	4	32	48	24
8:30 - 8:45	20	25	23	18	29	31	9	150	22	32	243	6	11	73	60	30
8:45 - 9:00	19	19	21	10	27	25	6	161	22	34	241	5	2	13	15	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Willow St @ W. 41st Ave – Vancouver, BC

Project#:	04-24-0243	**Weather:**	Sunny	**Analysis Period:**	15:00 - 16:00
Date:	Jun 10, 2025 (Tue)	**Road Cond:**	Dry	**Intersection Peak:**	15:00 - 16:00
Notes:					

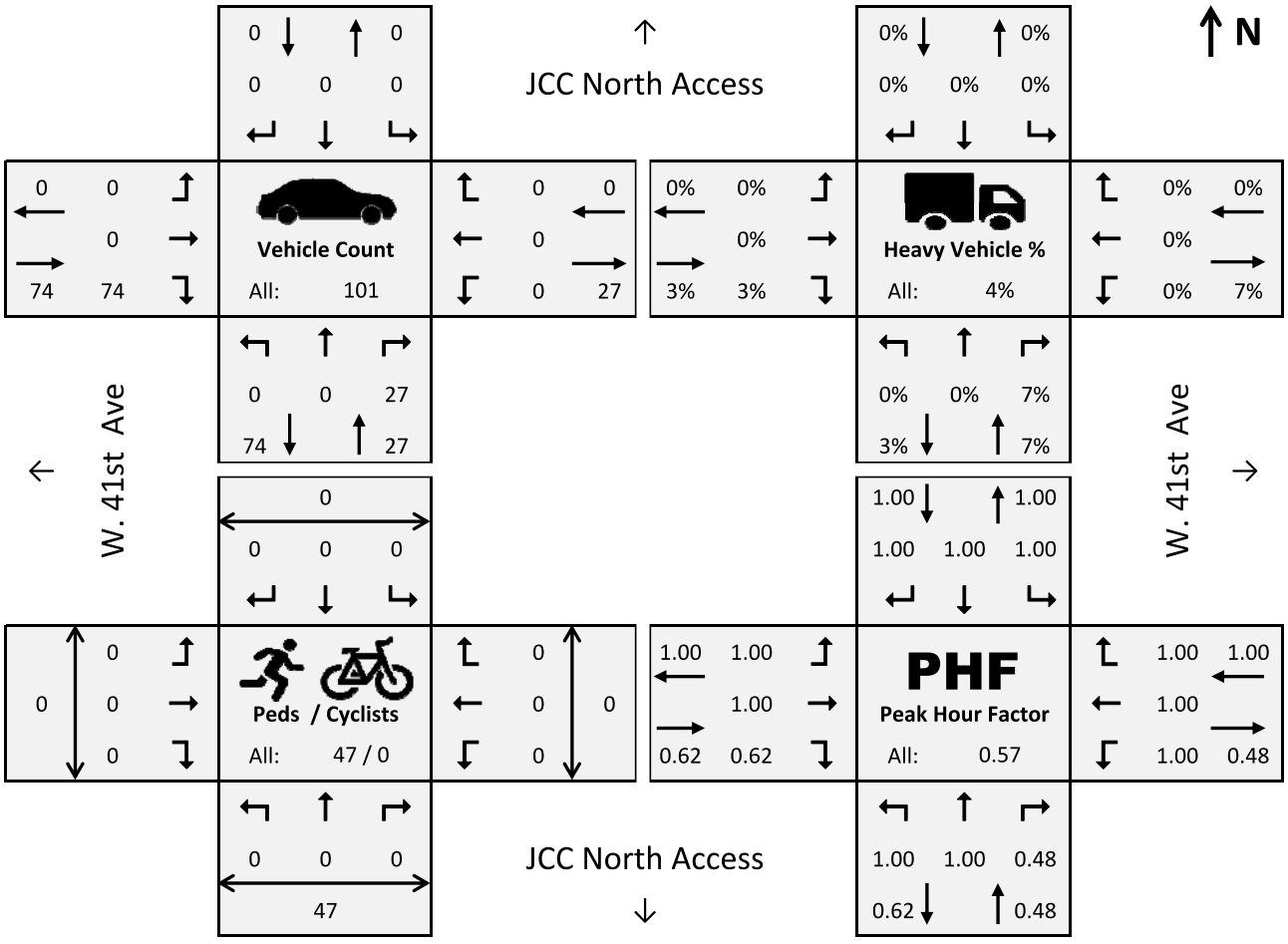
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	18	17	38	8	17	21	10	196	15	10	201	3	13	11	17	24
15:15 - 15:30	17	19	23	14	26	20	16	183	29	34	183	3	14	56	89	33
15:30 - 15:45	25	21	32	12	19	18	9	166	25	20	154	5	11	55	41	9
15:45 - 16:00	9	13	19	2	19	13	15	182	24	27	150	4	6	14	15	16
16:00 - 16:15	17	19	23	1	15	6	17	150	17	18	169	2	9	8	17	14
16:15 - 16:30	17	12	28	3	9	12	7	197	17	22	172	1	9	17	12	1
16:30 - 16:45	14	23	18	4	15	17	6	187	13	20	184	6	6	14	18	2
16:45 - 17:00	22	6	23	2	19	8	9	184	22	22	166	3	7	12	7	9
17:00 - 17:15	26	13	22	4	8	15	12	199	14	14	173	2	8	15	12	9
17:15 - 17:30	12	10	27	2	16	14	9	191	17	22	186	2	7	9	15	12
17:30 - 17:45	19	10	22	1	10	12	4	189	16	18	197	2	9	14	14	7
17:45 - 18:00	13	5	31	5	4	10	15	202	20	20	197	3	10	15	19	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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JCC North Access @ W. 41st Ave – Vancouver, BC

Project#:	04-24-0243	**Weather:**	Sunny	**Analysis Period:**	8:00 - 9:00
Date:	Jun 10, 2025 (Tue)	**Road Cond:**	Dry	**Intersection Peak:**	8:00 - 9:00
Notes:	TM only				

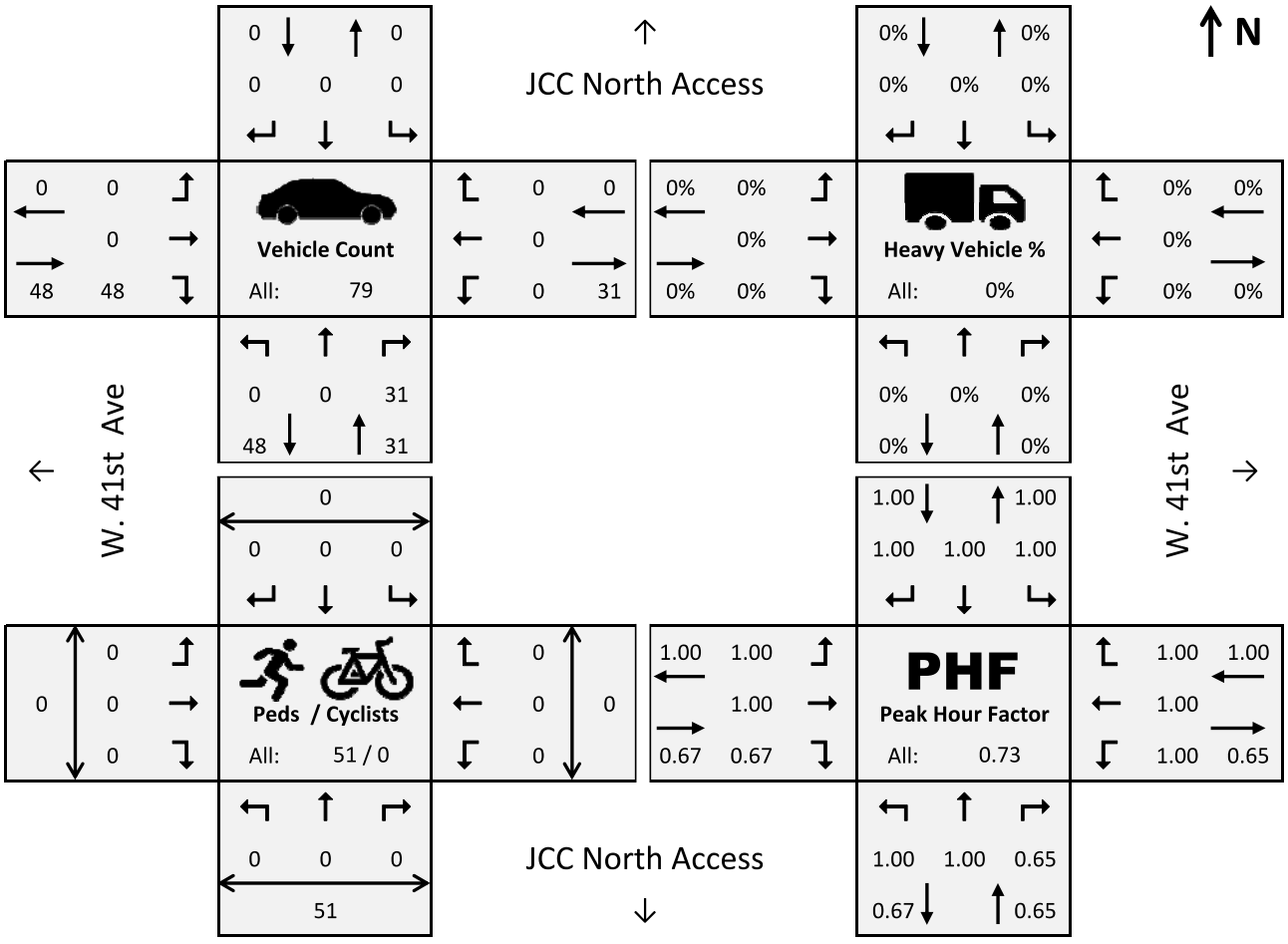
TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
7:00 - 7:15	0	0	0	0	0	0	0	0	2	0	0	0	0	5	0	0
7:15 - 7:30	0	0	1	0	0	0	0	0	2	0	0	0	0	8	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	5	0	0	0	0	9	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	5	0	0
8:00 - 8:15	0	0	1	0	0	0	0	0	7	0	0	0	0	10	0	0
8:15 - 8:30	0	0	4	0	0	0	0	0	14	0	0	0	0	12	0	0
8:30 - 8:45	0	0	14	0	0	0	0	0	30	0	0	0	0	17	0	0
8:45 - 9:00	0	0	8	0	0	0	0	0	23	0	0	0	0	8	0	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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JCC North Access @ W. 41st Ave – Vancouver, BC

Project#:	04-24-0243	**Weather:**	Sunny	**Analysis Period:**	17:00 - 18:00
Date:	Jun 10, 2025 (Tue)	**Road Cond:**	Dry	**Intersection Peak:**	17:00 - 18:00
Notes:	TM only				

TIME INTERVAL	AUTOMOBILE COUNT												PEDESTRIANS			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	N	S	E	W
15:00 - 15:15	0	0	2	0	0	0	0	0	8	0	0	0	0	19	0	0
15:15 - 15:30	0	0	6	0	0	0	0	0	12	0	0	0	0	39	0	0
15:30 - 15:45	0	0	7	0	0	0	0	0	17	0	0	0	0	26	0	0
15:45 - 16:00	0	0	3	0	0	0	0	0	10	0	0	0	0	7	0	0
16:00 - 16:15	0	0	8	0	0	0	0	0	3	0	0	0	0	6	0	0
16:15 - 16:30	0	0	2	0	0	0	0	0	11	0	0	0	0	8	0	0
16:30 - 16:45	0	0	4	0	0	0	0	0	9	0	0	0	0	7	0	0
16:45 - 17:00	0	0	2	0	0	0	0	0	11	0	0	0	0	4	0	0
17:00 - 17:15	0	0	9	0	0	0	0	0	18	0	0	0	0	17	0	0
17:15 - 17:30	0	0	5	0	0	0	0	0	10	0	0	0	0	10	0	0
17:30 - 17:45	0	0	12	0	0	0	0	0	6	0	0	0	0	16	0	0
17:45 - 18:00	0	0	5	0	0	0	0	0	14	0	0	0	0	8	0	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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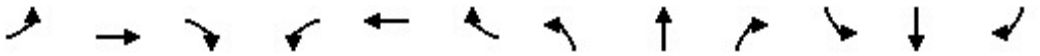


APPENDIX C

Synchro Reports

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	213	162	2134	1278
v/c Ratio	0.68	0.47	0.72	0.46
Control Delay	28.4	26.3	10.4	7.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.4	26.3	10.4	7.0
Queue Length 50th (m)	16.9	16.7	49.3	21.8
Queue Length 95th (m)	36.3	31.5	99.9	45.5
Internal Link Dist (m)	91.7	26.0	24.0	29.6
Turn Bay Length (m)				
Base Capacity (vph)	507	600	2954	2789
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.27	0.72	0.46

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	24	90	17	67	65	28	1900	36	23	1073	80
Future Volume (veh/h)	82	24	90	17	67	65	28	1900	36	23	1073	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.92	0.97		0.91	1.00		0.93	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	1870	1870	1870	1870	1870	1856	1796	1856	1781	1648	1870	1870
Adj Flow Rate, veh/h	89	26	98	18	73	71	30	2065	39	25	1166	87
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	3	7	3	8	17	2	2
Cap, veh/h	206	75	176	79	213	183	74	2921	55	75	2662	196
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	513	290	684	82	828	710	32	4830	91	33	4402	324
Grp Volume(v), veh/h	213	0	0	162	0	0	761	658	715	427	415	436
Grp Sat Flow(s),veh/h/ln	1487	0	0	1621	0	0	1752	1537	1664	1586	1549	1624
Q Serve(g_s), s	2.1	0.0	0.0	0.0	0.0	0.0	0.0	20.4	20.5	0.0	9.9	10.0
Cycle Q Clear(g_c), s	7.7	0.0	0.0	5.5	0.0	0.0	18.9	20.4	20.5	8.0	9.9	10.0
Prop In Lane	0.42		0.46	0.11		0.44	0.04		0.05	0.06		0.20
Lane Grp Cap(c), veh/h	456	0	0	475	0	0	1114	929	1007	1015	937	982
V/C Ratio(X)	0.47	0.00	0.00	0.34	0.00	0.00	0.68	0.71	0.71	0.42	0.44	0.44
Avail Cap(c_a), veh/h	573	0	0	609	0	0	1124	939	1017	1022	946	992
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	21.7	0.0	0.0	21.0	0.0	0.0	9.1	9.4	9.4	7.0	7.3	7.3
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.4	0.0	0.0	1.7	2.5	2.3	0.3	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(50%),veh/ln	3.3	0.0	0.0	2.4	0.0	0.0	8.7	8.0	8.7	3.6	3.7	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	0.0	21.4	0.0	0.0	10.8	11.8	11.7	7.2	7.7	7.7
LnGrp LOS	C	A	A	C	A	A	B	B	B	A	A	A
Approach Vol, veh/h		213			162			2134			1278	
Approach Delay, s/veh		22.5			21.4			11.4			7.5	
Approach LOS		C			C			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.6		21.2		47.6		21.2				
Change Period (Y+Rc), s		6.0		3.5		6.0		3.5				
Max Green Setting (Gmax), s		42.0		23.5		42.0		23.5				
Max Q Clear Time (g_c+I1), s		22.5		9.7		12.0		7.5				
Green Ext Time (p_c), s		19.1		2.5		23.4		1.9				

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	81	2	2	141	8	7
Future Vol, veh/h	81	2	2	141	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	2	2	153	9	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	90	0	246	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	157	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1505	-	742	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1505	-	741	969
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	870	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	832	-	-	1505	-
HCM Lane V/C Ratio	0.02	-	-	0.001	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	79	3	3	144	4	3
Future Vol, veh/h	79	3	3	144	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	86	3	3	157	4	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	89	0	251	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1506	-	738	970
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1506	-	737	970
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	864	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	822	-	-	1506	-
HCM Lane V/C Ratio	0.009	-	-	0.002	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	146	307	222	310
Demand Flow Rate, veh/h	161	314	233	316
Vehicles Circulating, veh/h	344	221	243	301
Vehicles Exiting, veh/h	273	255	262	234
Ped Vol Crossing Leg, #/h	72	72	25	34
Ped Cap Adj	0.990	0.990	0.997	0.995
Approach Delay, s/veh	5.8	6.2	5.6	6.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	161	314	233	316
Cap Entry Lane, veh/h	972	1101	1077	1015
Entry HV Adj Factor	0.909	0.978	0.954	0.981
Flow Entry, veh/h	146	307	222	310
Cap Entry, veh/h	874	1066	1024	991
V/C Ratio	0.167	0.288	0.217	0.313
Control Delay, s/veh	5.8	6.2	5.6	6.8
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	20	1921	30	3	1179
Future Vol, veh/h	3	20	1921	30	3	1179
Conflicting Peds, #/hr	0	0	0	36	36	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	3	7	2	2
Mvmt Flow	3	21	2022	32	3	1241

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2701	1063	0	0	2090	0
Stage 1	2074	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	26	188	-	-	113	-
Stage 1	51	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	23	182	-	-	109	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	54.7	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	96	109	-
HCM Lane V/C Ratio	-	-	0.252	0.029	-
HCM Control Delay (s)	-	-	54.7	39	1.7
HCM Lane LOS	-	-	F	E	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

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	3	28	2	2	18	1	4	11	7	1	3	0
Future Vol, veh/h	3	28	2	2	18	1	4	11	7	1	3	0
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	7	7	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	9	4	2	2	2	2	2	9	2	2	9	2
Mvmt Flow	3	30	2	2	20	1	4	12	8	1	3	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	32	0	0	65	63	38	80	64	24
Stage 1	-	-	-	-	-	-	37	37	-	26	26	-
Stage 2	-	-	-	-	-	-	28	26	-	54	38	-
Critical Hdwy	4.19	-	-	4.12	-	-	7.12	6.59	6.22	7.12	6.59	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.59	-	6.12	5.59	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.59	-	6.12	5.59	-
Follow-up Hdwy	2.281	-	-	2.218	-	-	3.518	4.081	3.318	3.518	4.081	3.318
Pot Cap-1 Maneuver	1549	-	-	1580	-	-	929	814	1034	908	813	1052
Stage 1	-	-	-	-	-	-	978	850	-	992	860	-
Stage 2	-	-	-	-	-	-	989	860	-	958	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1548	-	-	1580	-	-	922	811	1027	883	810	1049
Mov Cap-2 Maneuver	-	-	-	-	-	-	922	811	-	883	810	-
Stage 1	-	-	-	-	-	-	976	848	-	989	858	-
Stage 2	-	-	-	-	-	-	982	858	-	930	848	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.7	9.2	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	890	1548	-	-	1580	-	-	827
HCM Lane V/C Ratio	0.027	0.002	-	-	0.001	-	-	0.005
HCM Control Delay (s)	9.2	7.3	0	-	7.3	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	28	0	4	25	3	1	2	0	5	0	1
Future Vol, veh/h	2	28	0	4	25	3	1	2	0	5	0	1
Conflicting Peds, #/hr	5	0	10	10	0	5	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	2	2	2	4	2	2	4	2	2	2	2
Mvmt Flow	2	30	0	4	27	3	1	2	0	5	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	35	0	0	40	0	0	83	87	40	77	86	36
Stage 1	-	-	-	-	-	-	44	44	-	42	42	-
Stage 2	-	-	-	-	-	-	39	43	-	35	44	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.12	6.54	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.518	4.036	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1563	-	-	1570	-	-	904	799	1031	912	804	1037
Stage 1	-	-	-	-	-	-	970	854	-	972	860	-
Stage 2	-	-	-	-	-	-	976	855	-	981	858	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1555	-	-	890	785	1021	903	790	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	890	785	-	903	790	-
Stage 1	-	-	-	-	-	-	960	845	-	966	853	-
Stage 2	-	-	-	-	-	-	970	848	-	977	849	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.9	9.4	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	817	1556	-	-	1555	-	-	922
HCM Lane V/C Ratio	0.004	0.001	-	-	0.003	-	-	0.007
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	33	25	116	138	6
Future Vol, veh/h	9	33	25	116	138	6
Conflicting Peds, #/hr	20	19	53	0	0	53
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	3	2	17
Mvmt Flow	10	36	27	126	150	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	407	226	210	0	-	0
Stage 1	207	-	-	-	-	-
Stage 2	200	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	600	813	1349	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	530	760	1283	-	-	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1283	-	695	-	-
HCM Lane V/C Ratio	0.021	-	0.066	-	-
HCM Control Delay (s)	7.9	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	76	53	91	20	36	144
Future Vol, veh/h	76	53	91	20	36	144
Conflicting Peds, #/hr	8	28	0	75	75	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	6	3	2	2	2
Mvmt Flow	83	58	99	22	39	157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	428	213	0	0	196	0
Stage 1	185	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.12	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.218	-
Pot Cap-1 Maneuver	562	817	-	-	1377	-
Stage 1	819	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	502	741	-	-	1282	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	579	1282	-
HCM Lane V/C Ratio	-	-	0.242	0.031	-
HCM Control Delay (s)	-	-	13.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

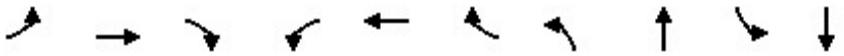
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	11	20	1	10	2	110	9	3	228	2
Future Vol, veh/h	1	0	11	20	1	10	2	110	9	3	228	2
Conflicting Peds, #/hr	0	0	9	9	0	0	100	0	91	91	0	100
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	5	2	2	3	2	2	5	2
Mvmt Flow	1	0	12	22	1	11	2	120	10	3	248	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	490	580	358	490	576	216	350	0	0	221	0	0
Stage 1	355	355	-	220	220	-	-	-	-	-	-	-
Stage 2	135	225	-	270	356	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.55	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.045	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	489	426	686	489	424	824	1209	-	-	1348	-	-
Stage 1	662	630	-	782	716	-	-	-	-	-	-	-
Stage 2	868	718	-	736	624	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	435	353	617	434	351	755	1097	-	-	1235	-	-
Mov Cap-2 Maneuver	435	353	-	434	351	-	-	-	-	-	-	-
Stage 1	600	570	-	715	654	-	-	-	-	-	-	-
Stage 2	852	656	-	714	565	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	12.7	0.1	0.1
HCM LOS	B	B		

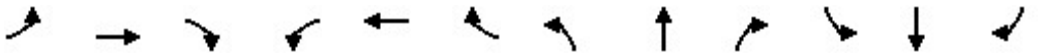
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	596	499	1235	-	-
HCM Lane V/C Ratio	0.002	-	-	0.022	0.068	0.003	-	-
HCM Control Delay (s)	8.3	0	-	11.2	12.7	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	550	168	208	821	150	198	1811	154	1003
v/c Ratio	0.83	0.66	0.36	0.70	0.86	0.30	0.67	0.88	0.67	0.46
Control Delay	61.3	48.0	8.0	40.5	54.5	7.0	30.2	41.6	39.5	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	48.0	8.0	40.5	54.5	7.0	30.2	41.6	39.5	27.1
Queue Length 50th (m)	27.5	66.4	0.0	35.6	103.2	0.0	25.5	154.8	22.0	66.1
Queue Length 95th (m)	#68.3	90.0	17.4	57.9	134.8	15.8	#46.5	#211.3	46.2	83.2
Internal Link Dist (m)		92.5			127.1			79.5		31.0
Turn Bay Length (m)	45.0			65.0		100.0	75.0			
Base Capacity (vph)	200	991	518	312	1136	575	296	2069	308	2394
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.55	0.32	0.67	0.72	0.26	0.67	0.88	0.50	0.42

Intersection Summary

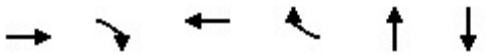
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	528	161	200	788	144	190	1652	86	148	908	55
Future Volume (veh/h)	159	528	161	200	788	144	190	1652	86	148	908	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.91	0.99		0.95	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	1870	1796	1870	1811	1811	1841	1826	1870	1663	1870	1870	1870
Adj Flow Rate, veh/h	166	550	168	208	821	150	198	1721	90	154	946	57
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	7	2	6	6	4	5	2	16	2	2	2
Cap, veh/h	239	898	380	323	984	404	343	2069	108	210	1994	120
Arrive On Green	0.08	0.26	0.26	0.10	0.29	0.29	0.08	0.42	0.42	0.07	0.41	0.41
Sat Flow, veh/h	1781	3413	1442	1725	3441	1414	1739	4954	259	1781	4909	295
Grp Volume(v), veh/h	166	550	168	208	821	150	198	1182	629	154	655	348
Grp Sat Flow(s),veh/h/ln	1781	1706	1442	1725	1721	1414	1739	1702	1809	1781	1702	1800
Q Serve(g_s), s	8.3	17.5	12.0	10.6	27.6	10.5	8.1	38.2	38.3	6.1	17.5	17.6
Cycle Q Clear(g_c), s	8.3	17.5	12.0	10.6	27.6	10.5	8.1	38.2	38.3	6.1	17.5	17.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.16
Lane Grp Cap(c), veh/h	239	898	380	323	984	404	343	1422	756	210	1382	731
V/C Ratio(X)	0.70	0.61	0.44	0.64	0.83	0.37	0.58	0.83	0.83	0.73	0.47	0.48
Avail Cap(c_a), veh/h	239	1023	432	353	1031	424	343	1434	762	346	1434	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	40.0	37.9	29.5	41.3	35.2	20.3	32.1	32.1	27.6	27.0	27.0
Incr Delay (d2), s/veh	8.5	0.9	0.8	3.5	5.8	0.6	2.4	4.3	7.8	4.9	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.0	4.7	5.1	13.4	4.0	3.9	17.9	19.8	3.1	7.8	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	40.8	38.7	33.0	47.1	35.8	22.7	36.3	39.9	32.5	27.2	27.5
LnGrp LOS	D	D	D	C	D	D	C	D	D	C	C	C
Approach Vol, veh/h		884			1179			2009			1157	
Approach Delay, s/veh		40.5			43.2			36.1			28.0	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	40.3	12.6	56.6	16.8	37.5	14.0	55.1
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	37.0	18.0	52.0	15.0	37.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	10.3	29.6	8.1	40.3	12.6	19.5	10.1	19.6
Green Ext Time (p_c), s	0.0	5.7	0.5	11.2	0.2	8.8	0.0	19.9

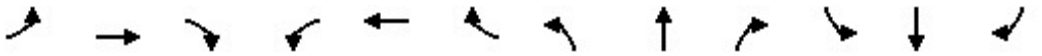
Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D



Lane Group	EBT	EBR	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	690	79	1150	26	247	282
v/c Ratio	0.46	0.13	0.88	0.03	0.52	0.53
Control Delay	11.6	3.6	24.3	4.1	18.8	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	3.6	24.3	4.1	18.8	18.1
Queue Length 50th (m)	26.4	0.5	60.3	0.1	18.8	21.3
Queue Length 95th (m)	38.9	6.0	#102.5	3.2	38.1	41.4
Internal Link Dist (m)	129.9		88.6		78.2	31.0
Turn Bay Length (m)		15.0		15.0		
Base Capacity (vph)	1557	657	1370	788	518	590
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.12	0.84	0.03	0.48	0.48

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	611	73	111	947	24	81	73	74	42	122	95
Future Volume (veh/h)	24	611	73	111	947	24	81	73	74	42	122	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	0.98		0.85	0.93		0.85	0.92		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	1841	1781	1870	1870	1811	1870	1870	1870	1870	1648	1870	1856
Adj Flow Rate, veh/h	26	664	79	121	1029	26	88	79	80	46	133	103
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	8	2	2	6	2	2	2	2	17	2	3
Cap, veh/h	77	1422	666	176	1246	664	219	192	160	117	284	193
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	33	2871	1345	213	2516	1341	420	563	471	152	834	567
Grp Volume(v), veh/h	326	364	79	501	649	26	247	0	0	282	0	0
Grp Sat Flow(s),veh/h/ln	1364	1540	1345	1163	1566	1341	1454	0	0	1553	0	0
Q Serve(g_s), s	1.7	10.0	2.0	15.5	22.8	0.6	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	24.5	10.0	2.0	25.5	22.8	0.6	7.5	0.0	0.0	8.8	0.0	0.0
Prop In Lane	0.08		1.00	0.24		1.00	0.36		0.32	0.16		0.37
Lane Grp Cap(c), veh/h	737	763	666	646	775	664	571	0	0	594	0	0
V/C Ratio(X)	0.44	0.48	0.12	0.78	0.84	0.04	0.43	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	747	773	675	655	786	673	588	0	0	613	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	10.6	8.6	14.8	13.9	8.3	16.3	0.0	0.0	16.8	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.5	0.1	5.7	7.8	0.0	0.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.8	0.7	8.1	10.3	0.2	3.1	0.0	0.0	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	11.1	8.7	20.6	21.7	8.3	16.9	0.0	0.0	17.4	0.0	0.0
LnGrp LOS	B	B	A	C	C	A	B	A	A	B	A	A
Approach Vol, veh/h		769			1176			247			282	
Approach Delay, s/veh		10.7			20.9			16.9			17.4	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.6		26.2		37.6		26.2				
Change Period (Y+Rc), s		6.0		4.5		6.0		4.5				
Max Green Setting (Gmax), s		32.0		22.5		32.0		22.5				
Max Q Clear Time (g_c+I1), s		26.5		10.8		27.5		9.5				
Green Ext Time (p_c), s		3.9		3.1		4.1		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

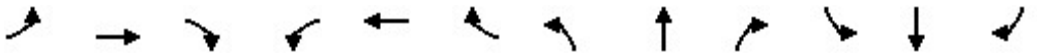
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	688	74	0	1123	0	27
Future Vol, veh/h	688	74	0	1123	0	27
Conflicting Peds, #/hr	0	47	47	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	7
Mvmt Flow	748	80	0	1221	0	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	421
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.37
Pot Cap-1 Maneuver	-	-	0	-	0	567
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	542
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	542	-	-	-
HCM Lane V/C Ratio	0.054	-	-	-
HCM Control Delay (s)	12	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	24	90	17	67	65	28	1900	36	23	1073	80
Future Volume (Veh/h)	82	24	90	17	67	65	28	1900	36	23	1073	80
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	89	26	98	18	73	71	30	2065	39	25	1166	87
Pedestrians		30			59			37			42	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		3			6			3			4	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2187	3512	499	2790	3536	809	1283			2163		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2187	3512	499	2790	3536	809	1283			2163		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.2			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.4		
p0 queue free %	0	0	80	0	0	76	94			87		
cM capacity (veh/h)	0	5	485	0	4	292	496			187		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	213	162	546	1032	555	316	583	378
Volume Left	89	18	30	0	0	25	0	0
Volume Right	98	71	0	0	39	0	0	87
cSH	0	0	496	1700	1700	187	1700	1700
Volume to Capacity	Err	Err	0.06	0.61	0.33	0.13	0.34	0.22
Queue Length 95th (m)	Err	Err	1.5	0.0	0.0	3.4	0.0	0.0
Control Delay (s)	Err	Err	1.7	0.0	0.0	6.2	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	Err	Err	0.4			1.5		
Approach LOS	F	F						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	92.9%	ICU Level of Service	F	
Analysis Period (min)	15			



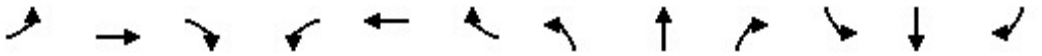
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	8	1917	5	1	1189
Future Volume (Veh/h)	0	8	1917	5	1	1189
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	8	2018	5	1	1252
Pedestrians	43					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			55			
pX, platoon unblocked	0.67	0.67			0.67	
vC, conflicting volume	2378	718			2066	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1337	0			871	
tC, single (s)	6.8	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	93	678			495	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	8	807	807	409	180	358	358	358
Volume Left	0	0	0	0	1	0	0	0
Volume Right	8	0	0	5	0	0	0	0
cSH	678	1700	1700	1700	495	1700	1700	1700
Volume to Capacity	0.01	0.47	0.47	0.24	0.00	0.21	0.21	0.21
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Lane LOS	B				A			
Approach Delay (s)	10.4	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	171	76	1522	1963
v/c Ratio	0.56	0.23	0.51	0.69
Control Delay	28.9	17.8	7.4	9.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.9	17.8	7.4	9.6
Queue Length 50th (m)	17.5	5.5	27.2	42.2
Queue Length 95th (m)	33.4	14.5	57.3	89.1
Internal Link Dist (m)	91.7	26.0	76.0	29.6
Turn Bay Length (m)				
Base Capacity (vph)	543	572	2958	2855
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.31	0.13	0.51	0.69

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	40	61	19	18	35	18	1400	28	40	1761	64
Future Volume (veh/h)	62	40	61	19	18	35	18	1400	28	40	1761	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.93	0.98		0.94	1.00		0.94	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	1870	1870	1870	1870	1870	1811	1811	1870	1870	1826	1870	1870
Adj Flow Rate, veh/h	65	42	64	20	19	37	19	1474	29	42	1854	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	6	6	2	2	5	2	2
Cap, veh/h	175	115	128	129	121	171	70	3050	60	91	2922	105
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	441	516	572	264	543	766	21	4837	94	52	4634	166
Grp Volume(v), veh/h	171	0	0	76	0	0	531	476	515	672	622	669
Grp Sat Flow(s),veh/h/ln	1529	0	0	1574	0	0	1725	1549	1678	1644	1549	1660
Q Serve(g_s), s	2.9	0.0	0.0	0.0	0.0	0.0	0.0	10.7	10.7	0.0	16.2	16.2
Cycle Q Clear(g_c), s	6.1	0.0	0.0	2.4	0.0	0.0	9.5	10.7	10.7	13.5	16.2	16.2
Prop In Lane	0.38		0.37	0.26		0.49	0.04		0.06	0.06		0.10
Lane Grp Cap(c), veh/h	418	0	0	422	0	0	1145	977	1058	1095	977	1047
V/C Ratio(X)	0.41	0.00	0.00	0.18	0.00	0.00	0.46	0.49	0.49	0.61	0.64	0.64
Avail Cap(c_a), veh/h	621	0	0	626	0	0	1167	999	1082	1116	999	1070
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	21.9	0.0	0.0	20.6	0.0	0.0	6.2	6.4	6.4	6.9	7.4	7.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.2	0.0	0.0	0.3	0.4	0.3	1.0	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	1.0	0.0	0.0	4.2	3.9	4.2	6.1	6.1	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	0.0	20.8	0.0	0.0	6.5	6.8	6.8	7.9	8.7	8.7
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		171			76			1522			1963	
Approach Delay, s/veh		22.5			20.8			6.7			8.4	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.1		18.1		47.1		18.1				
Change Period (Y+Rc), s		6.0		3.5		6.0		3.5				
Max Green Setting (Gmax), s		42.0		23.5		42.0		23.5				
Max Q Clear Time (g_c+I1), s		12.7		8.1		18.2		4.4				
Green Ext Time (p_c), s		25.3		2.0		22.8		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	5	2	69	3	5
Future Vol, veh/h	103	5	2	69	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	5	2	75	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	194	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	79	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1471	-	795	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	944	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	794	937
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	943	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	878	-	-	1471	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	106	3	1	75	1	2
Future Vol, veh/h	106	3	1	75	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	3	1	82	1	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	118	0	201	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	84	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1470	-	788	935
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1470	-	787	935
Mov Cap-2 Maneuver	-	-	-	-	787	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	938	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	880	-	-	1470	-
HCM Lane V/C Ratio	0.004	-	-	0.001	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Intersection Delay, s/veh	3.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	118	68	78	149
Demand Flow Rate, veh/h	120	69	84	152
Vehicles Circulating, veh/h	150	74	143	83
Vehicles Exiting, veh/h	85	153	127	60
Ped Vol Crossing Leg, #/h	137	40	43	38
Ped Cap Adj	0.968	0.995	0.994	0.995
Approach Delay, s/veh	4.1	3.3	3.9	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	120	69	84	152
Cap Entry Lane, veh/h	1184	1280	1193	1268
Entry HV Adj Factor	0.984	0.990	0.925	0.982
Flow Entry, veh/h	118	68	78	149
Cap Entry, veh/h	1127	1260	1097	1238
V/C Ratio	0.105	0.054	0.071	0.121
Control Delay, s/veh	4.1	3.3	3.9	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	21	1450	31	9	1858
Future Vol, veh/h	0	21	1450	31	9	1858
Conflicting Peds, #/hr	0	1	0	67	67	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	14	2	2	2	2
Mvmt Flow	0	23	1559	33	10	1998

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2462	864	0	0	1659	0
Stage 1	1643	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Critical Hdwy	5.74	7.38	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	4.04	-	-	3.12	-
Pot Cap-1 Maneuver	52	237	-	-	186	-
Stage 1	96	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	49	222	-	-	174	-
Mov Cap-2 Maneuver	49	-	-	-	-	-
Stage 1	90	-	-	-	-	-
Stage 2	357	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	222	174	-
HCM Lane V/C Ratio	-	-	0.102	0.056	-
HCM Control Delay (s)	-	-	23	26.9	0
HCM Lane LOS	-	-	C	D	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	4	34	2	2	20	2	1	2	2	0	6	1
Future Vol, veh/h	4	34	2	2	20	2	1	2	2	0	6	1
Conflicting Peds, #/hr	0	0	2	2	0	0	26	0	3	3	0	26
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	12	12	2	2	2	2	2	2	2
Mvmt Flow	4	37	2	2	22	2	1	2	2	0	7	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	41	0	0	105	76	43	78	76	49
Stage 1	-	-	-	-	-	-	48	48	-	27	27	-
Stage 2	-	-	-	-	-	-	57	28	-	51	49	-
Critical Hdwy	4.12	-	-	4.22	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.308	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1506	-	-	875	814	1027	911	814	1020
Stage 1	-	-	-	-	-	-	965	855	-	990	873	-
Stage 2	-	-	-	-	-	-	955	872	-	962	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1503	-	-	844	809	1022	902	809	996
Mov Cap-2 Maneuver	-	-	-	-	-	-	844	809	-	902	809	-
Stage 1	-	-	-	-	-	-	960	851	-	987	872	-
Stage 2	-	-	-	-	-	-	923	871	-	952	850	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.6	9.1	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	891	1591	-	-	1503	-	-	831
HCM Lane V/C Ratio	0.006	0.003	-	-	0.001	-	-	0.009
HCM Control Delay (s)	9.1	7.3	0	-	7.4	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	34	1	1	12	3	0	0	1	1	2	1
Future Vol, veh/h	0	34	1	1	12	3	0	0	1	1	2	1
Conflicting Peds, #/hr	3	0	8	8	0	3	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	12	2	2	2	2	12	2	2
Mvmt Flow	0	49	1	1	17	4	0	0	1	1	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	58	0	0	81	84	63	79	82	22
Stage 1	-	-	-	-	-	-	58	58	-	24	24	-
Stage 2	-	-	-	-	-	-	23	26	-	55	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.22	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.22	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.22	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.608	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1546	-	-	907	806	1002	886	808	1055
Stage 1	-	-	-	-	-	-	954	847	-	969	875	-
Stage 2	-	-	-	-	-	-	995	874	-	933	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1587	-	-	1535	-	-	896	797	990	877	799	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	896	797	-	877	799	-
Stage 1	-	-	-	-	-	-	947	841	-	966	872	-
Stage 2	-	-	-	-	-	-	989	871	-	927	841	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	8.6	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	990	1587	-	-	1535	-	-	871
HCM Lane V/C Ratio	0.001	-	-	-	0.001	-	-	0.007
HCM Control Delay (s)	8.6	0	-	-	7.3	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	34	18	53	119	3
Future Vol, veh/h	16	34	18	53	119	3
Conflicting Peds, #/hr	6	4	112	0	0	112
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	2	12	8	3	12
Mvmt Flow	17	37	20	58	129	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	347	247	244	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.52	6.22	4.22	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.318	2.308	-	-	-
Pot Cap-1 Maneuver	630	792	1266	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	498	707	1135	-	-	-
Mov Cap-2 Maneuver	498	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	804	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1135	-	623	-	-
HCM Lane V/C Ratio	0.017	-	0.087	-	-
HCM Control Delay (s)	8.2	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	16	53	52	31	119
Future Vol, veh/h	41	16	53	52	31	119
Conflicting Peds, #/hr	6	28	0	53	53	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	19	2	4	2	3
Mvmt Flow	45	17	58	57	34	129

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	343	168	0	0	168	0
Stage 1	140	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.5	6.39	-	-	4.12	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.471	-	-	2.218	-
Pot Cap-1 Maneuver	637	834	-	-	1410	-
Stage 1	868	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	586	773	-	-	1341	-
Mov Cap-2 Maneuver	586	-	-	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	629	1341	-
HCM Lane V/C Ratio	-	-	0.099	0.025	-
HCM Control Delay (s)	-	-	11.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

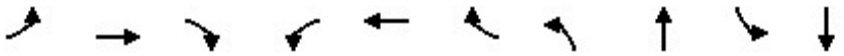
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	0	2	11	0	3	7	104	16	6	174	1
Future Vol, veh/h	1	0	2	11	0	3	7	104	16	6	174	1
Conflicting Peds, #/hr	5	0	14	14	0	5	144	0	91	91	0	144
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	6	2
Mvmt Flow	1	0	2	12	0	3	8	113	17	7	189	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	492	585	348	448	577	218	334	0	0	221	0	0
Stage 1	348	348	-	229	229	-	-	-	-	-	-	-
Stage 2	144	237	-	219	348	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	487	423	695	521	427	822	1225	-	-	1348	-	-
Stage 1	668	634	-	774	715	-	-	-	-	-	-	-
Stage 2	859	709	-	783	634	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	414	331	595	464	334	749	1062	-	-	1235	-	-
Mov Cap-2 Maneuver	414	331	-	464	334	-	-	-	-	-	-	-
Stage 1	574	547	-	704	650	-	-	-	-	-	-	-
Stage 2	845	644	-	765	547	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	12.4	0.5	0.3
HCM LOS	B	B		

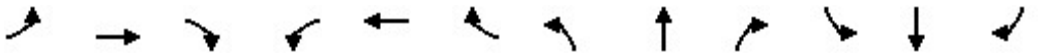
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1062	-	-	519	505	1235	-	-
HCM Lane V/C Ratio	0.007	-	-	0.006	0.03	0.005	-	-
HCM Control Delay (s)	8.4	0	-	12	12.4	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	164	671	214	223	558	108	137	1462	185	1773
v/c Ratio	0.58	0.78	0.48	0.82	0.56	0.25	0.72	0.75	0.76	0.83
Control Delay	36.6	52.9	14.9	52.3	42.2	7.8	48.4	37.6	49.3	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	52.9	14.9	52.3	42.2	7.8	48.4	37.6	49.3	37.2
Queue Length 50th (m)	28.0	86.3	9.8	39.6	65.2	0.0	18.8	119.2	30.8	147.0
Queue Length 95th (m)	46.0	111.5	33.6	#80.6	86.2	13.7	#53.6	148.8	58.5	175.2
Internal Link Dist (m)		92.5			119.0			79.5		31.0
Turn Bay Length (m)	45.0			65.0		100.0	75.0			
Base Capacity (vph)	285	1008	494	280	1156	487	196	2038	298	2379
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.67	0.43	0.80	0.48	0.22	0.70	0.72	0.62	0.75

Intersection Summary

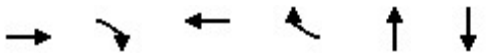
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	637	203	212	530	103	130	1287	102	176	1559	125
Future Volume (veh/h)	156	637	203	212	530	103	130	1287	102	176	1559	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.85	0.99		0.86	1.00		0.86	1.00		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1826	1841	1841	1841	1870	1841	1870	1767	1826	1870	1870
Adj Flow Rate, veh/h	164	671	214	223	558	108	137	1355	107	185	1641	132
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	5	4	4	4	2	4	2	9	5	2	2
Cap, veh/h	318	910	348	300	1012	396	198	1911	151	258	2002	161
Arrive On Green	0.08	0.26	0.26	0.11	0.29	0.29	0.06	0.40	0.40	0.08	0.42	0.42
Sat Flow, veh/h	1781	3469	1325	1753	3497	1368	1753	4759	376	1739	4754	381
Grp Volume(v), veh/h	164	671	214	223	558	108	137	969	493	185	1174	599
Grp Sat Flow(s),veh/h/ln	1781	1735	1325	1753	1749	1368	1753	1702	1730	1739	1702	1731
Q Serve(g_s), s	8.2	21.8	17.5	11.1	16.6	7.5	5.6	29.3	29.3	7.5	37.5	37.7
Cycle Q Clear(g_c), s	8.2	21.8	17.5	11.1	16.6	7.5	5.6	29.3	29.3	7.5	37.5	37.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.22
Lane Grp Cap(c), veh/h	318	910	348	300	1012	396	198	1367	695	258	1434	729
V/C Ratio(X)	0.52	0.74	0.62	0.74	0.55	0.27	0.69	0.71	0.71	0.72	0.82	0.82
Avail Cap(c_a), veh/h	318	1042	398	325	1051	411	231	1438	731	370	1438	731
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	30.1	41.5	40.0	30.4	37.0	33.8	27.6	30.8	30.8	25.1	31.5	31.5
Incr Delay (d2), s/veh	1.4	2.4	2.3	8.2	0.6	0.4	7.0	1.6	3.0	3.7	3.9	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(50%),veh/ln	4.0	10.3	6.4	5.8	7.8	2.8	2.9	13.4	13.9	3.7	17.5	18.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	43.9	42.2	38.6	37.6	34.1	34.6	32.4	33.8	28.8	35.3	39.0
LnGrp LOS	C	D	D	D	D	C	C	C	C	C	D	D
Approach Vol, veh/h		1049			889			1599			1958	
Approach Delay, s/veh		41.7			37.4			33.0			35.8	
Approach LOS		D			D			C			D	

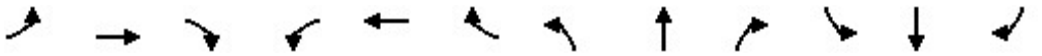
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	40.6	14.1	54.4	17.3	37.3	11.7	56.9
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	37.0	18.0	52.0	15.0	37.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	10.2	18.6	9.5	31.3	13.1	23.8	7.6	39.7
Green Ext Time (p_c), s	0.0	8.8	0.6	18.1	0.2	8.5	0.1	11.8

Intersection Summary	
HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D



Lane Group	EBT	EBR	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	836	100	838	16	269	203
v/c Ratio	0.64	0.17	0.74	0.02	0.50	0.36
Control Delay	13.9	4.4	16.7	3.0	15.5	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	4.4	16.7	3.0	15.5	12.9
Queue Length 50th (m)	29.3	1.3	31.4	0.0	14.5	10.0
Queue Length 95th (m)	50.1	8.0	55.2	2.0	38.9	27.7
Internal Link Dist (m)	138.0		88.6		78.2	31.0
Turn Bay Length (m)		15.0		15.0		
Base Capacity (vph)	1757	743	1523	882	630	676
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.13	0.55	0.02	0.43	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	727	93	91	688	15	69	70	112	36	81	72
Future Volume (veh/h)	50	727	93	91	688	15	69	70	112	36	81	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.84	0.99		0.86	0.90		0.84	0.92		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	1811	1811	1870	1870	1841	1870	1870	1870	1870	1856	1870	1841
Adj Flow Rate, veh/h	54	782	100	98	740	16	74	75	120	39	87	77
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, %	6	6	2	2	4	2	2	2	2	3	2	4
Cap, veh/h	112	1347	635	171	1105	649	177	177	225	135	269	204
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	95	2823	1331	198	2315	1359	291	501	638	185	764	580
Grp Volume(v), veh/h	391	445	100	318	520	16	269	0	0	203	0	0
Grp Sat Flow(s),veh/h/ln	1353	1566	1331	921	1591	1359	1430	0	0	1529	0	0
Q Serve(g_s), s	1.8	12.8	2.6	7.5	15.7	0.4	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.4	12.8	2.6	20.3	15.7	0.4	8.5	0.0	0.0	5.7	0.0	0.0
Prop In Lane	0.14		1.00	0.31		1.00	0.28		0.45	0.19		0.38
Lane Grp Cap(c), veh/h	712	747	635	516	759	649	579	0	0	609	0	0
V/C Ratio(X)	0.55	0.60	0.16	0.62	0.68	0.02	0.46	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	773	812	690	563	825	705	595	0	0	626	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	11.8	9.1	13.2	12.5	8.5	15.6	0.0	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.0	0.1	1.8	2.1	0.0	0.6	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(50%),veh/ln	4.0	5.1	0.9	4.4	6.5	0.1	3.3	0.0	0.0	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	12.8	9.2	15.0	14.7	8.5	16.2	0.0	0.0	15.1	0.0	0.0
LnGrp LOS	B	B	A	B	B	A	B	A	A	B	A	A
Approach Vol, veh/h		936			854			269			203	
Approach Delay, s/veh		12.0			14.7			16.2			15.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	35.5	26.3	35.5	26.3
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	32.0	22.5	32.0	22.5
Max Q Clear Time (g_c+I1), s	19.4	7.7	22.3	10.5
Green Ext Time (p_c), s	9.0	2.5	7.2	3.1

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

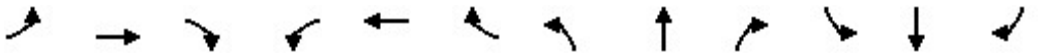
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	867	48	0	829	0	31
Future Vol, veh/h	867	48	0	829	0	31
Conflicting Peds, #/hr	0	91	91	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	942	52	0	901	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	562
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	470
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	430
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	430	-	-	-
HCM Lane V/C Ratio	0.078	-	-	-
HCM Control Delay (s)	14.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	40	61	19	18	35	18	1400	28	40	1761	64
Future Volume (Veh/h)	62	40	61	19	18	35	18	1400	28	40	1761	64
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	65	42	64	20	19	37	19	1474	29	42	1854	67
Pedestrians		40			75			26			26	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		4			7			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2613	3628	718	2414	3646	607	1961			1578		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2613	3628	718	2414	3646	607	1961			1578		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.3			2.2		
p0 queue free %	0	0	82	0	0	91	93			89		
cM capacity (veh/h)	0	4	349	0	4	390	268			371		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	171	76	388	737	398	506	927	530
Volume Left	65	20	19	0	0	42	0	0
Volume Right	64	37	0	0	29	0	0	67
cSH	0	0	268	1700	1700	371	1700	1700
Volume to Capacity	Err	Err	0.07	0.43	0.23	0.11	0.55	0.31
Queue Length 95th (m)	Err	Err	1.7	0.0	0.0	2.9	0.0	0.0
Control Delay (s)	Err	Err	2.6	0.0	0.0	3.6	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	Err	Err	0.7			0.9		
Approach LOS	F	F						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	86.2%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	3	1484	5	0	1865
Future Volume (Veh/h)	0	3	1484	5	0	1865
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	3	1562	5	0	1963
Pedestrians	69					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	6					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			55			
pX, platoon unblocked	0.75	0.75			0.75	
vC, conflicting volume	2124	592			1636	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1345	0			697	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	101	764			631	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	3	625	625	317	280	561	561	561
Volume Left	0	0	0	0	0	0	0	0
Volume Right	3	0	0	5	0	0	0	0
cSH	764	1700	1700	1700	631	1700	1700	1700
Volume to Capacity	0.00	0.37	0.37	0.19	0.00	0.33	0.33	0.33
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.7	0.0			0.0			
Approach LOS	A							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	205	195	2239	1459
v/c Ratio	0.69	0.60	0.77	0.52
Control Delay	31.8	30.9	11.7	7.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.8	30.9	11.7	7.7
Queue Length 50th (m)	18.7	21.0	56.9	27.8
Queue Length 95th (m)	37.9	38.4	110.5	55.0
Internal Link Dist (m)	91.7	26.0	24.0	29.6
Turn Bay Length (m)				
Base Capacity (vph)	478	545	2914	2786
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.36	0.77	0.52

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	25	86	47	71	62	27	1985	48	22	1242	78
Future Volume (veh/h)	78	25	86	47	71	62	27	1985	48	22	1242	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.92	0.97		0.91	1.00		0.93	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	1870	1870	1870	1870	1870	1856	1796	1856	1781	1648	1870	1870
Adj Flow Rate, veh/h	85	27	93	51	77	67	29	2158	52	24	1350	85
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	3	7	3	8	17	2	2
Cap, veh/h	205	79	174	138	194	139	72	2917	70	72	2728	170
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	518	311	688	284	766	550	29	4791	115	28	4481	279
Grp Volume(v), veh/h	205	0	0	195	0	0	798	691	750	490	472	498
Grp Sat Flow(s),veh/h/ln	1516	0	0	1600	0	0	1740	1537	1658	1604	1549	1635
Q Serve(g_s), s	0.4	0.0	0.0	0.0	0.0	0.0	0.0	21.9	22.1	0.0	11.7	11.7
Cycle Q Clear(g_c), s	6.9	0.0	0.0	6.5	0.0	0.0	20.2	21.9	22.1	9.5	11.7	11.7
Prop In Lane	0.41		0.45	0.26		0.34	0.04		0.07	0.05		0.17
Lane Grp Cap(c), veh/h	457	0	0	470	0	0	1114	935	1009	1031	943	995
V/C Ratio(X)	0.45	0.00	0.00	0.41	0.00	0.00	0.72	0.74	0.74	0.47	0.50	0.50
Avail Cap(c_a), veh/h	582	0	0	607	0	0	1120	941	1016	1036	949	1002
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	21.8	0.0	0.0	21.6	0.0	0.0	9.2	9.5	9.6	7.1	7.5	7.5
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.0	2.2	3.1	3.0	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	3.0	0.0	0.0	9.5	8.7	9.5	4.3	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	0.0	22.2	0.0	0.0	11.4	12.6	12.5	7.4	8.0	7.9
LnGrp LOS	C	A	A	C	A	A	B	B	B	A	A	A
Approach Vol, veh/h		205			195			2239			1459	
Approach Delay, s/veh		22.4			22.2			12.2			7.8	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	47.7		20.8		47.7		20.8					
Change Period (Y+Rc), s	6.0		3.5		6.0		3.5					
Max Green Setting (Gmax), s	42.0		23.5		42.0		23.5					
Max Q Clear Time (g_c+I1), s	24.1		8.9		13.7		8.5					
Green Ext Time (p_c), s	17.6		2.5		24.1		2.3					

Intersection Summary												
HCM 6th Ctrl Delay		11.6										
HCM 6th LOS		B										

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	93	2	2	172	8	7
Future Vol, veh/h	93	2	2	172	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	2	2	187	9	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	103	0	293	102
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	191	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1489	-	698	953
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	697	953
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	797	-	-	1489	-
HCM Lane V/C Ratio	0.02	-	-	0.001	-
HCM Control Delay (s)	9.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	91	3	3	176	4	3
Future Vol, veh/h	91	3	3	176	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	3	3	191	4	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	102	0	298	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1490	-	693	954
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	692	954
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	784	-	-	1490	-
HCM Lane V/C Ratio	0.01	-	-	0.002	-
HCM Control Delay (s)	9.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	168	291	230	437
Demand Flow Rate, veh/h	184	298	241	446
Vehicles Circulating, veh/h	401	260	261	287
Vehicles Exiting, veh/h	332	242	324	271
Ped Vol Crossing Leg, #/h	72	72	25	34
Ped Cap Adj	0.990	0.990	0.997	0.995
Approach Delay, s/veh	6.5	6.3	5.8	8.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	184	298	241	446
Cap Entry Lane, veh/h	917	1058	1057	1030
Entry HV Adj Factor	0.913	0.977	0.955	0.979
Flow Entry, veh/h	168	291	230	437
Cap Entry, veh/h	829	1024	1006	1004
V/C Ratio	0.203	0.284	0.229	0.435
Control Delay, s/veh	6.5	6.3	5.8	8.5
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	2

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	19	2019	29	3	1374
Future Vol, veh/h	3	19	2019	29	3	1374
Conflicting Peds, #/hr	0	0	0	36	36	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	3	7	2	2
Mvmt Flow	3	20	2125	31	3	1446

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2906	1114	0	0	2192	0
Stage 1	2177	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	19	174	-	-	100	-
Stage 1	44	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	15	168	-	-	97	-
Mov Cap-2 Maneuver	15	-	-	-	-	-
Stage 1	43	-	-	-	-	-
Stage 2	359	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	80	0	3.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	70	97	-
HCM Lane V/C Ratio	-	-	0.331	0.033	-
HCM Control Delay (s)	-	-	80	43.4	3.4
HCM Lane LOS	-	-	F	E	A
HCM 95th %tile Q(veh)	-	-	1.2	0.1	-

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	3	27	2	2	17	1	4	10	7	1	3	0
Future Vol, veh/h	3	27	2	2	17	1	4	10	7	1	3	0
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	7	7	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	9	4	2	2	2	2	2	9	2	2	9	2
Mvmt Flow	3	29	2	2	18	1	4	11	8	1	3	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	20	0	0	31	0	0	62	60	37	77	61	22
Stage 1	-	-	-	-	-	-	36	36	-	24	24	-
Stage 2	-	-	-	-	-	-	26	24	-	53	37	-
Critical Hdwy	4.19	-	-	4.12	-	-	7.12	6.59	6.22	7.12	6.59	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.59	-	6.12	5.59	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.59	-	6.12	5.59	-
Follow-up Hdwy	2.281	-	-	2.218	-	-	3.518	4.081	3.318	3.518	4.081	3.318
Pot Cap-1 Maneuver	1552	-	-	1582	-	-	933	818	1035	912	817	1055
Stage 1	-	-	-	-	-	-	980	851	-	994	861	-
Stage 2	-	-	-	-	-	-	992	861	-	960	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1551	-	-	1582	-	-	926	815	1028	887	814	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	926	815	-	887	814	-
Stage 1	-	-	-	-	-	-	978	849	-	991	859	-
Stage 2	-	-	-	-	-	-	985	859	-	933	848	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.7	9.1	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	897	1551	-	-	1582	-	-	831
HCM Lane V/C Ratio	0.025	0.002	-	-	0.001	-	-	0.005
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	27	0	4	24	3	1	2	0	5	0	1
Future Vol, veh/h	2	27	0	4	24	3	1	2	0	5	0	1
Conflicting Peds, #/hr	5	0	10	10	0	5	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	4	2	2	2	4	2	2	4	2	2	2	2
Mvmt Flow	2	29	0	4	26	3	1	2	0	5	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	39	0	0	81	85	39	75	84	35
Stage 1	-	-	-	-	-	-	43	43	-	41	41	-
Stage 2	-	-	-	-	-	-	38	42	-	34	43	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.12	6.54	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.518	4.036	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1565	-	-	1571	-	-	907	801	1033	915	806	1038
Stage 1	-	-	-	-	-	-	971	855	-	974	861	-
Stage 2	-	-	-	-	-	-	977	856	-	982	859	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1556	-	-	893	787	1023	906	791	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	893	787	-	906	791	-
Stage 1	-	-	-	-	-	-	961	846	-	968	854	-
Stage 2	-	-	-	-	-	-	971	849	-	978	850	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.9	9.4	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	819	1558	-	-	1556	-	-	925
HCM Lane V/C Ratio	0.004	0.001	-	-	0.003	-	-	0.007
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	31	24	121	172	6
Future Vol, veh/h	9	31	24	121	172	6
Conflicting Peds, #/hr	20	19	53	0	0	53
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	3	2	17
Mvmt Flow	10	34	26	132	187	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	448	263	247	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	568	776	1307	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	725	1243	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	789	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1243	-	659	-	-
HCM Lane V/C Ratio	0.021	-	0.066	-	-
HCM Control Delay (s)	8	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	51	96	22	39	173
Future Vol, veh/h	73	51	96	22	39	173
Conflicting Peds, #/hr	8	28	0	75	75	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	6	3	2	2	2
Mvmt Flow	79	55	104	24	42	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	471	219	0	0	203	0
Stage 1	191	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.12	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.218	-
Pot Cap-1 Maneuver	530	811	-	-	1369	-
Stage 1	813	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	472	735	-	-	1274	-
Mov Cap-2 Maneuver	472	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	553	1274	-
HCM Lane V/C Ratio	-	-	0.244	0.033	-
HCM Control Delay (s)	-	-	13.6	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

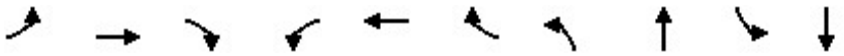
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	10	19	1	10	2	118	9	3	254	2
Future Vol, veh/h	1	0	10	19	1	10	2	118	9	3	254	2
Conflicting Peds, #/hr	0	0	9	9	0	0	100	0	91	91	0	100
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	5	2	2	3	2	2	5	2
Mvmt Flow	1	0	11	21	1	11	2	128	10	3	276	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	526	616	386	526	612	224	378	0	0	229	0	0
Stage 1	383	383	-	228	228	-	-	-	-	-	-	-
Stage 2	143	233	-	298	384	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.55	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.045	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	462	406	662	462	404	815	1180	-	-	1339	-	-
Stage 1	640	612	-	775	710	-	-	-	-	-	-	-
Stage 2	860	712	-	711	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	411	336	596	410	335	746	1071	-	-	1226	-	-
Mov Cap-2 Maneuver	411	336	-	410	335	-	-	-	-	-	-	-
Stage 1	580	554	-	708	649	-	-	-	-	-	-	-
Stage 2	844	651	-	690	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	13.1	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1071	-	-	573	478	1226	-	-
HCM Lane V/C Ratio	0.002	-	-	0.021	0.068	0.003	-	-
HCM Control Delay (s)	8.4	0	-	11.4	13.1	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

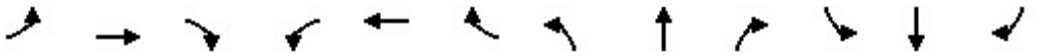


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	161	792	164	277	992	248	215	1975	283	1080
v/c Ratio	0.88	0.90	0.35	1.16	0.98	0.43	0.81	1.07	0.99	0.49
Control Delay	72.7	63.6	9.8	143.8	71.6	9.2	43.8	82.3	90.7	29.3
Queue Delay	0.0	0.0	0.0	0.0	43.2	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	63.6	9.8	143.8	114.8	9.2	43.8	82.3	90.7	29.3
Queue Length 50th (m)	28.8	111.2	2.7	~74.8	142.4	5.6	30.6	~220.9	63.2	77.8
Queue Length 95th (m)	#68.6	#143.1	20.8	#131.3	#185.4	27.2	#57.9	#250.0	#121.8	91.1
Internal Link Dist (m)		92.5			127.1			79.5		31.0
Turn Bay Length (m)	45.0			65.0		100.0	75.0			
Base Capacity (vph)	184	908	475	238	1041	588	267	1853	286	2196
Starvation Cap Reductn	0	0	0	0	146	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.87	0.35	1.16	1.11	0.42	0.81	1.07	0.99	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	760	157	266	952	238	206	1658	238	272	978	59
Future Volume (veh/h)	155	760	157	266	952	238	206	1658	238	272	978	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.91	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	1870	1796	1870	1811	1811	1841	1826	1870	1663	1870	1870	1870
Adj Flow Rate, veh/h	161	792	164	277	992	248	215	1727	248	283	1019	61
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	7	2	6	6	4	5	2	16	2	2	2
Cap, veh/h	185	888	375	258	1019	420	319	1673	238	282	2117	126
Arrive On Green	0.07	0.26	0.26	0.11	0.30	0.30	0.07	0.37	0.37	0.13	0.43	0.43
Sat Flow, veh/h	1781	3413	1441	1725	3441	1418	1739	4480	638	1781	4912	294
Grp Volume(v), veh/h	161	792	164	277	992	248	215	1309	666	283	706	374
Grp Sat Flow(s),veh/h/ln	1781	1706	1441	1725	1721	1418	1739	1702	1715	1781	1702	1801
Q Serve(g_s), s	9.2	31.1	13.2	15.0	39.7	20.8	10.0	52.0	52.0	18.0	20.7	20.8
Cycle Q Clear(g_c), s	9.2	31.1	13.2	15.0	39.7	20.8	10.0	52.0	52.0	18.0	20.7	20.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.16
Lane Grp Cap(c), veh/h	185	888	375	258	1019	420	319	1271	640	282	1467	776
V/C Ratio(X)	0.87	0.89	0.44	1.07	0.97	0.59	0.67	1.03	1.04	1.00	0.48	0.48
Avail Cap(c_a), veh/h	185	907	383	258	1019	420	319	1271	640	282	1467	776
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	38.8	49.6	43.0	36.5	48.5	41.8	26.6	43.6	43.6	46.6	28.4	28.5
Incr Delay (d2), s/veh	33.6	10.9	0.8	76.4	21.9	2.2	5.5	33.1	46.4	54.5	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	15.5	5.2	12.4	21.3	8.1	2.0	29.3	31.9	10.4	9.3	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	60.5	43.8	112.9	70.4	44.0	32.1	76.7	90.1	101.1	28.7	28.9
LnGrp LOS	E	E	D	F	E	D	C	F	F	F	C	C
Approach Vol, veh/h		1117			1517			2190			1363	
Approach Delay, s/veh		59.8			73.8			76.4			43.8	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	46.2	22.0	57.0	19.0	41.2	14.0	65.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	37.0	18.0	52.0	15.0	37.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	11.2	41.7	20.0	54.0	17.0	33.1	12.0	22.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.1	0.0	19.8

Intersection Summary	
HCM 6th Ctrl Delay	65.6
HCM 6th LOS	E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	32	975	91	117	1271	26	294	307
v/c Ratio	0.26	0.60	0.15	0.60	0.77	0.04	0.68	0.57
Control Delay	16.4	13.4	5.1	28.2	16.8	4.2	25.1	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	13.4	5.1	28.2	16.8	4.2	25.1	20.1
Queue Length 50th (m)	2.1	40.3	1.9	9.2	59.3	0.1	25.9	26.4
Queue Length 95th (m)	8.1	57.3	8.3	#31.9	83.2	3.2	#57.6	48.7
Internal Link Dist (m)		129.9			88.6		78.2	31.0
Turn Bay Length (m)	35.0		15.0	35.0		15.0		
Base Capacity (vph)	137	1824	671	220	1858	814	476	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.53	0.14	0.53	0.68	0.03	0.62	0.52

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	897	84	108	1169	24	116	75	79	43	127	112
Future Volume (veh/h)	29	897	84	108	1169	24	116	75	79	43	127	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	0.99		0.85	0.93		0.85	0.93		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	1841	1781	1870	1870	1811	1870	1870	1870	1870	1648	1870	1856
Adj Flow Rate, veh/h	32	975	91	117	1271	26	126	82	86	47	138	122
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	8	2	2	6	2	2	2	2	17	2	3
Cap, veh/h	197	1682	668	266	1710	666	247	158	134	116	274	214
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	418	3385	1345	525	3441	1341	492	466	396	151	807	631
Grp Volume(v), veh/h	32	975	91	117	1271	26	294	0	0	307	0	0
Grp Sat Flow(s),veh/h/ln	418	1692	1345	525	1721	1341	1354	0	0	1589	0	0
Q Serve(g_s), s	4.2	13.0	2.3	13.0	18.9	0.6	1.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	23.1	13.0	2.3	26.0	18.9	0.6	11.1	0.0	0.0	9.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		0.29	0.15		0.40
Lane Grp Cap(c), veh/h	197	1682	668	266	1710	666	539	0	0	604	0	0
V/C Ratio(X)	0.16	0.58	0.14	0.44	0.74	0.04	0.55	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	199	1693	673	268	1721	671	556	0	0	623	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.1	11.4	8.7	20.6	12.8	8.3	17.4	0.0	0.0	17.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.5	0.1	1.1	1.8	0.0	1.0	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.4	0.8	1.8	8.3	0.2	4.1	0.0	0.0	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	11.9	8.8	21.7	14.6	8.3	18.5	0.0	0.0	17.9	0.0	0.0
LnGrp LOS	C	B	A	C	B	A	B	A	A	B	A	A
Approach Vol, veh/h		1098			1414			294			307	
Approach Delay, s/veh		11.9			15.1			18.5			17.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	37.8	26.2	37.8	26.2
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	32.0	22.5	32.0	22.5
Max Q Clear Time (g_c+I1), s	25.1	11.6	28.0	13.1
Green Ext Time (p_c), s	5.9	3.2	3.8	2.9

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1020	342	103	1407	159	65
v/c Ratio	0.41	0.31	0.31	0.57	0.44	0.18
Control Delay	5.5	1.6	8.7	6.9	22.1	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	1.6	8.7	6.9	22.1	6.8
Queue Length 50th (m)	20.3	0.0	3.6	33.0	13.0	0.0
Queue Length 95th (m)	38.2	7.6	13.8	61.4	26.3	7.2
Internal Link Dist (m)	127.1			129.9	25.8	
Turn Bay Length (m)		25.0	26.0		12.0	
Base Capacity (vph)	2487	1099	331	2487	707	642
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.31	0.31	0.57	0.22	0.10

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	938	315	95	1294	146	60
Future Volume (veh/h)	938	315	95	1294	146	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1796
Adj Flow Rate, veh/h	1020	342	103	1407	159	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	2	2	2	7
Cap, veh/h	2374	1014	367	2374	248	212
Arrive On Green	0.67	0.67	0.67	0.67	0.14	0.14
Sat Flow, veh/h	3647	1517	398	3647	1781	1522
Grp Volume(v), veh/h	1020	342	103	1407	159	65
Grp Sat Flow(s),veh/h/ln	1777	1517	398	1777	1781	1522
Q Serve(g_s), s	6.2	4.5	7.6	10.2	3.9	1.8
Cycle Q Clear(g_c), s	6.2	4.5	13.8	10.2	3.9	1.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2374	1014	367	2374	248	212
V/C Ratio(X)	0.43	0.34	0.28	0.59	0.64	0.31
Avail Cap(c_a), veh/h	2475	1057	378	2475	706	603
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	3.6	3.3	6.8	4.3	19.0	18.1
Incr Delay (d2), s/veh	0.1	0.2	0.4	0.4	2.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.4	0.7	3.8	1.9	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.7	3.5	7.2	4.6	21.7	18.9
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	1362			1510	224	
Approach Delay, s/veh	3.7			4.8	20.9	
Approach LOS	A			A	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	11.0	35.7	35.7
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	32.5	32.5
Max Q Clear Time (g_c+I1), s	5.9	8.2	15.8
Green Ext Time (p_c), s	0.9	18.6	15.4

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	32	975	91	117	1271	26	294	307
v/c Ratio	0.23	0.54	0.14	0.51	0.69	0.03	0.81	0.62
Control Delay	14.4	12.2	4.9	20.9	14.6	4.3	38.5	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	12.2	4.9	20.9	14.6	4.3	38.5	24.0
Queue Length 50th (m)	2.1	40.3	2.0	9.0	59.3	0.2	31.2	29.8
Queue Length 95th (m)	8.0	58.6	8.5	#27.1	85.0	3.3	#67.2	52.2
Internal Link Dist (m)		129.9			88.6		78.2	31.0
Turn Bay Length (m)	35.0		15.0	35.0		15.0		
Base Capacity (vph)	141	1820	654	230	1855	808	390	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.54	0.14	0.51	0.69	0.03	0.75	0.58

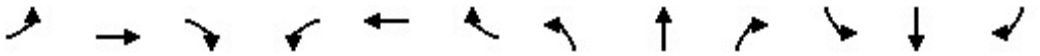
Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	897	84	108	1169	24	116	75	79	43	127	112
Future Volume (veh/h)	29	897	84	108	1169	24	116	75	79	43	127	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	0.99		0.86	0.93		0.84	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	1841	1781	1870	1870	1811	1870	1870	1870	1870	1648	1870	1856
Adj Flow Rate, veh/h	32	975	91	117	1271	26	126	82	86	47	138	122
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	8	2	2	6	2	2	2	2	17	2	3
Cap, veh/h	215	1824	734	288	1855	732	220	140	119	108	250	197
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	418	3385	1362	525	3441	1358	471	451	382	158	805	635
Grp Volume(v), veh/h	32	975	91	117	1271	26	294	0	0	307	0	0
Grp Sat Flow(s),veh/h/ln	418	1692	1362	525	1721	1358	1304	0	0	1598	0	0
Q Serve(g_s), s	4.2	13.1	2.3	13.0	18.9	0.6	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	23.1	13.1	2.3	26.0	18.9	0.6	13.9	0.0	0.0	11.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		0.29	0.15		0.40
Lane Grp Cap(c), veh/h	215	1824	734	288	1855	732	479	0	0	556	0	0
V/C Ratio(X)	0.15	0.53	0.12	0.41	0.69	0.04	0.61	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	215	1824	734	288	1855	732	511	0	0	593	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)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.3	10.4	8.0	18.9	11.8	7.6	21.1	0.0	0.0	20.5	0.0	0.0
Incr Delay (d2), s/veh	1.3	1.0	0.3	4.2	2.1	0.1	2.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.6	0.8	2.1	8.4	0.2	4.9	0.0	0.0	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	11.5	8.3	23.1	13.9	7.7	23.1	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	C	B	A	C	B	A	C	A	A	C	A	A
Approach Vol, veh/h		1098			1414			294			307	
Approach Delay, s/veh		11.5			14.5			23.1			21.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	43.7	26.3	43.7	26.3
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	36.0	23.5	36.0	23.5
Max Q Clear Time (g_c+I1), s	25.1	13.1	28.0	15.9
Green Ext Time (p_c), s	8.8	3.2	7.4	2.4

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	25	86	47	71	62	27	1985	48	22	1242	78
Future Volume (Veh/h)	78	25	86	47	71	62	27	1985	48	22	1242	78
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	85	27	93	51	77	67	29	2158	52	24	1350	85
Pedestrians		30			59			37			42	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		3			6			3			4	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2395	3798	560	2942	3814	846	1465			2269		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2395	3798	560	2942	3814	846	1465			2269		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.2			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.4		
p0 queue free %	0	0	79	0	0	76	93			86		
cM capacity (veh/h)	0	3	443	0	3	276	421			168		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	205	195	568	1079	592	362	675	422
Volume Left	85	51	29	0	0	24	0	0
Volume Right	93	67	0	0	52	0	0	85
cSH	0	0	421	1700	1700	168	1700	1700
Volume to Capacity	Err	Err	0.07	0.63	0.35	0.14	0.40	0.25
Queue Length 95th (m)	Err	Err	1.7	0.0	0.0	3.7	0.0	0.0
Control Delay (s)	Err	Err	2.1	0.0	0.0	6.9	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	Err	Err	0.5			1.7		
Approach LOS	F	F						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	84.3%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	8	2015	5	1	1383
Future Volume (Veh/h)	0	8	2015	5	1	1383
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	8	2121	5	1	1456
Pedestrians	43					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			55			
pX, platoon unblocked	0.63	0.63			0.63	
vC, conflicting volume	2532	752			2169	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1390	0			815	
tC, single (s)	6.8	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	81	639			491	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	8	848	848	429	209	416	416	416
Volume Left	0	0	0	0	1	0	0	0
Volume Right	8	0	0	5	0	0	0	0
cSH	639	1700	1700	1700	491	1700	1700	1700
Volume to Capacity	0.01	0.50	0.50	0.25	0.00	0.24	0.24	0.24
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Lane LOS	B				A			
Approach Delay (s)	10.7	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	170	88	1700	2045
v/c Ratio	0.54	0.28	0.57	0.72
Control Delay	28.8	20.5	7.9	10.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.8	20.5	7.9	10.1
Queue Length 50th (m)	17.4	7.4	32.1	45.9
Queue Length 95th (m)	33.0	17.3	67.5	96.9
Internal Link Dist (m)	91.7	26.0	76.0	29.6
Turn Bay Length (m)				
Base Capacity (vph)	549	551	2973	2854
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.31	0.16	0.57	0.72

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	44	58	29	21	33	17	1533	65	38	1843	62
Future Volume (veh/h)	60	44	58	29	21	33	17	1533	65	38	1843	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.93	0.98		0.94	1.00		0.94	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	1870	1870	1870	1870	1870	1811	1811	1870	1870	1826	1870	1870
Adj Flow Rate, veh/h	63	46	61	31	22	35	18	1614	68	40	1940	65
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	6	6	2	2	5	2	2
Cap, veh/h	171	124	123	166	120	140	68	2987	125	87	2933	98
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	428	559	552	413	540	629	17	4724	198	45	4638	155
Grp Volume(v), veh/h	170	0	0	88	0	0	599	532	568	697	649	699
Grp Sat Flow(s),veh/h/ln	1539	0	0	1582	0	0	1738	1549	1652	1626	1549	1663
Q Serve(g_s), s	2.7	0.0	0.0	0.0	0.0	0.0	0.0	12.6	12.6	0.0	17.3	17.4
Cycle Q Clear(g_c), s	6.0	0.0	0.0	2.8	0.0	0.0	11.3	12.6	12.6	14.3	17.3	17.4
Prop In Lane	0.37		0.36	0.35		0.40	0.03		0.12	0.06		0.09
Lane Grp Cap(c), veh/h	418	0	0	426	0	0	1156	979	1044	1087	979	1051
V/C Ratio(X)	0.41	0.00	0.00	0.21	0.00	0.00	0.52	0.54	0.54	0.64	0.66	0.67
Avail Cap(c_a), veh/h	622	0	0	627	0	0	1171	995	1061	1101	995	1068
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	22.0	0.0	0.0	20.8	0.0	0.0	6.5	6.7	6.7	7.0	7.6	7.6
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.2	0.0	0.0	0.4	0.6	0.6	1.2	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(50%),veh/ln	2.5	0.0	0.0	1.2	0.0	0.0	5.0	4.6	4.9	6.5	6.6	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	0.0	21.1	0.0	0.0	6.9	7.3	7.3	8.3	9.2	9.2
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		170			88			1700			2045	
Approach Delay, s/veh		22.6			21.1			7.2			8.9	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	47.3		18.0		47.3		18.0					
Change Period (Y+Rc), s	6.0		3.5		6.0		3.5					
Max Green Setting (Gmax), s	42.0		23.5		42.0		23.5					
Max Q Clear Time (g_c+I1), s	14.6		8.0		19.4		4.8					
Green Ext Time (p_c), s	25.0		2.0		21.9		1.0					

Intersection Summary		
HCM 6th Ctrl Delay	9.0	
HCM 6th LOS	A	

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	142	5	2	81	3	5
Future Vol, veh/h	142	5	2	81	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	5	2	88	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	159	0	249	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1420	-	739	889
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1420	-	738	889
Mov Cap-2 Maneuver	-	-	-	-	738	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	931	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	826	-	-	1420	-
HCM Lane V/C Ratio	0.011	-	-	0.002	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	3	1	85	1	2
Future Vol, veh/h	145	3	1	85	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	158	3	1	92	1	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	161	0	254	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	94	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1418	-	735	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1418	-	734	885
Mov Cap-2 Maneuver	-	-	-	-	734	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	929	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	828	-	-	1418	-
HCM Lane V/C Ratio	0.004	-	-	0.001	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	160	65	91	171
Demand Flow Rate, veh/h	163	66	99	175
Vehicles Circulating, veh/h	157	139	185	79
Vehicles Exiting, veh/h	97	145	135	126
Ped Vol Crossing Leg, #/h	137	40	43	38
Ped Cap Adj	0.968	0.995	0.994	0.995
Approach Delay, s/veh	4.5	3.5	4.2	4.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	163	66	99	175
Cap Entry Lane, veh/h	1176	1197	1143	1273
Entry HV Adj Factor	0.983	0.990	0.922	0.977
Flow Entry, veh/h	160	65	91	171
Cap Entry, veh/h	1118	1179	1047	1237
V/C Ratio	0.143	0.055	0.087	0.138
Control Delay, s/veh	4.5	3.5	4.2	4.1
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	1619	29	9	1946
Future Vol, veh/h	0	20	1619	29	9	1946
Conflicting Peds, #/hr	0	1	0	67	67	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	14	2	2	2	2
Mvmt Flow	0	22	1741	31	10	2092

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2681	954	0	0	1839	0
Stage 1	1824	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Critical Hdwy	5.74	7.38	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	4.04	-	-	3.12	-
Pot Cap-1 Maneuver	40	205	-	-	151	-
Stage 1	74	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	38	192	-	-	142	-
Mov Cap-2 Maneuver	38	-	-	-	-	-
Stage 1	69	-	-	-	-	-
Stage 2	341	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	192	142	-
HCM Lane V/C Ratio	-	-	0.112	0.068	-
HCM Control Delay (s)	-	-	26.1	32.2	0
HCM Lane LOS	-	-	D	D	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	32	2	2	19	2	1	2	2	0	6	1
Future Vol, veh/h	4	32	2	2	19	2	1	2	2	0	6	1
Conflicting Peds, #/hr	0	0	2	2	0	0	26	0	3	3	0	26
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	12	12	2	2	2	2	2	2	2
Mvmt Flow	4	35	2	2	21	2	1	2	2	0	7	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	23	0	0	39	0	0	102	73	41	75	73	48
Stage 1	-	-	-	-	-	-	46	46	-	26	26	-
Stage 2	-	-	-	-	-	-	56	27	-	49	47	-
Critical Hdwy	4.12	-	-	4.22	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.308	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1592	-	-	1509	-	-	879	817	1030	915	817	1021
Stage 1	-	-	-	-	-	-	968	857	-	992	874	-
Stage 2	-	-	-	-	-	-	956	873	-	964	856	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1592	-	-	1506	-	-	847	812	1025	906	812	996
Mov Cap-2 Maneuver	-	-	-	-	-	-	847	812	-	906	812	-
Stage 1	-	-	-	-	-	-	963	853	-	989	873	-
Stage 2	-	-	-	-	-	-	924	872	-	954	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.6	9.1	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	894	1592	-	-	1506	-	-	834
HCM Lane V/C Ratio	0.006	0.003	-	-	0.001	-	-	0.009
HCM Control Delay (s)	9.1	7.3	0	-	7.4	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	32	1	1	11	3	0	0	1	1	2	1
Future Vol, veh/h	0	32	1	1	11	3	0	0	1	1	2	1
Conflicting Peds, #/hr	3	0	8	8	0	3	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	12	2	2	2	2	12	2	2
Mvmt Flow	0	46	1	1	16	4	0	0	1	1	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	23	0	0	55	0	0	77	80	60	75	78	21
Stage 1	-	-	-	-	-	-	55	55	-	23	23	-
Stage 2	-	-	-	-	-	-	22	25	-	52	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.22	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.22	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.22	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.608	4.018	3.318
Pot Cap-1 Maneuver	1592	-	-	1550	-	-	912	810	1005	891	812	1056
Stage 1	-	-	-	-	-	-	957	849	-	970	876	-
Stage 2	-	-	-	-	-	-	996	874	-	936	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1588	-	-	1539	-	-	901	801	993	882	803	1053
Mov Cap-2 Maneuver	-	-	-	-	-	-	901	801	-	882	803	-
Stage 1	-	-	-	-	-	-	950	843	-	967	872	-
Stage 2	-	-	-	-	-	-	990	871	-	930	843	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	8.6	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	993	1588	-	-	1539	-	-	874
HCM Lane V/C Ratio	0.001	-	-	-	0.001	-	-	0.007
HCM Control Delay (s)	8.6	0	-	-	7.3	0	-	9.1
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	32	17	66	126	3
Future Vol, veh/h	15	32	17	66	126	3
Conflicting Peds, #/hr	6	4	112	0	0	112
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	2	12	8	3	12
Mvmt Flow	16	35	18	72	137	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	365	255	252	0	-	0
Stage 1	251	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.52	6.22	4.22	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.318	2.308	-	-	-
Pot Cap-1 Maneuver	615	784	1257	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	486	700	1127	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1127	-	614	-	-
HCM Lane V/C Ratio	0.016	-	0.083	-	-
HCM Control Delay (s)	8.2	0	11.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	18	63	52	30	124
Future Vol, veh/h	39	18	63	52	30	124
Conflicting Peds, #/hr	6	28	0	53	53	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	19	2	4	2	3
Mvmt Flow	42	20	68	57	33	135

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	357	178	0	0	178	0
Stage 1	150	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.5	6.39	-	-	4.12	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.471	-	-	2.218	-
Pot Cap-1 Maneuver	626	823	-	-	1398	-
Stage 1	859	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	576	762	-	-	1330	-
Mov Cap-2 Maneuver	576	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	624	1330	-
HCM Lane V/C Ratio	-	-	0.099	0.025	-
HCM Control Delay (s)	-	-	11.4	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

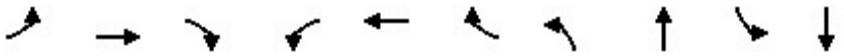
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	2	10	0	3	7	115	15	6	176	1
Future Vol, veh/h	1	0	2	10	0	3	7	115	15	6	176	1
Conflicting Peds, #/hr	5	0	14	14	0	5	144	0	91	91	0	144
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	6	2
Mvmt Flow	1	0	2	11	0	3	8	125	16	7	191	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	506	598	350	461	590	229	336	0	0	232	0	0
Stage 1	350	350	-	240	240	-	-	-	-	-	-	-
Stage 2	156	248	-	221	350	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	477	416	693	511	420	810	1223	-	-	1336	-	-
Stage 1	666	633	-	763	707	-	-	-	-	-	-	-
Stage 2	846	701	-	781	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	405	326	593	455	329	738	1060	-	-	1224	-	-
Mov Cap-2 Maneuver	405	326	-	455	329	-	-	-	-	-	-	-
Stage 1	573	546	-	694	643	-	-	-	-	-	-	-
Stage 2	832	637	-	763	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	12.4	0.4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1060	-	-	514	499	1224	-	-
HCM Lane V/C Ratio	0.007	-	-	0.006	0.028	0.005	-	-
HCM Control Delay (s)	8.4	0	-	12	12.4	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	1002	212	349	951	236	138	1662	289	1762
v/c Ratio	0.92	1.09	0.47	1.44	0.90	0.45	0.79	0.92	1.05	0.81
Control Delay	81.4	105.5	17.3	251.5	59.7	8.9	59.4	50.8	106.8	38.3
Queue Delay	0.0	0.0	0.0	0.0	46.8	0.0	0.0	0.0	0.0	0.0
Total Delay	81.4	105.5	17.3	251.5	106.4	8.9	59.4	50.8	106.8	38.3
Queue Length 50th (m)	30.3	~164.0	13.6	~115.7	133.4	3.6	21.7	157.9	~71.1	153.9
Queue Length 95th (m)	#74.2	#205.4	37.8	#177.5	#169.4	25.1	#54.7	179.4	#128.8	173.4
Internal Link Dist (m)		92.5			119.0			79.5		31.0
Turn Bay Length (m)	45.0			65.0		100.0	75.0			
Base Capacity (vph)	182	918	452	242	1053	530	179	1802	276	2178
Starvation Cap Reductn	0	0	0	0	198	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	1.09	0.47	1.44	1.11	0.45	0.77	0.92	1.05	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	952	201	332	903	224	131	1327	252	275	1551	123
Future Volume (veh/h)	159	952	201	332	903	224	131	1327	252	275	1551	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	1.00		0.87	1.00		0.85	1.00		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1826	1841	1841	1841	1870	1841	1870	1767	1826	1870	1870
Adj Flow Rate, veh/h	167	1002	212	349	951	236	138	1397	265	289	1633	129
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	5	4	4	4	2	4	2	9	5	2	2
Cap, veh/h	197	918	351	240	1051	413	200	1547	293	291	2079	164
Arrive On Green	0.07	0.26	0.26	0.11	0.30	0.30	0.06	0.37	0.37	0.13	0.44	0.44
Sat Flow, veh/h	1781	3469	1327	1753	3497	1375	1753	4176	790	1739	4765	376
Grp Volume(v), veh/h	167	1002	212	349	951	236	138	1138	524	289	1166	596
Grp Sat Flow(s),veh/h/ln	1781	1735	1327	1753	1749	1375	1753	1702	1562	1739	1702	1736
Q Serve(g_s), s	9.6	37.0	19.6	15.0	36.5	20.3	6.8	44.2	44.4	17.8	41.0	41.2
Cycle Q Clear(g_c), s	9.6	37.0	19.6	15.0	36.5	20.3	6.8	44.2	44.4	17.8	41.0	41.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		0.22
Lane Grp Cap(c), veh/h	197	918	351	240	1051	413	200	1261	579	291	1486	758
V/C Ratio(X)	0.85	1.09	0.60	1.46	0.91	0.57	0.69	0.90	0.91	0.99	0.78	0.79
Avail Cap(c_a), veh/h	197	918	351	240	1051	413	215	1266	581	291	1486	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	51.4	45.0	42.3	47.0	41.3	31.2	41.6	41.7	42.8	33.8	33.8
Incr Delay (d2), s/veh	27.3	57.8	2.9	227.2	11.1	1.9	8.4	9.2	17.7	50.9	2.8	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	24.5	7.2	21.4	18.6	7.6	3.6	21.5	21.2	14.9	18.9	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.9	109.2	47.9	269.5	58.0	43.2	39.6	50.8	59.4	93.7	36.6	39.4
LnGrp LOS	E	F	D	F	E	D	D	D	E	F	D	D
Approach Vol, veh/h		1381			1536			1800			2051	
Approach Delay, s/veh		94.5			103.8			52.4			45.5	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	47.0	22.0	56.8	19.0	42.0	12.8	66.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	37.0	18.0	52.0	15.0	37.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	11.6	38.5	19.8	46.4	17.0	39.0	8.8	43.2
Green Ext Time (p_c), s	0.0	0.0	0.0	5.4	0.0	0.0	0.1	8.5

Intersection Summary	
HCM 6th Ctrl Delay	70.6
HCM 6th LOS	E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	59	1311	127	106	1306	17	271	204
v/c Ratio	0.49	0.73	0.20	0.88	0.72	0.02	0.60	0.41
Control Delay	28.5	14.8	5.8	76.6	14.4	3.1	23.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	14.8	5.8	76.6	14.4	3.1	23.6	17.7
Queue Length 50th (m)	3.8	52.9	3.4	9.2	52.0	0.0	24.4	15.8
Queue Length 95th (m)	#20.7	87.6	12.1	#39.0	85.5	2.1	45.3	31.2
Internal Link Dist (m)		138.0			88.6		78.2	31.0
Turn Bay Length (m)	35.0		15.0	35.0		15.0		
Base Capacity (vph)	122	1797	645	122	1831	765	530	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.73	0.20	0.87	0.71	0.02	0.51	0.35

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1219	118	99	1215	16	70	73	110	35	82	73
Future Volume (veh/h)	55	1219	118	99	1215	16	70	73	110	35	82	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	1.00		0.86	0.90		0.84	0.91		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	1811	1811	1870	1870	1841	1870	1870	1870	1870	1856	1870	1841
Adj Flow Rate, veh/h	59	1311	127	106	1306	17	75	78	118	38	88	78
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, %	6	6	2	2	4	2	2	2	2	3	2	4
Cap, veh/h	192	1713	667	182	1741	681	172	175	212	127	261	199
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	401	3441	1340	371	3497	1369	295	516	626	177	769	586
Grp Volume(v), veh/h	59	1311	127	106	1306	17	271	0	0	204	0	0
Grp Sat Flow(s),veh/h/ln	401	1721	1340	371	1749	1369	1437	0	0	1533	0	0
Q Serve(g_s), s	8.9	19.9	3.4	12.1	19.2	0.4	3.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.1	19.9	3.4	32.0	19.2	0.4	9.1	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.28		0.44	0.19		0.38
Lane Grp Cap(c), veh/h	192	1713	667	182	1741	681	558	0	0	586	0	0
V/C Ratio(X)	0.31	0.77	0.19	0.58	0.75	0.02	0.49	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	192	1713	667	182	1741	681	573	0	0	602	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	13.1	9.0	28.1	12.9	8.2	16.9	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	0.9	2.1	0.1	4.6	1.9	0.0	0.7	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(50%),veh/ln	1.0	8.8	1.1	2.0	8.6	0.1	3.6	0.0	0.0	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	15.2	9.1	32.8	14.8	8.2	17.6	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	C	B	A	C	B	A	B	A	A	B	A	A
Approach Vol, veh/h		1497			1429			271			204	
Approach Delay, s/veh		15.1			16.1			17.6			16.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	38.0		26.3		38.0		26.3					
Change Period (Y+Rc), s	6.0		4.5		6.0		4.5					
Max Green Setting (Gmax), s	32.0		22.5		32.0		22.5					
Max Q Clear Time (g_c+I1), s	30.1		8.1		34.0		11.1					
Green Ext Time (p_c), s	1.8		2.5		0.0		3.0					

Intersection Summary												
HCM 6th Ctrl Delay		15.8										
HCM 6th LOS		B										



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1471	129	22	1447	115	64
v/c Ratio	0.57	0.13	0.12	0.56	0.37	0.22
Control Delay	6.2	2.0	5.9	6.1	22.6	16.3
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	2.0	5.9	6.1	22.6	16.3
Queue Length 50th (m)	32.6	0.9	0.6	31.7	10.2	4.0
Queue Length 95th (m)	58.6	5.7	3.4	57.2	20.2	11.3
Internal Link Dist (m)	119.0			138.0	62.1	
Turn Bay Length (m)		25.0	26.0		12.0	
Base Capacity (vph)	2573	983	186	2573	688	626
Starvation Cap Reductn	185	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.13	0.12	0.56	0.17	0.10

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1353	119	20	1331	106	59
Future Volume (veh/h)	1353	119	20	1331	106	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.93	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1471	129	22	1447	115	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2447	1019	310	2447	195	174
Arrive On Green	0.69	0.69	0.69	0.69	0.11	0.11
Sat Flow, veh/h	3647	1480	317	3647	1781	1585
Grp Volume(v), veh/h	1471	129	22	1447	115	64
Grp Sat Flow(s),veh/h/ln	1777	1480	317	1777	1781	1585
Q Serve(g_s), s	9.8	1.3	1.8	9.5	2.7	1.7
Cycle Q Clear(g_c), s	9.8	1.3	11.6	9.5	2.7	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2447	1019	310	2447	195	174
V/C Ratio(X)	0.60	0.13	0.07	0.59	0.59	0.37
Avail Cap(c_a), veh/h	2590	1079	323	2590	739	658
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	3.7	2.4	6.8	3.6	18.9	18.4
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.3	2.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.4	0.1	3.4	1.4	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.0	2.4	6.9	4.0	21.7	19.7
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	1600			1469	179	
Approach Delay, s/veh	3.9			4.0	21.0	
Approach LOS	A			A	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	9.4	35.2	35.2
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	32.5	32.5
Max Q Clear Time (g_c+I1), s	4.7	11.8	13.6
Green Ext Time (p_c), s	0.7	18.8	17.1

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	59	1311	127	106	1306	17	271	204
v/c Ratio	0.40	0.67	0.19	0.71	0.65	0.02	0.68	0.46
Control Delay	19.4	12.8	5.3	42.8	12.5	3.1	30.3	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	12.8	5.3	42.8	12.5	3.1	30.3	20.9
Queue Length 50th (m)	3.6	52.9	3.4	8.4	52.0	0.0	30.3	18.9
Queue Length 95th (m)	16.0	86.1	11.7	#37.4	84.2	2.1	50.0	33.6
Internal Link Dist (m)		138.0			88.6		78.2	31.0
Turn Bay Length (m)	35.0		15.0	35.0		15.0		
Base Capacity (vph)	149	1969	684	150	2007	830	457	511
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.67	0.19	0.71	0.65	0.02	0.59	0.40

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1219	118	99	1215	16	70	73	110	35	82	73
Future Volume (veh/h)	55	1219	118	99	1215	16	70	73	110	35	82	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		0.87	0.90		0.83	0.91		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	1811	1811	1870	1870	1841	1870	1870	1870	1870	1856	1870	1841
Adj Flow Rate, veh/h	59	1311	127	106	1306	17	75	78	118	38	88	78
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, %	6	6	2	2	4	2	2	2	2	3	2	4
Cap, veh/h	208	1851	730	197	1882	745	159	161	196	117	241	184
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	401	3441	1356	371	3497	1385	298	516	628	180	772	590
Grp Volume(v), veh/h	59	1311	127	106	1306	17	271	0	0	204	0	0
Grp Sat Flow(s),veh/h/ln	401	1721	1356	371	1749	1385	1442	0	0	1542	0	0
Q Serve(g_s), s	8.9	19.9	3.3	17.8	19.3	0.4	3.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.2	19.9	3.3	37.7	19.3	0.4	10.3	0.0	0.0	7.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.28		0.44	0.19		0.38
Lane Grp Cap(c), veh/h	208	1851	730	197	1882	745	515	0	0	542	0	0
V/C Ratio(X)	0.28	0.71	0.17	0.54	0.69	0.02	0.53	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	208	1851	730	197	1882	745	528	0	0	556	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)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.3	12.1	8.2	27.1	11.9	7.6	20.0	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	2.7	1.9	0.4	10.1	2.1	0.1	0.9	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(50%),veh/ln	1.1	8.8	1.2	2.5	8.7	0.1	4.1	0.0	0.0	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.0	14.0	8.7	37.2	14.1	7.6	20.9	0.0	0.0	19.4	0.0	0.0
LnGrp LOS	C	B	A	D	B	A	C	A	A	B	A	A
Approach Vol, veh/h		1497			1429			271			204	
Approach Delay, s/veh		13.9			15.7			20.9			19.4	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	43.7		26.3		43.7		26.3					
Change Period (Y+Rc), s	6.0		4.5		6.0		4.5					
Max Green Setting (Gmax), s	37.0		22.5		37.0		22.5					
Max Q Clear Time (g_c+I1), s	30.2		9.0		39.7		12.3					
Green Ext Time (p_c), s	6.4		2.4		0.0		2.8					

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	44	58	29	21	33	17	1533	65	38	1843	62
Future Volume (Veh/h)	60	44	58	29	21	33	17	1533	65	38	1843	62
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	63	46	61	31	22	35	18	1614	68	40	1940	65
Pedestrians		40			75			26			26	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		4			7			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2738	3886	745	2596	3884	673	2045			1757		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2738	3886	745	2596	3884	673	2045			1757		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.3			2.2		
p0 queue free %	0	0	82	0	0	90	93			87		
cM capacity (veh/h)	0	2	335	0	2	352	248			316		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	170	88	422	807	472	525	970	550
Volume Left	63	31	18	0	0	40	0	0
Volume Right	61	35	0	0	68	0	0	65
cSH	0	0	248	1700	1700	316	1700	1700
Volume to Capacity	Err	Err	0.07	0.47	0.28	0.13	0.57	0.32
Queue Length 95th (m)	Err	Err	1.8	0.0	0.0	3.3	0.0	0.0
Control Delay (s)	Err	Err	2.8	0.0	0.0	4.3	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	Err	Err	0.7			1.1		
Approach LOS	F	F						

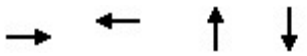
Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	84.1%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	3	1651	5	0	1953
Future Volume (Veh/h)	0	3	1651	5	0	1953
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	3	1738	5	0	2056
Pedestrians	69					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	6					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			55			
pX, platoon unblocked	0.68	0.68			0.68	
vC, conflicting volume	2324	651			1812	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1289	0			535	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	99	688			653	

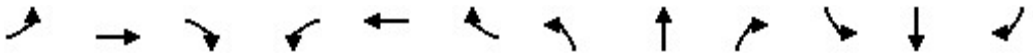
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	3	695	695	353	294	587	587	587
Volume Left	0	0	0	0	0	0	0	0
Volume Right	3	0	0	5	0	0	0	0
cSH	688	1700	1700	1700	653	1700	1700	1700
Volume to Capacity	0.00	0.41	0.41	0.21	0.00	0.35	0.35	0.35
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.3	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	199	222	2231	1452
v/c Ratio	0.64	0.63	0.77	0.55
Control Delay	27.6	31.0	11.8	8.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.6	31.0	11.8	8.2
Queue Length 50th (m)	17.0	24.1	58.7	29.5
Queue Length 95th (m)	35.5	43.1	109.0	56.1
Internal Link Dist (m)	91.7	26.0	24.0	29.6
Turn Bay Length (m)				
Base Capacity (vph)	485	576	2911	2657
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.39	0.77	0.55

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	25	86	47	71	93	27	2044	48	33	1268	78
Future Volume (veh/h)	78	25	86	47	71	93	27	2044	48	33	1268	78
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	0.98		0.97	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	1900	1900	1900	1900	1900	1900	1900	1856	1856	1781	1870	1900
Adj Flow Rate, veh/h	82	26	91	49	75	98	28	2152	51	35	1335	82
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, %	0	0	0	0	0	0	0	3	3	8	2	0
Cap, veh/h	195	77	165	123	157	169	73	3018	71	86	2703	164
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	516	336	718	247	683	735	27	4812	114	43	4309	261
Grp Volume(v), veh/h	199	0	0	222	0	0	796	687	748	446	487	519
Grp Sat Flow(s),veh/h/ln	1570	0	0	1665	0	0	1749	1537	1667	1413	1549	1652
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	20.0	20.2	0.7	11.4	11.4
Cycle Q Clear(g_c), s	6.7	0.0	0.0	7.4	0.0	0.0	18.6	20.0	20.2	20.9	11.4	11.4
Prop In Lane	0.41		0.46	0.22		0.44	0.04		0.07	0.08		0.16
Lane Grp Cap(c), veh/h	437	0	0	449	0	0	1153	964	1045	944	971	1036
V/C Ratio(X)	0.45	0.00	0.00	0.49	0.00	0.00	0.69	0.71	0.72	0.47	0.50	0.50
Avail Cap(c_a), veh/h	614	0	0	644	0	0	1161	971	1054	950	979	1044
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	22.3	0.0	0.0	22.6	0.0	0.0	8.1	8.4	8.4	6.1	6.7	6.7
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.8	0.0	0.0	1.7	2.5	2.3	0.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	3.4	0.0	0.0	8.5	7.8	8.4	3.4	4.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	0.0	23.4	0.0	0.0	9.8	10.8	10.7	6.4	7.1	7.1
LnGrp LOS	C	A	A	C	A	A	A	B	B	A	A	A
Approach Vol, veh/h		199			222			2231			1452	
Approach Delay, s/veh		23.0			23.4			10.4			6.9	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	47.7		18.8		47.7		18.8					
Change Period (Y+Rc), s	6.0		3.5		6.0		3.5					
Max Green Setting (Gmax), s	42.0		23.5		42.0		23.5					
Max Q Clear Time (g_c+I1), s	22.2		8.7		22.9		9.4					
Green Ext Time (p_c), s	19.5		2.4		17.1		2.6					

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	104	2	2	203	8	8
Future Vol, veh/h	104	2	2	203	8	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	113	2	2	221	9	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	115	0	339	114
Stage 1	-	-	-	-	114	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1474	-	657	939
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1474	-	656	939
Mov Cap-2 Maneuver	-	-	-	-	656	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	810	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	772	-	-	1474	-
HCM Lane V/C Ratio	0.023	-	-	0.001	-
HCM Control Delay (s)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	14	3	176	35	3
Future Vol, veh/h	92	14	3	176	35	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	15	3	191	38	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	115	0	305	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1474	-	687	946
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1474	-	686	946
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	701	-	-	1474	-
HCM Lane V/C Ratio	0.059	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	156	267	250	411
Demand Flow Rate, veh/h	163	267	252	413
Vehicles Circulating, veh/h	372	266	234	253
Vehicles Exiting, veh/h	294	220	301	280
Ped Vol Crossing Leg, #/h	183	32	28	74
Ped Cap Adj	0.952	0.996	0.996	0.990
Approach Delay, s/veh	6.0	5.9	5.5	7.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	163	267	252	413
Cap Entry Lane, veh/h	944	1052	1087	1066
Entry HV Adj Factor	0.955	1.000	0.992	0.995
Flow Entry, veh/h	156	267	250	411
Cap Entry, veh/h	858	1047	1074	1050
V/C Ratio	0.181	0.255	0.233	0.391
Control Delay, s/veh	6.0	5.9	5.5	7.6
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	2

Intersection	
Int Delay, s/veh	24.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	75	106	1991	32	57	1331
Future Vol, veh/h	75	106	1991	32	57	1331
Conflicting Peds, #/hr	1	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	3	0	0	2
Mvmt Flow	82	115	2164	35	62	1447

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3034	1103	0	0	2202	0
Stage 1	2185	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Critical Hdwy	6.25	7.26	-	-	5.3	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.65	3.98	-	-	3.1	-
Pot Cap-1 Maneuver	~ 16	169	-	-	101	-
Stage 1	~ 45	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	169	-	-	101	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	~ 45	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	175.1	0	41.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	169	101	-
HCM Lane V/C Ratio	-	-	1.164	0.613	-
HCM Control Delay (s)	-	-	175.1	85.6	39.4
HCM Lane LOS	-	-	F	F	E
HCM 95th %tile Q(veh)	-	-	10.5	3	-

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

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	81	6	7	118	1	62	12	45	1	3	0
Future Vol, veh/h	3	81	6	7	118	1	62	12	45	1	3	0
Conflicting Peds, #/hr	5	0	4	4	0	5	0	0	4	4	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	0	0	0	9	0	0	0	0	0	0	0
Mvmt Flow	3	88	7	8	128	1	67	13	49	1	3	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	134	0	0	99	0	0	248	252	100	283	255	134
Stage 1	-	-	-	-	-	-	102	102	-	150	150	-
Stage 2	-	-	-	-	-	-	146	150	-	133	105	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	-	1507	-	-	710	655	961	673	652	920
Stage 1	-	-	-	-	-	-	909	815	-	857	777	-
Stage 2	-	-	-	-	-	-	861	777	-	875	812	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1456	-	-	1501	-	-	700	644	954	620	641	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	700	644	-	620	641	-
Stage 1	-	-	-	-	-	-	904	810	-	851	768	-
Stage 2	-	-	-	-	-	-	852	768	-	812	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	10.6	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1456	-	-	1501	-	-	636
HCM Lane V/C Ratio	0.168	0.002	-	-	0.005	-	-	0.007
HCM Control Delay (s)	10.6	7.5	0	-	7.4	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	91	5	17	34	3	41	33	51	5	11	1
Future Vol, veh/h	2	91	5	17	34	3	41	33	51	5	11	1
Conflicting Peds, #/hr	10	0	10	10	0	10	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	17	2	0	0	4	0	0	0	0	0	0	0
Mvmt Flow	2	103	6	19	39	3	47	38	58	6	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	119	0	0	206	210	118	249	212	51
Stage 1	-	-	-	-	-	-	120	120	-	89	89	-
Stage 2	-	-	-	-	-	-	86	90	-	160	123	-
Critical Hdwy	4.27	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.353	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	-	1482	-	-	756	691	939	709	689	1023
Stage 1	-	-	-	-	-	-	889	800	-	923	825	-
Stage 2	-	-	-	-	-	-	927	824	-	847	798	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1449	-	-	1468	-	-	730	669	929	623	667	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	730	669	-	623	667	-
Stage 1	-	-	-	-	-	-	880	792	-	914	807	-
Stage 2	-	-	-	-	-	-	900	806	-	754	790	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.4	10.6	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	779	1449	-	-	1468	-	-	667
HCM Lane V/C Ratio	0.182	0.002	-	-	0.013	-	-	0.029
HCM Control Delay (s)	10.6	7.5	0	-	7.5	0	-	10.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	109	42	105	172	11
Future Vol, veh/h	47	109	42	105	172	11
Conflicting Peds, #/hr	15	33	91	0	0	91
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	66	66	66	66	66	66
Heavy Vehicles, %	5	0	3	5	0	0
Mvmt Flow	71	165	64	159	261	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	663	394	369	0	-	0
Stage 1	361	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.45	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	422	659	1184	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	331	585	1084	-	-	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	681	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.9	2.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1084	-	475	-	-
HCM Lane V/C Ratio	0.059	-	0.498	-	-
HCM Control Delay (s)	8.5	0	19.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.7	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	68	82	22	108	181
Future Vol, veh/h	73	68	82	22	108	181
Conflicting Peds, #/hr	4	8	0	52	52	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	9	14	3	0	0	0
Mvmt Flow	95	88	106	29	140	235

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	692	181	0	0	187	0
Stage 1	173	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Critical Hdwy	6.49	6.34	-	-	4.1	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.426	-	-	2.2	-
Pot Cap-1 Maneuver	399	832	-	-	1399	-
Stage 1	841	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	332	786	-	-	1332	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	511	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.9	0	3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	460	1332	-
HCM Lane V/C Ratio	-	-	0.398	0.105	-
HCM Control Delay (s)	-	-	17.9	8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.9	0.4	-

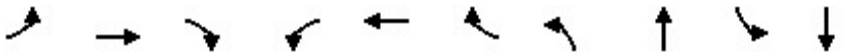
Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	111	19	1	10	36	103	9	3	262	2
Future Vol, veh/h	1	0	111	19	1	10	36	103	9	3	262	2
Conflicting Peds, #/hr	0	0	0	0	0	0	83	0	0	0	0	83
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	9	0
Mvmt Flow	1	0	121	21	1	11	39	112	10	3	285	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	576	575	369	548	571	117	370	0	0	122	0	0
Stage 1	375	375	-	195	195	-	-	-	-	-	-	-
Stage 2	201	200	-	353	376	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	431	431	681	450	434	941	1200	-	-	1478	-	-
Stage 1	650	621	-	811	743	-	-	-	-	-	-	-
Stage 2	805	739	-	668	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	381	382	629	353	385	941	1108	-	-	1478	-	-
Mov Cap-2 Maneuver	381	382	-	353	385	-	-	-	-	-	-	-
Stage 1	577	572	-	780	715	-	-	-	-	-	-	-
Stage 2	764	711	-	539	571	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	13.7	2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	625	447	1478	-	-
HCM Lane V/C Ratio	0.035	-	-	0.195	0.073	0.002	-	-
HCM Control Delay (s)	8.4	0	-	12.1	13.7	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.2	0	-	-

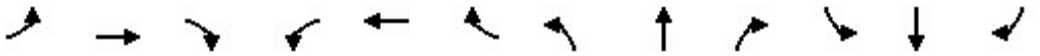


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	798	162	316	1054	192	212	1973	236	1143
v/c Ratio	0.95	0.83	0.36	1.34	0.96	0.33	0.87	1.05	0.88	0.53
Control Delay	89.5	56.4	11.4	208.6	63.8	7.9	54.5	78.8	67.5	30.8
Queue Delay	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Total Delay	89.5	56.4	11.4	208.6	65.3	7.9	54.5	78.8	67.5	30.8
Queue Length 50th (m)	32.8	111.0	4.6	~101.2	157.9	6.0	30.1	~217.1	48.0	83.1
Queue Length 95th (m)	#79.7	136.1	23.3	#161.9	#196.6	20.1	#65.5	#246.4	#90.9	96.9
Internal Link Dist (m)		92.5			154.4			79.5		31.0
Turn Bay Length (m)	45.0		30.0	65.0		120.0	75.0		70.0	
Base Capacity (vph)	183	966	455	236	1093	583	244	1871	283	2192
Starvation Cap Reductn	0	0	0	0	12	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.83	0.36	1.34	0.98	0.33	0.87	1.05	0.83	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	774	157	307	1022	186	206	1683	231	229	1005	104
Future Volume (veh/h)	169	774	157	307	1022	186	206	1683	231	229	1005	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1678	1781	1856	1870	1811	1870	1870	1870	1885	1856
Adj Flow Rate, veh/h	174	798	162	316	1054	192	212	1735	238	236	1036	107
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	3	15	8	3	2	6	2	2	2	1	3
Cap, veh/h	192	971	372	269	1097	471	295	1677	228	260	1970	203
Arrive On Green	0.07	0.28	0.28	0.21	0.62	0.62	0.07	0.37	0.37	0.12	0.42	0.42
Sat Flow, veh/h	1781	3526	1351	1697	3526	1515	1725	4516	615	1781	4719	486
Grp Volume(v), veh/h	174	798	162	316	1054	192	212	1305	668	236	753	390
Grp Sat Flow(s),veh/h/ln	1781	1763	1351	1697	1763	1515	1725	1702	1727	1781	1716	1775
Q Serve(g_s), s	9.9	29.7	13.8	15.0	39.3	9.0	10.0	52.0	52.0	14.2	22.9	23.0
Cycle Q Clear(g_c), s	9.9	29.7	13.8	15.0	39.3	9.0	10.0	52.0	52.0	14.2	22.9	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.27
Lane Grp Cap(c), veh/h	192	971	372	269	1097	471	295	1264	642	260	1432	741
V/C Ratio(X)	0.90	0.82	0.44	1.18	0.96	0.41	0.72	1.03	1.04	0.91	0.53	0.53
Avail Cap(c_a), veh/h	192	971	372	269	1097	471	295	1264	642	280	1432	741
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	47.5	41.7	34.3	25.6	19.9	28.1	44.0	44.0	44.1	30.4	30.5
Incr Delay (d2), s/veh	39.4	7.8	3.7	106.6	16.8	2.1	8.3	33.9	46.9	29.5	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	15.0	5.3	11.1	18.7	3.5	2.7	29.4	32.1	7.1	10.4	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	55.3	45.4	140.9	42.4	22.0	36.3	77.9	90.9	73.6	30.8	31.2
LnGrp LOS	E	E	D	F	D	C	D	F	F	E	C	C
Approach Vol, veh/h		1134			1562			2185			1379	
Approach Delay, s/veh		57.3			59.8			77.8			38.2	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	48.6	20.4	57.0	19.0	43.6	14.0	63.4
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	37.0	18.0	52.0	15.0	37.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	11.9	41.3	16.2	54.0	17.0	31.7	12.0	25.0
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	4.2	0.0	19.5

Intersection Summary	
HCM 6th Ctrl Delay	60.9
HCM 6th LOS	E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	41	1095	113	127	1384	40	324	462
v/c Ratio	0.38	0.64	0.18	0.93	0.81	0.06	0.83	0.88
Control Delay	20.7	13.4	4.0	87.6	21.9	7.2	38.2	39.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	13.6	4.0	87.6	21.9	7.2	38.2	39.6
Queue Length 50th (m)	3.0	74.2	2.5	15.8	82.5	1.2	33.6	50.6
Queue Length 95th (m)	10.6	71.5	8.4	#44.3	#103.4	5.6	#65.2	#87.3
Internal Link Dist (m)		102.6			88.6		78.2	31.0
Turn Bay Length (m)	28.0		15.0	20.0		15.0		
Base Capacity (vph)	109	1702	621	137	1702	725	435	586
Starvation Cap Reductn	0	126	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.69	0.18	0.93	0.81	0.06	0.74	0.79

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	931	96	108	1176	34	118	78	79	78	139	175
Future Volume (veh/h)	35	931	96	108	1176	34	118	78	79	78	139	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.88	0.98		0.88	0.99		0.93	0.98		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	1900	1856	1900	1707	1856	1856	1856	1900	1811	1441	1900	1856
Adj Flow Rate, veh/h	41	1095	113	127	1384	40	139	92	93	92	164	206
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	3	0	13	3	3	3	0	6	31	0	3
Cap, veh/h	170	1760	710	309	1760	693	218	143	116	148	222	248
Arrive On Green	1.00	1.00	1.00	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	382	3526	1421	413	3526	1388	411	408	330	245	634	707
Grp Volume(v), veh/h	41	1095	113	127	1384	40	324	0	0	462	0	0
Grp Sat Flow(s),veh/h/ln	382	1763	1421	413	1763	1388	1149	0	0	1586	0	0
Q Serve(g_s), s	6.2	0.1	0.0	15.6	22.7	1.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.9	0.1	0.0	15.7	22.7	1.0	18.9	0.0	0.0	18.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		0.29	0.20		0.45
Lane Grp Cap(c), veh/h	170	1760	710	309	1760	693	476	0	0	618	0	0
V/C Ratio(X)	0.24	0.62	0.16	0.41	0.79	0.06	0.68	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	170	1760	710	309	1760	693	559	0	0	716	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)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	12.7	14.5	9.0	20.2	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	3.1	1.6	0.4	4.0	3.6	0.2	2.7	0.0	0.0	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	0.1	1.9	10.7	0.4	5.6	0.0	0.0	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	1.6	0.5	16.8	18.1	9.2	22.9	0.0	0.0	24.3	0.0	0.0
LnGrp LOS	B	A	A	B	B	A	C	A	A	C	A	A
Approach Vol, veh/h		1249			1551			324			462	
Approach Delay, s/veh		1.8			17.7			22.9			24.3	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	40.9	29.1	40.9	29.1
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	30.5	29.0	30.5	29.0
Max Q Clear Time (g_c+I1), s	30.9	20.4	24.7	20.9
Green Ext Time (p_c), s	0.0	4.1	5.6	2.8

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B



Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	996	326	103	1445	39	132	92	80	69
v/c Ratio	0.38	0.26	0.28	0.54	0.03	0.56	0.26	0.36	0.23
Control Delay	2.6	0.8	11.1	9.8	6.3	34.9	11.6	28.2	19.2
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	0.8	11.1	10.1	6.3	34.9	11.6	28.2	19.2
Queue Length 50th (m)	21.9	3.4	7.2	56.6	1.6	16.0	3.0	9.3	5.5
Queue Length 95th (m)	m27.6	m4.9	m10.6	84.4	m2.0	28.7	12.6	18.7	13.8
Internal Link Dist (m)	154.4			102.6			26.7		124.5
Turn Bay Length (m)		25.0	28.0		25.0	12.0		30.0	
Base Capacity (vph)	2653	1257	373	2653	1193	507	677	497	643
Starvation Cap Reductn	0	0	0	530	0	0	0	0	0
Spillback Cap Reductn	60	0	0	198	0	3	0	0	4
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.26	0.28	0.68	0.03	0.26	0.14	0.16	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	916	300	95	1329	36	121	25	60	74	15	49
Future Volume (veh/h)	0	916	300	95	1329	36	121	25	60	74	15	49
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	996	326	103	1445	39	132	27	65	80	16	53
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	2	2	2	2	2	2
Cap, veh/h	103	2449	1092	339	2449	1092	298	89	214	278	69	230
Arrive On Green	0.00	0.69	0.69	1.00	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	355	3554	1585	415	3554	1585	1332	487	1172	1304	381	1262
Grp Volume(v), veh/h	0	996	326	103	1445	39	132	0	92	80	0	69
Grp Sat Flow(s),veh/h/ln	355	1777	1585	415	1777	1585	1332	0	1659	1304	0	1643
Q Serve(g_s), s	0.0	8.5	5.6	4.8	0.0	0.0	6.6	0.0	3.4	4.0	0.0	2.5
Cycle Q Clear(g_c), s	0.0	8.5	5.6	13.2	0.0	0.0	9.1	0.0	3.4	7.3	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		0.77
Lane Grp Cap(c), veh/h	103	2449	1092	339	2449	1092	298	0	302	278	0	299
V/C Ratio(X)	0.00	0.41	0.30	0.30	0.59	0.04	0.44	0.00	0.30	0.29	0.00	0.23
Avail Cap(c_a), veh/h	103	2449	1092	339	2449	1092	559	0	628	534	0	622
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)	0.00	0.43	0.43	0.48	0.48	0.48	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.7	4.3	1.2	0.0	0.0	28.3	0.0	24.8	28.0	0.0	24.4
Incr Delay (d2), s/veh	0.0	0.2	0.3	1.1	0.5	0.0	1.0	0.0	0.6	0.6	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(50%),veh/ln	0.0	3.4	2.1	0.4	0.2	0.0	2.3	0.0	1.5	1.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	4.9	4.6	2.3	0.5	0.0	29.3	0.0	25.3	28.5	0.0	24.8
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1322			1587			224			149	
Approach Delay, s/veh		4.8			0.6			27.7			26.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	17.3	52.7	17.3	52.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	34.5	26.5	34.5
Max Q Clear Time (g_c+I1), s	11.1	10.5	9.3	15.2
Green Ext Time (p_c), s	1.7	18.1	1.1	17.8

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

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	32	24	0	0	8
Future Vol, veh/h	9	32	24	0	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	35	26	0	0	9
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.2	7.1	6.5
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	0%	0%
Vol Thru, %	78%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	41	24	8
LT Vol	9	0	0
Through Vol	32	24	0
RT Vol	0	0	8
Lane Flow Rate	45	26	9
Geometry Grp	1	1	1
Degree of Util (X)	0.05	0.029	0.008
Departure Headway (Hd)	4.013	3.983	3.456
Convergence, Y/N	Yes	Yes	Yes
Cap	897	902	1033
Service Time	2.018	1.992	1.487
HCM Lane V/C Ratio	0.05	0.029	0.009
HCM Control Delay	7.2	7.1	6.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.1	0

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	45	22	2	3	7
Future Vol, veh/h	0	45	22	2	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	49	24	2	3	8

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	39	25	0	0	26	0
Stage 1	25	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	973	1051	-	-	1588	-
Stage 1	998	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	971	1051	-	-	1588	-
Mov Cap-2 Maneuver	971	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	1007	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1051	1588	-
HCM Lane V/C Ratio	-	-	0.047	0.002	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	69	0	71	53	0
Future Vol, veh/h	44	69	0	71	53	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	75	0	77	58	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	163	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	0	-	828	973
Stage 1	-	-	0	-	937	-
Stage 2	-	-	0	-	946	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	828	973
Mov Cap-2 Maneuver	-	-	-	-	828	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	828	-	-	-
HCM Lane V/C Ratio	0.07	-	-	-
HCM Control Delay (s)	9.7	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	1	8	65	9	48
Future Vol, veh/h	46	1	8	65	9	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	1	9	71	10	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	51	0	140	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1555	-	853	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1555	-	848	1017
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	986	-	-	1555	-
HCM Lane V/C Ratio	0.063	-	-	0.006	-
HCM Control Delay (s)	8.9	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	94	33	4	12	22
Future Vol, veh/h	62	94	33	4	12	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	102	36	4	13	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	101	25	37	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	898	1051	1574	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	1051	1574	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	6.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1574	-	974	-	-
HCM Lane V/C Ratio	0.023	-	0.174	-	-
HCM Control Delay (s)	7.3	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	43	73	2	7	0	7	53	1	0	63	7
Future Vol, veh/h	0	43	73	2	7	0	7	53	1	0	63	7
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	47	79	2	8	0	8	58	1	0	68	8
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	7.5	7.5	7.7	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	0%	22%	0%
Vol Thru, %	87%	37%	78%	90%
Vol Right, %	2%	63%	0%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	116	9	70
LT Vol	7	0	2	0
Through Vol	53	43	7	63
RT Vol	1	73	0	7
Lane Flow Rate	66	126	10	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.078	0.133	0.012	0.088
Departure Headway (Hd)	4.244	3.81	4.325	4.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	837	928	814	853
Service Time	2.309	1.887	2.421	2.227
HCM Lane V/C Ratio	0.079	0.136	0.012	0.089
HCM Control Delay	7.7	7.5	7.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0	0.3

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	18	12	18	0	2	18	0	73	24	0	6
Future Vol, veh/h	2	18	12	18	0	2	18	0	73	24	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	20	13	20	0	2	20	0	79	26	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	33	0	0	76	73	27	111	78	1
Stage 1	-	-	-	-	-	-	31	31	-	41	41	-
Stage 2	-	-	-	-	-	-	45	42	-	70	37	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1579	-	-	914	817	1048	867	812	1084
Stage 1	-	-	-	-	-	-	986	869	-	974	861	-
Stage 2	-	-	-	-	-	-	969	860	-	940	864	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1579	-	-	898	806	1048	792	801	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	898	806	-	792	801	-
Stage 1	-	-	-	-	-	-	985	868	-	973	850	-
Stage 2	-	-	-	-	-	-	951	849	-	868	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	6.6	8.9	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1014	1620	-	-	1579	-	-	837
HCM Lane V/C Ratio	0.098	0.001	-	-	0.012	-	-	0.039
HCM Control Delay (s)	8.9	7.2	-	-	7.3	-	-	9.5
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	66	1	5	10
Future Vol, veh/h	0	52	66	1	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	57	72	1	5	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	94	73	0	0	73	0
Stage 1	73	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	906	989	-	-	1527	-
Stage 1	950	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	903	989	-	-	1527	-
Mov Cap-2 Maneuver	903	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	989	1527	-
HCM Lane V/C Ratio	-	-	0.057	0.004	-
HCM Control Delay (s)	-	-	8.9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	48	0	5	1	0	12	1	62	0	2	22	6
Future Vol, veh/h	48	0	5	1	0	12	1	62	0	2	22	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	0	5	1	0	13	1	67	0	2	24	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	108	101	28	103	104	67	31	0	0	67	0	0
Stage 1	32	32	-	69	69	-	-	-	-	-	-	-
Stage 2	76	69	-	34	35	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	871	789	1047	877	786	997	1582	-	-	1535	-	-
Stage 1	984	868	-	941	837	-	-	-	-	-	-	-
Stage 2	933	837	-	982	866	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	858	787	1047	871	784	997	1582	-	-	1535	-	-
Mov Cap-2 Maneuver	858	787	-	871	784	-	-	-	-	-	-	-
Stage 1	983	867	-	940	836	-	-	-	-	-	-	-
Stage 2	920	836	-	976	865	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	8.7	0.1	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1582	-	-	873	986	1535	-	-
HCM Lane V/C Ratio	0.001	-	-	0.066	0.014	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.4	8.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	2	1	43	7	2
Future Vol, veh/h	14	2	1	43	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	2	1	47	8	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	58	9	10	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	949	1073	1610	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	948	1073	1610	-	-	-
Mov Cap-2 Maneuver	948	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	973	-	-	-	-	-

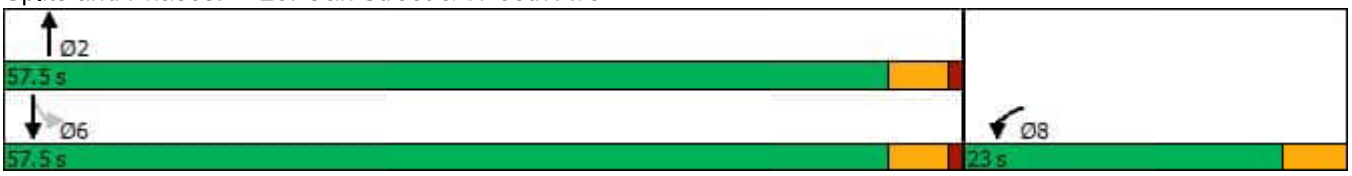
Approach	EB	NB	SB
HCM Control Delay, s	8.8	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1610	-	962	-	-
HCM Lane V/C Ratio	0.001	-	0.018	-	-
HCM Control Delay (s)	7.2	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	75	1991	57	1331
Future Volume (vph)	75	1991	57	1331
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	22.5	22.5	22.5
Total Split (s)	23.0	57.5	57.5	57.5
Total Split (%)	28.6%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	3.5	3.5	3.5
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	13.7	53.9		53.9
Actuated g/C Ratio	0.18	0.71		0.71
v/c Ratio	0.64	0.61		0.84
Control Delay	37.0	7.1		15.0
Queue Delay	0.0	0.0		11.6
Total Delay	37.0	7.1		26.6
LOS	D	A		C
Approach Delay	37.0	7.1		26.6
Approach LOS	D	A		C

Intersection Summary	
Cycle Length: 80.5	
Actuated Cycle Length: 76.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 96.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Oak Street & W 38th Ave





Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	197	2199	1509
v/c Ratio	0.64	0.61	0.84
Control Delay	37.0	7.1	15.0
Queue Delay	0.0	0.0	11.6
Total Delay	37.0	7.1	26.6
Queue Length 50th (m)	25.8	49.4	68.3
Queue Length 95th (m)	43.8	78.2	#153.9
Internal Link Dist (m)	26.0	152.1	28.0
Turn Bay Length (m)			
Base Capacity (vph)	424	3645	1823
Starvation Cap Reductn	0	0	316
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.46	0.60	1.00

Intersection Summary

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



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	75	106	1991	32	57	1331
Future Volume (veh/h)	75	106	1991	32	57	1331
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	1900	1781	1856	1900	1900	1870
Adj Flow Rate, veh/h	82	115	2164	35	62	1447
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	8	3	0	0	2
Cap, veh/h	104	146	3754	61	100	2082
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.73
Sat Flow, veh/h	698	979	5302	83	61	2932
Grp Volume(v), veh/h	198	0	1422	777	702	807
Grp Sat Flow(s),veh/h/ln	1686	0	1689	1840	1291	1617
Q Serve(g_s), s	8.0	0.0	13.9	13.9	0.0	19.0
Cycle Q Clear(g_c), s	8.0	0.0	13.9	13.9	11.5	19.0
Prop In Lane	0.41	0.58		0.05	0.09	
Lane Grp Cap(c), veh/h	251	0	2469	1346	999	1182
V/C Ratio(X)	0.79	0.00	0.58	0.58	0.70	0.68
Avail Cap(c_a), veh/h	452	0	2526	1377	1016	1210
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	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	4.4	4.4	4.1	5.1
Incr Delay (d2), s/veh	5.5	0.0	0.3	0.6	2.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	5.2	5.8	5.2	7.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.5	0.0	4.7	5.0	6.3	6.7
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	198		2199			1509
Approach Delay, s/veh	34.5		4.8			6.5
Approach LOS	C		A			A

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	56.3				56.3	14.5
Change Period (Y+Rc), s	4.5				4.5	4.0
Max Green Setting (Gmax), s	53.0				53.0	19.0
Max Q Clear Time (g_c+I1), s	15.9				21.0	10.0
Green Ext Time (p_c), s	35.9				29.2	0.7

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	41	1095	113	127	1384	40	324	462
v/c Ratio	0.38	0.64	0.18	0.93	0.81	0.06	0.83	0.88
Control Delay	20.7	13.4	4.0	87.6	21.9	7.2	38.2	39.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	13.6	4.0	87.6	21.9	7.2	38.2	39.6
Queue Length 50th (m)	3.0	74.2	2.5	15.8	82.5	1.2	33.6	50.6
Queue Length 95th (m)	10.6	71.5	8.4	#44.3	#103.4	5.6	#65.2	#87.3
Internal Link Dist (m)		102.6			88.6		78.2	31.0
Turn Bay Length (m)	28.0		15.0	20.0		15.0		
Base Capacity (vph)	109	1702	621	137	1702	725	435	586
Starvation Cap Reductn	0	126	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.69	0.18	0.93	0.81	0.06	0.74	0.79

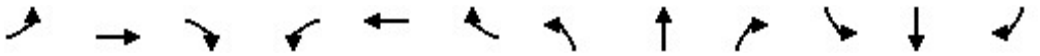
Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	931	96	108	1176	34	118	78	79	78	139	175
Future Volume (veh/h)	35	931	96	108	1176	34	118	78	79	78	139	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.88	0.98		0.88	0.99		0.93	0.98		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	1900	1856	1900	1707	1856	1856	1856	1900	1811	1441	1900	1856
Adj Flow Rate, veh/h	41	1095	113	127	1384	40	139	92	93	92	164	206
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	3	0	13	3	3	3	0	6	31	0	3
Cap, veh/h	170	1760	710	309	1760	693	218	143	116	148	222	248
Arrive On Green	1.00	1.00	1.00	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	382	3526	1421	413	3526	1388	411	408	330	245	634	707
Grp Volume(v), veh/h	41	1095	113	127	1384	40	324	0	0	462	0	0
Grp Sat Flow(s),veh/h/ln	382	1763	1421	413	1763	1388	1149	0	0	1586	0	0
Q Serve(g_s), s	6.2	0.1	0.0	15.6	22.7	1.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.9	0.1	0.0	15.7	22.7	1.0	18.9	0.0	0.0	18.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		0.29	0.20		0.45
Lane Grp Cap(c), veh/h	170	1760	710	309	1760	693	476	0	0	618	0	0
V/C Ratio(X)	0.24	0.62	0.16	0.41	0.79	0.06	0.68	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	170	1760	710	309	1760	693	559	0	0	716	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)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	12.7	14.5	9.0	20.2	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	3.1	1.6	0.4	4.0	3.6	0.2	2.7	0.0	0.0	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	0.1	1.9	10.7	0.4	5.6	0.0	0.0	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	1.6	0.5	16.8	18.1	9.2	22.9	0.0	0.0	24.3	0.0	0.0
LnGrp LOS	B	A	A	B	B	A	C	A	A	C	A	A
Approach Vol, veh/h		1249			1551			324			462	
Approach Delay, s/veh		1.8			17.7			22.9			24.3	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	40.9	29.1	40.9	29.1
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	30.5	29.0	30.5	29.0
Max Q Clear Time (g_c+I1), s	30.9	20.4	24.7	20.9
Green Ext Time (p_c), s	0.0	4.1	5.6	2.8

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	25	86	47	71	93	27	2044	48	33	1268	78
Future Volume (Veh/h)	78	25	86	47	71	93	27	2044	48	33	1268	78
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	82	26	91	49	75	98	28	2152	51	35	1335	82
Pedestrians		3			13			21			15	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			1			2			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2373	3721	510	2886	3736	771	1420			2216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2373	3721	510	2886	3736	771	1420			2216		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	0	0	82	0	0	71	94			83		
cM capacity (veh/h)	0	4	502	0	3	338	484			211		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	199	222	566	1076	589	369	668	416
Volume Left	82	49	28	0	0	35	0	0
Volume Right	91	98	0	0	51	0	0	82
cSH	0	0	484	1700	1700	211	1700	1700
Volume to Capacity	Err	Err	0.06	0.63	0.35	0.17	0.39	0.24
Queue Length 95th (m)	Err	Err	1.4	0.0	0.0	4.4	0.0	0.0
Control Delay (s)	Err	Err	1.7	0.0	0.0	7.2	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	Err	Err	0.4			1.8		
Approach LOS	F	F						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	86.5%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	32	1966	40	1	1412
Future Volume (Veh/h)	0	32	1966	40	1	1412
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	35	2137	43	1	1535
Pedestrians	25					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	2					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			55			
pX, platoon unblocked	0.63	0.63			0.63	
vC, conflicting volume	2569	759			2205	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1458	0			884	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	76	676			480	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	35	855	855	470	220	439	439	439
Volume Left	0	0	0	0	1	0	0	0
Volume Right	35	0	0	43	0	0	0	0
cSH	676	1700	1700	1700	480	1700	1700	1700
Volume to Capacity	0.05	0.50	0.50	0.28	0.00	0.26	0.26	0.26
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.6	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Lane LOS	B				A			
Approach Delay (s)	10.6	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 20: Oak Street & W 38th Ave

Movement	WB	NB	NB	NB	B8	SB	SB	B6	B6
Directions Served	LR	T	T	TR	T	LT	T	T	T
Maximum Queue (m)	37.2	21.8	17.7	18.8	1.7	57.9	48.9	43.2	23.3
Average Queue (m)	32.6	3.4	3.2	3.0	0.2	40.9	23.0	15.9	5.0
95th Queue (m)	42.5	18.4	16.9	16.3	3.5	75.3	58.4	47.4	24.3
Link Distance (m)	31.5	164.0	164.0	164.0	69.5	43.1	43.1	37.1	37.1
Upstream Blk Time (%)	56					14	1	3	0
Queuing Penalty (veh)	109					103	10	17	2
Storage Bay Dist (m)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	167	108	1696	2099
v/c Ratio	0.53	0.33	0.56	0.79
Control Delay	28.4	19.9	7.7	12.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.4	19.9	7.7	12.2
Queue Length 50th (m)	16.9	8.7	31.4	51.2
Queue Length 95th (m)	32.1	19.8	67.1	#130.5
Internal Link Dist (m)	91.7	26.0	76.0	29.6
Turn Bay Length (m)				
Base Capacity (vph)	557	578	3018	2672
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.19	0.56	0.79

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	44	58	29	21	54	17	1563	65	67	1907	62
Future Volume (veh/h)	60	44	58	29	21	54	17	1563	65	67	1907	62
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	0.99		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	1900	1900	1856	1900	1900	1900	1900	1870	1841	1900	1870	1900
Adj Flow Rate, veh/h	62	45	60	30	22	56	18	1611	67	69	1966	64
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	3	0	0	0	0	2	4	0	2	0
Cap, veh/h	161	108	107	124	95	157	70	3146	130	120	2927	95
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	447	588	580	274	518	852	17	4740	196	85	4410	143
Grp Volume(v), veh/h	167	0	0	108	0	0	596	530	570	661	690	748
Grp Sat Flow(s),veh/h/ln	1615	0	0	1643	0	0	1738	1549	1666	1414	1549	1676
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	0.0	10.9	10.9	0.0	16.9	17.0
Cycle Q Clear(g_c), s	5.6	0.0	0.0	3.4	0.0	0.0	9.8	10.9	10.9	11.5	16.9	17.0
Prop In Lane	0.37		0.36	0.28		0.52	0.03		0.12	0.10		0.09
Lane Grp Cap(c), veh/h	377	0	0	376	0	0	1213	1028	1106	1002	1028	1112
V/C Ratio(X)	0.44	0.00	0.00	0.29	0.00	0.00	0.49	0.52	0.52	0.66	0.67	0.67
Avail Cap(c_a), veh/h	673	0	0	672	0	0	1226	1042	1121	1012	1042	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	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	23.0	0.0	0.0	22.2	0.0	0.0	5.2	5.4	5.4	5.5	6.4	6.4
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.4	0.0	0.0	0.3	0.4	0.4	1.6	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(50%),veh/ln	2.5	0.0	0.0	1.5	0.0	0.0	4.2	3.9	4.2	5.2	6.3	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	22.6	0.0	0.0	5.5	5.8	5.8	7.0	8.0	7.9
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		167			108			1696			2099	
Approach Delay, s/veh		23.8			22.6			5.7			7.7	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	47.5		15.0		47.5		15.0					
Change Period (Y+Rc), s	6.0		3.5		6.0		3.5					
Max Green Setting (Gmax), s	42.0		23.5		42.0		23.5					
Max Q Clear Time (g_c+I1), s	12.9		7.6		19.0		5.4					
Green Ext Time (p_c), s	26.4		2.0		22.5		1.2					

Intersection Summary												
HCM 6th Ctrl Delay		7.9										
HCM 6th LOS		A										

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	5	3	101	3	5
Future Vol, veh/h	171	5	3	101	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	186	5	3	110	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	191	0	305	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	116	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1383	-	687	853
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1383	-	686	853
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	782	-	-	1383	-
HCM Lane V/C Ratio	0.011	-	-	0.002	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	32	1	86	22	2
Future Vol, veh/h	145	32	1	86	22	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	158	35	1	93	24	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	193	0	271	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1380	-	718	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1380	-	717	867
Mov Cap-2 Maneuver	-	-	-	-	717	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	727	-	-	1380	-
HCM Lane V/C Ratio	0.036	-	-	0.001	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	196	78	131	236
Demand Flow Rate, veh/h	199	78	135	237
Vehicles Circulating, veh/h	214	180	225	93
Vehicles Exiting, veh/h	116	180	188	165
Ped Vol Crossing Leg, #/h	24	6	6	4
Ped Cap Adj	0.997	0.999	0.999	0.999
Approach Delay, s/veh	4.9	3.7	4.5	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	199	78	135	237
Cap Entry Lane, veh/h	1109	1148	1097	1255
Entry HV Adj Factor	0.983	1.000	0.970	0.996
Flow Entry, veh/h	196	78	131	236
Cap Entry, veh/h	1087	1147	1064	1249
V/C Ratio	0.180	0.068	0.123	0.189
Control Delay, s/veh	4.9	3.7	4.5	4.5
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	1	0	0	2	2	1	2	2	1
Stage 1	-	-	-	-	-	-	1	1	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	1	1	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1622	-	-	1020	894	1084	1020	894	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1020	894	-	1020	894	-
Stage 1	-	-	-	-	-	-	1022	895	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1022	895	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	61	1608	48	106	1901
Future Vol, veh/h	22	61	1608	48	106	1901
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	24	66	1748	52	115	2066

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2836	906	0	0	1806	0
Stage 1	1780	-	-	-	-	-
Stage 2	1056	-	-	-	-	-
Critical Hdwy	5.7	7.1	-	-	5.3	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.8	3.9	-	-	3.1	-
Pot Cap-1 Maneuver	33	243	-	-	160	-
Stage 1	80	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	33	242	-	-	159	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	80	-	-	-	-	-
Stage 2	270	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	179.9	0	3.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	90	159	-
HCM Lane V/C Ratio	-	-	1.002	0.725	-
HCM Control Delay (s)	-	-	179.9	71.6	0
HCM Lane LOS	-	-	F	F	A
HCM 95th %tile Q(veh)	-	-	5.8	4.4	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	128	22	27	64	2	19	2	13	0	6	1
Future Vol, veh/h	4	128	22	27	64	2	19	2	13	0	6	1
Conflicting Peds, #/hr	6	0	3	3	0	6	4	0	4	4	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	139	24	29	70	2	21	2	14	0	7	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	166	0	0	299	298	158	306	309	81
Stage 1	-	-	-	-	-	-	162	162	-	135	135	-
Stage 2	-	-	-	-	-	-	137	136	-	171	174	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1533	-	-	1424	-	-	657	617	893	650	609	985
Stage 1	-	-	-	-	-	-	845	768	-	873	789	-
Stage 2	-	-	-	-	-	-	871	788	-	836	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1525	-	-	1420	-	-	635	597	887	621	589	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	635	597	-	621	589	-
Stage 1	-	-	-	-	-	-	840	763	-	865	768	-
Stage 2	-	-	-	-	-	-	841	767	-	815	754	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.2	10.4	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	709	1525	-	-	1420	-	-	624
HCM Lane V/C Ratio	0.052	0.003	-	-	0.021	-	-	0.012
HCM Control Delay (s)	10.4	7.4	0	-	7.6	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

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	79	28	43	55	3	12	21	28	1	31	1
Future Vol, veh/h	0	79	28	43	55	3	12	21	28	1	31	1
Conflicting Peds, #/hr	4	0	1	1	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	107	38	58	74	4	16	28	38	1	42	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	146	0	0	341	325	127	355	342	80
Stage 1	-	-	-	-	-	-	127	127	-	196	196	-
Stage 2	-	-	-	-	-	-	214	198	-	159	146	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1528	-	-	1448	-	-	617	596	929	604	583	986
Stage 1	-	-	-	-	-	-	882	795	-	810	742	-
Stage 2	-	-	-	-	-	-	793	741	-	848	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1447	-	-	561	568	928	538	556	982
Mov Cap-2 Maneuver	-	-	-	-	-	-	561	568	-	538	556	-
Stage 1	-	-	-	-	-	-	881	794	-	807	708	-
Stage 2	-	-	-	-	-	-	714	707	-	784	779	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	10.9	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	689	1522	-	-	1447	-	-	563
HCM Lane V/C Ratio	0.12	-	-	-	0.04	-	-	0.079
HCM Control Delay (s)	10.9	0	-	-	7.6	0	-	11.9
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	74	83	47	126	22
Future Vol, veh/h	48	74	83	47	126	22
Conflicting Peds, #/hr	5	23	41	0	0	41
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	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	54	83	93	53	142	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	440	219	208	0	-	0
Stage 1	196	-	-	-	-	-
Stage 2	244	-	-	-	-	-
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	578	826	1375	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	497	778	1323	-	-	-
Mov Cap-2 Maneuver	497	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	771	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	5.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1323	-	636	-	-
HCM Lane V/C Ratio	0.07	-	0.216	-	-
HCM Control Delay (s)	7.9	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	79	50	52	69	127
Future Vol, veh/h	39	79	50	52	69	127
Conflicting Peds, #/hr	5	9	0	18	18	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	14	3	0	0	0
Mvmt Flow	45	91	57	60	79	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	414	114	0	0	135	0
Stage 1	105	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.49	6.34	-	-	4.1	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.426	-	-	2.2	-
Pot Cap-1 Maneuver	581	907	-	-	1462	-
Stage 1	902	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	534	885	-	-	1438	-
Mov Cap-2 Maneuver	534	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	727	1438	-
HCM Lane V/C Ratio	-	-	0.187	0.055	-
HCM Control Delay (s)	-	-	11.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

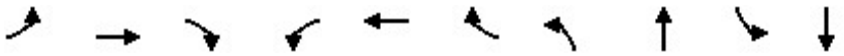
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	66	10	0	3	97	102	15	6	179	1
Future Vol, veh/h	1	0	66	10	0	3	97	102	15	6	179	1
Conflicting Peds, #/hr	0	0	0	0	0	0	39	0	0	0	0	39
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	0	72	11	0	3	105	111	16	7	195	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	580	586	235	575	578	119	235	0	0	127	0	0
Stage 1	249	249	-	329	329	-	-	-	-	-	-	-
Stage 2	331	337	-	246	249	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	429	425	809	432	430	938	1344	-	-	1472	-	-
Stage 1	759	704	-	688	650	-	-	-	-	-	-	-
Stage 2	687	645	-	762	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	383	372	780	365	377	938	1296	-	-	1472	-	-
Mov Cap-2 Maneuver	383	372	-	365	377	-	-	-	-	-	-	-
Stage 1	668	675	-	628	593	-	-	-	-	-	-	-
Stage 2	625	589	-	688	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	13.8	3.6	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1296	-	-	768	425	1472	-	-
HCM Lane V/C Ratio	0.081	-	-	0.095	0.033	0.004	-	-
HCM Control Delay (s)	8	0	-	10.2	13.8	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	243	1073	218	393	1037	210	142	1782	250	1844
v/c Ratio	1.31	1.11	0.41	1.58	0.94	0.33	0.82	0.94	0.90	0.85
Control Delay	200.8	111.5	17.8	305.9	66.3	12.8	64.1	53.0	71.5	40.3
Queue Delay	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0
Total Delay	200.8	111.5	17.8	305.9	70.5	12.8	64.1	53.0	71.5	40.3
Queue Length 50th (m)	~70.4	~181.4	16.8	~138.5	154.9	10.0	23.5	171.6	52.2	163.5
Queue Length 95th (m)	#124.6	#223.1	40.1	#199.5	#194.6	27.2	#58.8	#203.5	#99.3	183.6
Internal Link Dist (m)		92.5			154.9			79.5		31.0
Turn Bay Length (m)	45.0		30.0	65.0		120.0	75.0			
Base Capacity (vph)	186	965	534	249	1104	628	176	1889	286	2205
Starvation Cap Reductn	0	0	0	0	41	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.31	1.11	0.41	1.58	0.98	0.33	0.81	0.94	0.87	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	987	201	362	954	193	131	1385	255	230	1559	137
Future Volume (veh/h)	224	987	201	362	954	193	131	1385	255	230	1559	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1900	1870	1900	1885	1885	1900	1811	1885	1856	1885	1885	1900
Adj Flow Rate, veh/h	243	1073	218	393	1037	210	142	1505	277	250	1695	149
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, %	0	2	0	1	1	0	6	1	3	1	1	0
Cap, veh/h	191	977	437	244	1112	495	190	1617	297	274	2043	179
Arrive On Green	0.07	0.27	0.27	0.04	0.10	0.10	0.07	0.37	0.37	0.12	0.42	0.42
Sat Flow, veh/h	1810	3554	1591	1795	3582	1593	1725	4361	800	1795	4813	422
Grp Volume(v), veh/h	243	1073	218	393	1037	210	142	1183	599	250	1207	637
Grp Sat Flow(s),veh/h/ln	1810	1777	1591	1795	1791	1593	1725	1716	1730	1795	1716	1804
Q Serve(g_s), s	10.0	38.5	16.1	15.0	40.2	17.3	7.1	46.4	46.6	14.4	43.7	44.0
Cycle Q Clear(g_c), s	10.0	38.5	16.1	15.0	40.2	17.3	7.1	46.4	46.6	14.4	43.7	44.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.23
Lane Grp Cap(c), veh/h	191	977	437	244	1112	495	190	1273	642	274	1456	766
V/C Ratio(X)	1.27	1.10	0.50	1.61	0.93	0.42	0.75	0.93	0.93	0.91	0.83	0.83
Avail Cap(c_a), veh/h	191	977	437	244	1112	495	201	1274	642	292	1456	766
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	50.8	42.7	48.1	61.4	51.1	32.4	42.3	42.4	41.7	35.8	35.8
Incr Delay (d2), s/veh	156.3	59.7	4.0	290.7	13.0	2.2	13.3	12.0	20.8	29.8	4.2	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	26.3	7.3	29.1	21.8	7.9	3.9	23.2	25.0	11.5	20.6	22.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	196.8	110.4	46.7	338.8	74.3	53.3	45.8	54.3	63.1	71.5	39.9	43.6
LnGrp LOS	F	F	D	F	E	D	D	D	E	E	D	D
Approach Vol, veh/h		1534			1640			1924			2094	
Approach Delay, s/veh		115.1			135.0			56.4			44.8	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	48.5	20.6	56.9	19.0	43.5	13.1	64.4
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	37.0	18.0	52.0	15.0	37.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	12.0	42.2	16.4	48.6	17.0	40.5	9.1	46.0
Green Ext Time (p_c), s	0.0	0.0	0.2	3.3	0.0	0.0	0.1	5.9

Intersection Summary	
HCM 6th Ctrl Delay	83.5
HCM 6th LOS	F



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	107	1408	141	113	1416	51	310	292
v/c Ratio	0.86	0.69	0.17	0.89	0.69	0.06	0.76	0.64
Control Delay	80.3	24.5	8.7	78.4	13.5	5.2	34.0	26.5
Queue Delay	0.0	2.8	0.0	0.0	0.2	0.0	2.3	0.9
Total Delay	80.3	27.3	8.7	78.4	13.7	5.2	36.2	27.5
Queue Length 50th (m)	20.1	170.0	13.9	11.4	61.5	1.4	33.7	30.1
Queue Length 95th (m)	#56.7	145.0	16.8	#41.5	88.3	5.7	#58.0	49.7
Internal Link Dist (m)		102.1			88.6		78.2	31.0
Turn Bay Length (m)	28.0		15.0	20.0		15.0		
Base Capacity (vph)	125	2026	847	127	2046	912	448	501
Starvation Cap Reductn	0	485	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	125	0	56	63
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.91	0.17	0.89	0.74	0.06	0.79	0.67

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1239	124	99	1246	45	80	83	110	54	88	115
Future Volume (veh/h)	94	1239	124	99	1246	45	80	83	110	54	88	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	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	1900	1870	1767	1900	1885	1900	1900	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	107	1408	141	112	1416	51	91	94	125	61	100	131
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, %	0	2	9	0	1	0	0	0	2	0	0	0
Cap, veh/h	216	2070	867	236	2087	932	164	152	168	127	178	198
Arrive On Green	0.77	0.77	0.77	0.58	0.58	0.58	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	367	3554	1488	339	3582	1600	363	568	629	243	666	740
Grp Volume(v), veh/h	107	1408	141	112	1416	51	310	0	0	292	0	0
Grp Sat Flow(s),veh/h/ln	367	1777	1488	339	1791	1600	1560	0	0	1649	0	0
Q Serve(g_s), s	19.6	13.2	1.7	20.9	19.1	1.0	1.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	38.7	13.2	1.7	34.1	19.1	1.0	12.4	0.0	0.0	10.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		0.40	0.21		0.45
Lane Grp Cap(c), veh/h	216	2070	867	236	2087	932	484	0	0	503	0	0
V/C Ratio(X)	0.49	0.68	0.16	0.47	0.68	0.05	0.64	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	216	2070	867	236	2087	932	554	0	0	576	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)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.8	4.8	3.5	19.2	10.1	6.3	23.2	0.0	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	6.6	1.5	0.3	6.7	1.8	0.1	2.0	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(50%),veh/ln	2.1	4.6	0.6	2.2	8.7	0.4	5.3	0.0	0.0	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	6.3	3.8	25.9	11.9	6.4	25.2	0.0	0.0	23.7	0.0	0.0
LnGrp LOS	C	A	A	C	B	A	C	A	A	C	A	A
Approach Vol, veh/h		1656			1579			310			292	
Approach Delay, s/veh		7.2			12.7			25.2			23.7	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	46.8	23.2	46.8	23.2
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	37.5	22.0	37.5	22.0
Max Q Clear Time (g_c+I1), s	40.7	12.6	36.1	14.4
Green Ext Time (p_c), s	0.0	2.7	1.3	2.5

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B



Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1476	116	22	1470	67	103	76	64	56
v/c Ratio	0.54	0.09	0.11	0.54	0.05	0.50	0.29	0.32	0.21
Control Delay	15.3	3.5	11.2	13.1	6.1	34.5	22.6	29.2	19.5
Queue Delay	0.2	0.0	0.0	0.7	0.0	0.1	0.0	0.0	0.0
Total Delay	15.5	3.5	11.2	13.7	6.1	34.6	22.6	29.2	19.5
Queue Length 50th (m)	181.6	6.4	1.6	82.5	3.5	12.5	6.8	7.6	4.3
Queue Length 95th (m)	m175.7	m8.6	m2.8	117.3	m5.9	24.2	16.0	16.3	12.2
Internal Link Dist (m)	154.9			102.1			23.5		129.1
Turn Bay Length (m)		25.0	28.0		25.0	12.0		30.0	
Base Capacity (vph)	2725	1234	207	2725	1228	513	634	504	642
Starvation Cap Reductn	0	0	0	806	0	0	0	0	0
Spillback Cap Reductn	457	0	0	173	0	42	11	6	53
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.09	0.11	0.77	0.05	0.22	0.12	0.13	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1358	107	20	1352	62	95	11	59	59	12	40
Future Volume (veh/h)	0	1358	107	20	1352	62	95	11	59	59	12	40
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1476	116	22	1470	67	103	12	64	64	13	43
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	2	2	2	2	2	2
Cap, veh/h	103	2562	1143	334	2562	1143	265	39	206	247	57	190
Arrive On Green	0.00	1.00	1.00	0.72	0.72	0.72	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	338	3554	1585	320	3554	1585	1348	256	1368	1323	381	1262
Grp Volume(v), veh/h	0	1476	116	22	1470	67	103	0	76	64	0	56
Grp Sat Flow(s),veh/h/ln	338	1777	1585	320	1777	1585	1348	0	1624	1323	0	1643
Q Serve(g_s), s	0.0	0.0	0.0	1.4	13.8	0.9	5.1	0.0	2.9	3.2	0.0	2.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.4	13.8	0.9	7.2	0.0	2.9	6.1	0.0	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.77
Lane Grp Cap(c), veh/h	103	2562	1143	334	2562	1143	265	0	245	247	0	247
V/C Ratio(X)	0.00	0.58	0.10	0.07	0.57	0.06	0.39	0.00	0.31	0.26	0.00	0.23
Avail Cap(c_a), veh/h	103	2562	1143	334	2562	1143	573	0	615	549	0	622
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)	0.00	0.09	0.09	0.66	0.66	0.66	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	2.9	4.7	2.8	29.3	0.0	26.5	29.2	0.0	26.1
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.3	0.6	0.1	0.9	0.0	0.7	0.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	5.6	0.3	1.8	0.0	1.3	1.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	0.0	3.2	5.3	2.9	30.2	0.0	27.2	29.8	0.0	26.6
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1592			1559			179			120	
Approach Delay, s/veh		0.1			5.1			28.9			28.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	15.0	55.0	15.0	55.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	34.5	26.5	34.5
Max Q Clear Time (g_c+I1), s	9.2	2.0	8.1	15.8
Green Ext Time (p_c), s	1.4	28.4	0.9	17.1

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

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	85	20	0	0	3
Future Vol, veh/h	24	85	20	0	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	92	22	0	0	3
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.6	7.1	6.6
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	0%	0%
Vol Thru, %	78%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	109	20	3
LT Vol	24	0	0
Through Vol	85	20	0
RT Vol	0	0	3
Lane Flow Rate	118	22	3
Geometry Grp	1	1	1
Degree of Util (X)	0.132	0.024	0.003
Departure Headway (Hd)	4	4.027	3.574
Convergence, Y/N	Yes	Yes	Yes
Cap	900	889	990
Service Time	2.004	2.05	1.635
HCM Lane V/C Ratio	0.131	0.025	0.003
HCM Control Delay	7.6	7.1	6.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.1	0

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	12	12	18	10
Future Vol, veh/h	0	14	12	12	18	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	13	13	20	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	71	20	0	0	26	0
Stage 1	20	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	933	1058	-	-	1588	-
Stage 1	1003	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	1058	-	-	1588	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	958	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	4.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1058	1588	-
HCM Lane V/C Ratio	-	-	0.014	0.012	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	59	78	0	46	43	0
Future Vol, veh/h	59	78	0	46	43	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	85	0	50	47	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	149	0	157	107
Stage 1	-	-	-	-	107	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1432	-	834	947
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1432	-	834	947
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	972	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	834	-	-	1432	-
HCM Lane V/C Ratio	0.056	-	-	-	-
HCM Control Delay (s)	9.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	5	31	35	3	51
Future Vol, veh/h	52	5	31	35	3	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	5	34	38	3	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	62	0	166	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1541	-	824	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1541	-	805	1005
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	897	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	991	-	-	1541	-
HCM Lane V/C Ratio	0.059	-	-	0.022	-
HCM Control Delay (s)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	62	86	8	4	57
Future Vol, veh/h	42	62	86	8	4	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	67	93	9	4	62

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	230	35	66	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	195	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	758	1038	1536	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	712	1038	1536	-	-	-
Mov Cap-2 Maneuver	712	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	6.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1536	-	876	-	-
HCM Lane V/C Ratio	0.061	-	0.129	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

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	0	51	60	0	27	0	27	43	2	0	51	27
Future Vol, veh/h	0	51	60	0	27	0	27	43	2	0	51	27
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	55	65	0	29	0	29	47	2	0	55	29
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	7.6	7.6	7.9	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	0%	0%	0%
Vol Thru, %	60%	46%	100%	65%
Vol Right, %	3%	54%	0%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	111	27	78
LT Vol	27	0	0	0
Through Vol	43	51	27	51
RT Vol	2	60	0	27
Lane Flow Rate	78	121	29	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0.131	0.036	0.095
Departure Headway (Hd)	4.318	3.913	4.419	4.047
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	819	900	815	872
Service Time	2.403	2.006	2.419	2.135
HCM Lane V/C Ratio	0.095	0.134	0.036	0.097
HCM Control Delay	7.9	7.6	7.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.1	0.3

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	16	18	7	28	28
Future Vol, veh/h	0	16	18	7	28	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	20	8	30	30

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	114	24	0	0	28	0
Stage 1	24	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	882	1052	-	-	1585	-
Stage 1	999	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	865	1052	-	-	1585	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1585	-
HCM Lane V/C Ratio	-	-	0.017	0.019	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	0	2	0	0	4	4	42	1	8	61	32
Future Vol, veh/h	15	0	2	0	0	4	4	42	1	8	61	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	2	0	0	4	4	46	1	9	66	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	159	157	84	158	174	47	101	0	0	47	0	0
Stage 1	102	102	-	55	55	-	-	-	-	-	-	-
Stage 2	57	55	-	103	119	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	807	735	975	808	719	1022	1491	-	-	1560	-	-
Stage 1	904	811	-	957	849	-	-	-	-	-	-	-
Stage 2	955	849	-	903	797	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	798	728	975	801	713	1022	1491	-	-	1560	-	-
Mov Cap-2 Maneuver	798	728	-	801	713	-	-	-	-	-	-	-
Stage 1	901	806	-	954	846	-	-	-	-	-	-	-
Stage 2	948	846	-	896	792	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	8.5	0.6	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1491	-	-	815	1022	1560	-	-
HCM Lane V/C Ratio	0.003	-	-	0.023	0.004	0.006	-	-
HCM Control Delay (s)	7.4	0	-	9.5	8.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	0	4	49	27	10
Future Vol, veh/h	4	0	4	49	27	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	4	53	29	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	96	35	40	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	903	1038	1570	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	900	1038	1570	-	-	-
Mov Cap-2 Maneuver	900	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	962	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1570	-	900	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	64	0	55	48	0
Future Vol, veh/h	80	64	0	55	48	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	70	0	60	52	0
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	7.9	7	7.8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	100%
Vol Thru, %	0%	0%	0%
Vol Right, %	100%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	55	144	48
LT Vol	0	80	48
Through Vol	0	0	0
RT Vol	55	64	0
Lane Flow Rate	60	157	52
Geometry Grp	1	1	1
Degree of Util (X)	0.061	0.173	0.065
Departure Headway (Hd)	3.647	3.97	4.456
Convergence, Y/N	Yes	Yes	Yes
Cap	965	897	795
Service Time	1.732	2.022	2.531
HCM Lane V/C Ratio	0.062	0.175	0.065
HCM Control Delay	7	7.9	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.6	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	107	1408	141	113	1416	51	310	292
v/c Ratio	0.86	0.69	0.17	0.89	0.69	0.06	0.76	0.64
Control Delay	66.2	12.0	5.3	78.4	13.5	5.2	34.0	26.5
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	12.1	5.3	78.4	13.5	5.2	34.0	26.5
Queue Length 50th (m)	15.6	84.2	7.4	11.4	61.5	1.4	33.7	30.1
Queue Length 95th (m)	#63.4	76.2	13.6	#41.5	88.3	5.7	#58.0	49.7
Internal Link Dist (m)		102.1			88.6		78.2	31.0
Turn Bay Length (m)	28.0		15.0	20.0		15.0		
Base Capacity (vph)	125	2026	847	127	2046	912	448	501
Starvation Cap Reductn	0	90	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.73	0.17	0.89	0.69	0.06	0.69	0.58

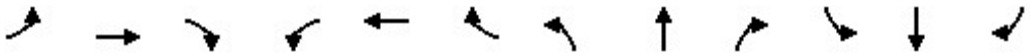
Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1239	124	99	1246	45	80	83	110	54	88	115
Future Volume (veh/h)	94	1239	124	99	1246	45	80	83	110	54	88	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	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	1900	1870	1767	1900	1885	1900	1900	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	107	1408	141	112	1416	51	91	94	125	61	100	131
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, %	0	2	9	0	1	0	0	0	2	0	0	0
Cap, veh/h	216	2070	867	189	2087	932	164	152	168	127	178	198
Arrive On Green	0.39	0.39	0.39	0.58	0.58	0.58	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	367	3554	1488	339	3582	1600	363	568	629	243	666	740
Grp Volume(v), veh/h	107	1408	141	112	1416	51	310	0	0	292	0	0
Grp Sat Flow(s),veh/h/ln	367	1777	1488	339	1791	1600	1560	0	0	1649	0	0
Q Serve(g_s), s	20.1	23.0	4.3	17.8	19.1	1.0	1.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	39.2	23.0	4.3	40.8	19.1	1.0	12.4	0.0	0.0	10.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		0.40	0.21		0.45
Lane Grp Cap(c), veh/h	216	2070	867	189	2087	932	484	0	0	503	0	0
V/C Ratio(X)	0.49	0.68	0.16	0.59	0.68	0.05	0.64	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	216	2070	867	189	2087	932	554	0	0	576	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.3	15.9	10.2	28.2	10.1	6.3	23.2	0.0	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	6.6	1.5	0.3	13.0	1.8	0.1	2.0	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(50%),veh/ln	2.3	11.1	1.7	2.7	8.7	0.4	5.3	0.0	0.0	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	17.4	10.6	41.1	11.9	6.4	25.2	0.0	0.0	23.7	0.0	0.0
LnGrp LOS	D	B	B	D	B	A	C	A	A	C	A	A
Approach Vol, veh/h		1656			1579			310			292	
Approach Delay, s/veh		18.1			13.8			25.2			23.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	46.8	23.2	46.8	23.2
Change Period (Y+Rc), s	6.0	4.5	6.0	4.5
Max Green Setting (Gmax), s	37.5	22.0	37.5	22.0
Max Q Clear Time (g_c+I1), s	41.2	12.6	42.8	14.4
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	44	58	29	21	54	17	1563	65	67	1907	62
Future Volume (Veh/h)	60	44	58	29	21	54	17	1563	65	67	1907	62
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			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
Hourly flow rate (vph)	62	45	60	30	22	56	18	1611	67	69	1966	64
Pedestrians		3			1			10			2	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	2781	3854	700	2567	3852	574	2033			1679		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2781	3854	700	2567	3852	574	2033			1679		
tC, single (s)	7.5	6.5	7.0	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	84	0	0	88	94			82		
cM capacity (veh/h)	0	3	375	0	3	466	281			386		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	167	108	421	806	470	560	983	556
Volume Left	62	30	18	0	0	69	0	0
Volume Right	60	56	0	0	67	0	0	64
cSH	0	0	281	1700	1700	386	1700	1700
Volume to Capacity	Err	Err	0.06	0.47	0.28	0.18	0.58	0.33
Queue Length 95th (m)	Err	Err	1.5	0.0	0.0	4.9	0.0	0.0
Control Delay (s)	Err	Err	2.3	0.0	0.0	5.6	0.0	0.0
Lane LOS	F	F	A			A		
Approach Delay (s)	Err	Err	0.6			1.5		
Approach LOS	F	F						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	95.7%	ICU Level of Service	F	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	23	1639	109	0	1930
Future Volume (Veh/h)	0	23	1639	109	0	1930
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	25	1782	118	0	2098
Pedestrians	33					
Lane Width (m)	3.7					
Walking Speed (m/s)	1.1					
Percent Blockage	3					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			55			
pX, platoon unblocked	0.66	0.66			0.66	
vC, conflicting volume	2398	686			1933	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1335	0			634	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	95	702			617	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	25	713	713	474	300	599	599	599
Volume Left	0	0	0	0	0	0	0	0
Volume Right	25	0	0	118	0	0	0	0
cSH	702	1700	1700	1700	617	1700	1700	1700
Volume to Capacity	0.04	0.42	0.42	0.28	0.00	0.35	0.35	0.35
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.3	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

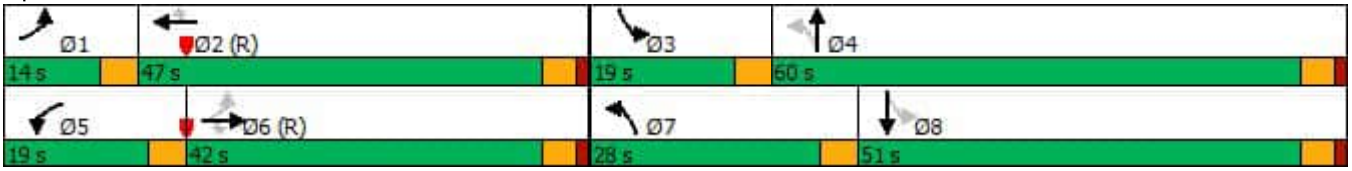
Intersection: 20: Oak Street & W 38th Ave

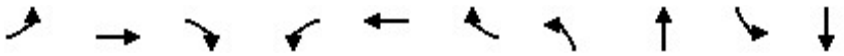
Movement	WB	NB	NB	NB	SB	SB	SB
Directions Served	LR	T	T	TR	LT	T	T
Maximum Queue (m)	28.4	3.5	0.9	5.6	91.1	89.0	43.0
Average Queue (m)	18.2	0.2	0.1	0.8	52.4	37.7	7.8
95th Queue (m)	32.6	3.5	2.0	5.3	105.0	96.5	44.3
Link Distance (m)	29.8	244.2	244.2	244.2	90.5	90.5	90.5
Upstream Blk Time (%)	11				2	0	0
Queuing Penalty (veh)	10				13	2	0
Storage Bay Dist (m)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	169	774	157	307	1022	186	206	1683	229	1005
Future Volume (vph)	169	774	157	307	1022	186	206	1683	229	1005
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		7	4	3	8
Permitted Phases	6		6			2	4		8	
Detector Phase	1	6	6	5	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	30.0	30.0	9.0	42.0	9.0	42.0
Total Split (s)	14.0	42.0	42.0	19.0	47.0	47.0	28.0	60.0	19.0	51.0
Total Split (%)	10.0%	30.0%	30.0%	13.6%	33.6%	33.6%	20.0%	42.9%	13.6%	36.4%
Yellow Time (s)	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	4.0	3.5
All-Red Time (s)	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	0.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	48.0	37.0	37.0	15.0	42.0	42.0	71.5	55.0	69.3	53.5
Actuated g/C Ratio	0.34	0.26	0.26	0.11	0.30	0.30	0.51	0.39	0.50	0.38
v/c Ratio	0.96	0.85	0.36	0.90	0.99	0.34	0.70	1.00	0.96	0.58
Control Delay	90.2	58.9	11.5	84.0	70.0	8.2	32.6	61.3	86.5	36.2
Queue Delay	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	90.2	58.9	11.5	84.0	72.6	8.2	32.6	61.3	86.5	36.2
LOS	F	E	B	F	E	A	C	E	F	D
Approach Delay		56.9			67.0			58.5		44.8
Approach LOS		E			E			E		D

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 68 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 57.3	Intersection LOS: E
Intersection Capacity Utilization 103.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 80: Oak Street & W 41 Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	798	162	316	1054	192	212	1973	236	1143
v/c Ratio	0.96	0.85	0.36	0.90	0.99	0.34	0.70	1.00	0.96	0.58
Control Delay	90.2	58.9	11.5	84.0	70.0	8.2	32.6	61.3	86.5	36.2
Queue Delay	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	90.2	58.9	11.5	84.0	72.6	8.2	32.6	61.3	86.5	36.2
Queue Length 50th (m)	32.3	111.0	4.6	43.8	146.7	6.0	30.1	196.7	49.5	90.2
Queue Length 95th (m)	#78.9	136.1	23.3	#72.4	#196.6	21.4	51.7	#234.7	#106.5	115.2
Internal Link Dist (m)		92.5			154.4			79.5		31.0
Turn Bay Length (m)	45.0		30.0	65.0		120.0	75.0		70.0	
Base Capacity (vph)	182	936	445	351	1063	572	386	1979	246	1954
Starvation Cap Reductn	0	0	0	0	12	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.85	0.36	0.90	1.00	0.34	0.55	1.00	0.96	0.58

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	774	157	307	1022	186	206	1683	231	229	1005	104
Future Volume (veh/h)	169	774	157	307	1022	186	206	1683	231	229	1005	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1678	1781	1856	1870	1811	1870	1870	1870	1885	1856
Adj Flow Rate, veh/h	174	798	162	316	1054	192	212	1735	238	236	1036	107
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	3	15	8	3	2	6	2	2	2	1	3
Cap, veh/h	180	932	356	353	1058	454	325	1775	242	244	1923	198
Arrive On Green	0.07	0.26	0.26	0.21	0.60	0.60	0.09	0.39	0.39	0.11	0.41	0.41
Sat Flow, veh/h	1781	3526	1348	3291	3526	1512	1725	4518	615	1781	4719	486
Grp Volume(v), veh/h	174	798	162	316	1054	192	212	1304	669	236	753	390
Grp Sat Flow(s),veh/h/ln	1781	1763	1348	1646	1763	1512	1725	1702	1729	1781	1716	1774
Q Serve(g_s), s	10.0	30.1	14.1	13.1	41.6	9.5	10.1	52.8	53.6	14.2	23.3	23.4
Cycle Q Clear(g_c), s	10.0	30.1	14.1	13.1	41.6	9.5	10.1	52.8	53.6	14.2	23.3	23.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.27
Lane Grp Cap(c), veh/h	180	932	356	353	1058	454	325	1337	679	244	1398	723
V/C Ratio(X)	0.97	0.86	0.45	0.90	1.00	0.42	0.65	0.98	0.98	0.97	0.54	0.54
Avail Cap(c_a), veh/h	180	932	356	353	1058	454	461	1337	679	244	1398	723
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	49.0	43.1	54.2	27.9	21.5	24.1	41.8	42.1	44.6	31.5	31.5
Incr Delay (d2), s/veh	57.5	10.0	4.1	20.9	24.3	2.4	2.2	18.9	30.5	47.7	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	15.4	5.5	6.5	20.9	3.7	4.7	27.2	30.2	12.0	10.6	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.7	59.0	47.2	75.1	52.2	23.9	26.3	60.7	72.6	92.4	31.9	32.3
LnGrp LOS	F	E	D	E	D	C	C	E	E	F	C	C
Approach Vol, veh/h		1134			1562			2185			1379	
Approach Delay, s/veh		63.1			53.3			61.0			42.4	
Approach LOS		E			D			E			D	

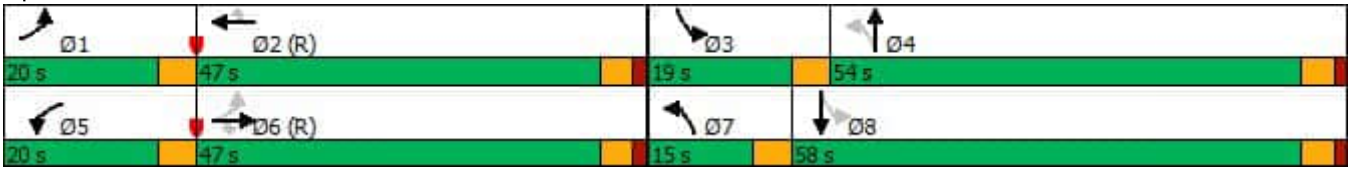
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	47.0	19.0	60.0	19.0	42.0	16.9	62.1
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	42.0	15.0	55.0	15.0	37.0	24.0	46.0
Max Q Clear Time (g_c+I1), s	12.0	43.6	16.2	55.6	15.1	32.1	12.1	25.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.8	0.8	15.7

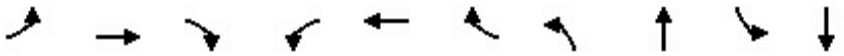
Intersection Summary	
HCM 6th Ctrl Delay	55.4
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	224	987	201	362	954	193	131	1385	230	1559
Future Volume (vph)	224	987	201	362	954	193	131	1385	230	1559
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		7	4	3	8
Permitted Phases	6		6			2	4		8	
Detector Phase	1	6	6	5	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.0	30.0	30.0	9.0	30.0	30.0	9.0	42.0	9.0	42.0
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	15.0	54.0	19.0	58.0
Total Split (%)	14.3%	33.6%	33.6%	14.3%	33.6%	33.6%	10.7%	38.6%	13.6%	41.4%
Yellow Time (s)	4.0	3.5	3.5	4.0	3.5	3.5	4.0	3.5	4.0	3.5
All-Red Time (s)	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	0.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	58.9	42.0	42.0	16.0	42.1	42.1	60.6	49.0	69.0	53.4
Actuated g/C Ratio	0.42	0.30	0.30	0.11	0.30	0.30	0.43	0.35	0.49	0.38
v/c Ratio	0.93	1.00	0.41	0.98	0.95	0.35	0.78	1.00	1.01	0.94
Control Delay	76.7	76.1	27.1	100.6	58.3	10.0	57.1	65.9	97.4	51.9
Queue Delay	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	76.1	27.1	100.6	60.6	10.0	57.1	65.9	97.4	51.9
LOS	E	E	C	F	E	B	E	E	F	D
Approach Delay		69.3			63.7			65.3		57.3
Approach LOS		E			E			E		E

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 30 (21%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 63.4	Intersection LOS: E
Intersection Capacity Utilization 99.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 80: Oak Street & W 41 Ave



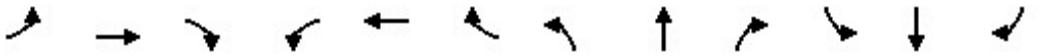


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	243	1073	218	393	1037	210	142	1782	250	1844
v/c Ratio	0.93	1.00	0.41	0.98	0.95	0.35	0.78	1.00	1.01	0.94
Control Delay	76.7	76.1	27.1	100.6	58.3	10.0	57.1	65.9	97.4	51.9
Queue Delay	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	76.1	27.1	100.6	60.6	10.0	57.1	65.9	97.4	51.9
Queue Length 50th (m)	50.7	156.7	30.4	56.3	147.7	11.0	22.9	~178.3	~54.4	179.0
Queue Length 95th (m)	#101.0	#203.8	53.8	#90.6	#187.9	24.7	#55.0	#215.2	#110.7	#211.2
Internal Link Dist (m)		92.5			154.9			79.5		31.0
Turn Bay Length (m)	45.0		30.0	65.0		120.0	75.0			
Base Capacity (vph)	264	1073	535	400	1088	605	188	1781	248	1964
Starvation Cap Reductn	0	0	0	0	20	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	1.00	0.41	0.98	0.97	0.35	0.76	1.00	1.01	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	987	201	362	954	193	131	1385	255	230	1559	137
Future Volume (veh/h)	224	987	201	362	954	193	131	1385	255	230	1559	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1900	1870	1900	1885	1885	1900	1811	1885	1856	1885	1885	1900
Adj Flow Rate, veh/h	243	1073	218	393	1037	210	142	1505	277	250	1695	149
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, %	0	2	0	1	1	0	6	1	3	1	1	0
Cap, veh/h	266	1066	478	398	1090	485	181	1526	280	245	1877	165
Arrive On Green	0.11	0.30	0.30	0.23	0.61	0.61	0.07	0.35	0.35	0.11	0.39	0.39
Sat Flow, veh/h	1810	3554	1592	3483	3582	1593	1725	4360	800	1795	4812	422
Grp Volume(v), veh/h	243	1073	218	393	1037	210	142	1183	599	250	1207	637
Grp Sat Flow(s),veh/h/ln	1810	1777	1592	1742	1791	1593	1725	1716	1729	1795	1716	1803
Q Serve(g_s), s	13.3	42.0	15.5	15.7	37.7	9.8	7.3	47.9	48.2	15.0	46.4	46.6
Cycle Q Clear(g_c), s	13.3	42.0	15.5	15.7	37.7	9.8	7.3	47.9	48.2	15.0	46.4	46.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.23
Lane Grp Cap(c), veh/h	266	1066	478	398	1090	485	181	1201	605	245	1339	704
V/C Ratio(X)	0.91	1.01	0.46	0.99	0.95	0.43	0.78	0.99	0.99	1.02	0.90	0.90
Avail Cap(c_a), veh/h	274	1066	478	398	1090	485	201	1201	605	245	1339	704
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	49.0	39.7	53.9	26.4	21.0	34.1	45.1	45.2	44.9	40.2	40.2
Incr Delay (d2), s/veh	31.9	29.1	3.1	37.7	15.7	2.3	16.7	22.4	33.8	62.5	8.7	15.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	24.1	7.0	9.1	18.3	4.0	4.2	25.5	27.7	9.7	22.6	25.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	78.1	42.9	91.6	42.1	23.3	50.8	67.6	79.0	107.4	48.9	55.5
LnGrp LOS	E	F	D	F	D	C	D	E	E	F	D	E
Approach Vol, veh/h		1534			1640			1924			2094	
Approach Delay, s/veh		71.6			51.5			69.9			57.9	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	47.6	19.0	54.0	20.0	47.0	13.4	59.6
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	16.0	42.0	15.0	49.0	16.0	42.0	11.0	53.0
Max Q Clear Time (g_c+I1), s	15.3	39.7	17.0	50.2	17.7	44.0	9.3	48.6
Green Ext Time (p_c), s	0.1	2.1	0.0	0.0	0.0	0.0	0.1	4.3

Intersection Summary	
HCM 6th Ctrl Delay	62.6
HCM 6th LOS	E

APPENDIX D

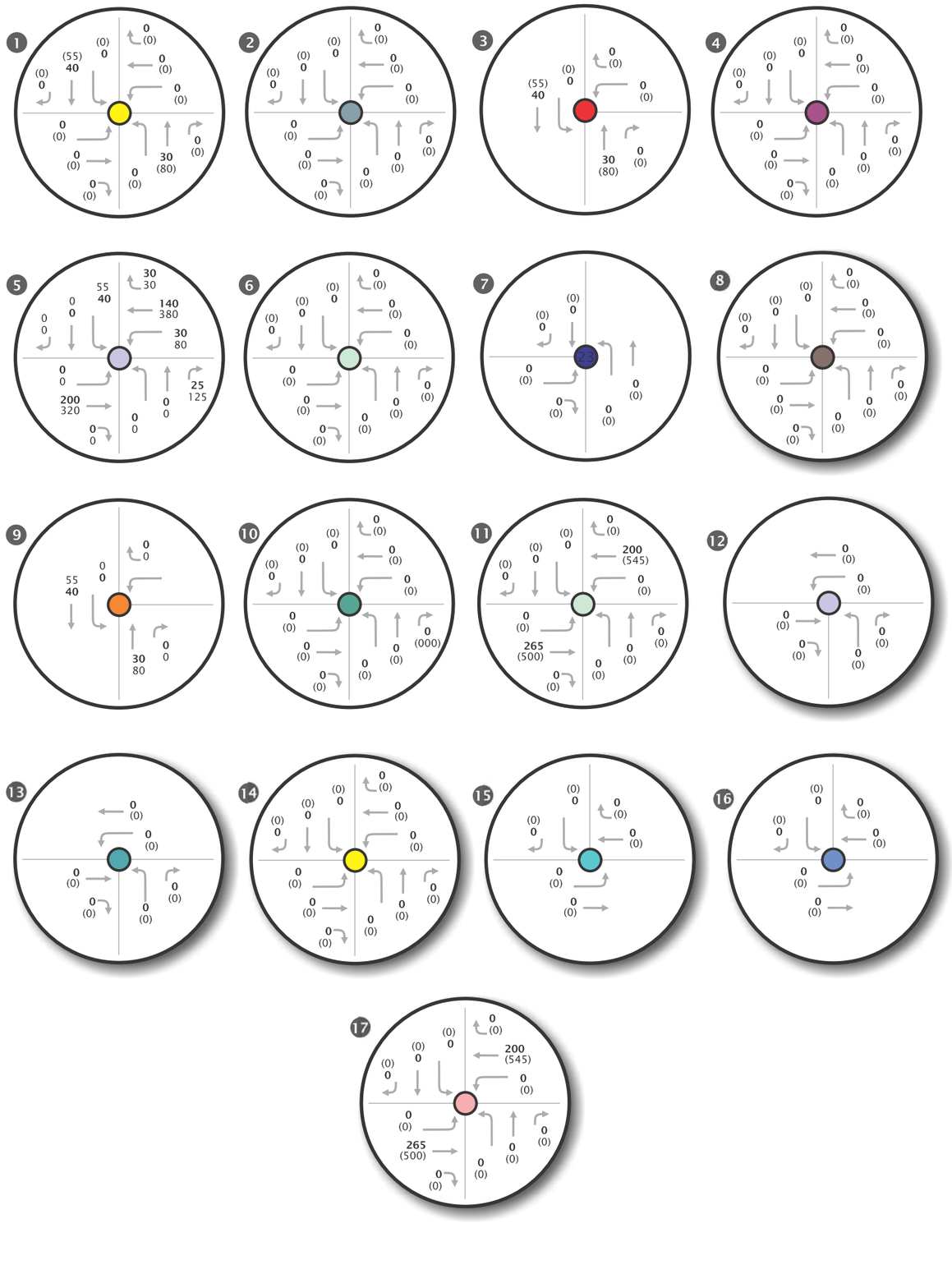
Traffic Volumes of Adjacent Background Sites

Table D.1: Heather Land Rezoning Peak Hour Site Vehicle Trip Generation Estimate

LAND USE	QUANTITY	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Multifamily Housing (High-Rise)	4,202 d.u.	102	823	924	551	247	798
Shopping Centre	62,375 ft²	34	21	54	105	114	219
Medical-Dental Office Building	-	0	0	0	0	0	0
Day Care Center	125 children	41	37	78	37	42	79
Recreational Community Center	10,000 ft²	13	6	19	12	13	25
Elementary School*	-	36	22	58	11	18	29
TOTAL		225	908	1,134	716	434	1,150

Table D.2.: JCC Peak Hour Site Vehicle Trip Generation Estimate

LAND USE	DENSITY*		AM PEAK			PM PEAK		
			IN	OUT	2-WAY	IN	OUT	2-WAY
Residential	630	units	15	123	139	83	37	120
School	60	staff	45	5	50	5	5	10
	300	students	147	120	267	74	92	166
Community Centre	188,582	sqft GFA	267	95	362	5	46	51
Childcare	102	students	42	37	80	38	43	81
Total			516	381	897	204	223	427



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- Traffic Signal
- Minor Stop
- Pedestrian Signal
- Roundabout
- Arterial
- Collector
- Local

Exhibit D.3

Oakridge Centre Site Traffic Forecasts

04-18-0448

Oak Green
July 2019

bunt & associates