KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

Memorandum

July 27, 2023 Project# 29273

To: Eric Hahn, PE – City of Vancouver

Cc: Gary Vance – Vance Development LLC

From: Kristine Connolly, PE, Megan Mannion, & Ana Silva

Project: SE 192nd Avenue CPA and Zone Change

Subject: Transportation Impact Analysis (Proposed CPA and Zone Change)

This transportation impact analysis documents the traffic impacts of the proposed Comprehensive Plan Amendment (CPA) and Zone Change request (from existing R-6 zoning to R-30 zoning) for the 9.85 acres of land on the northwest corner of SE 15th Street and SE 192nd Avenue in Vancouver. With approval of the proposed CPA and Zone Change request, site development is expected to commence in 2027. Further traffic analysis and concurrency review of a specific site development plan will be provided under separate cover at a later date as part of a site land use application assuming approval of the CPA and Zone Change request.

A summary of the findings and recommendations of the CPA and Zone Change traffic analysis is provided below. The methodology of our analysis, pertinent findings, and our recommendations are documented herein.

Findings

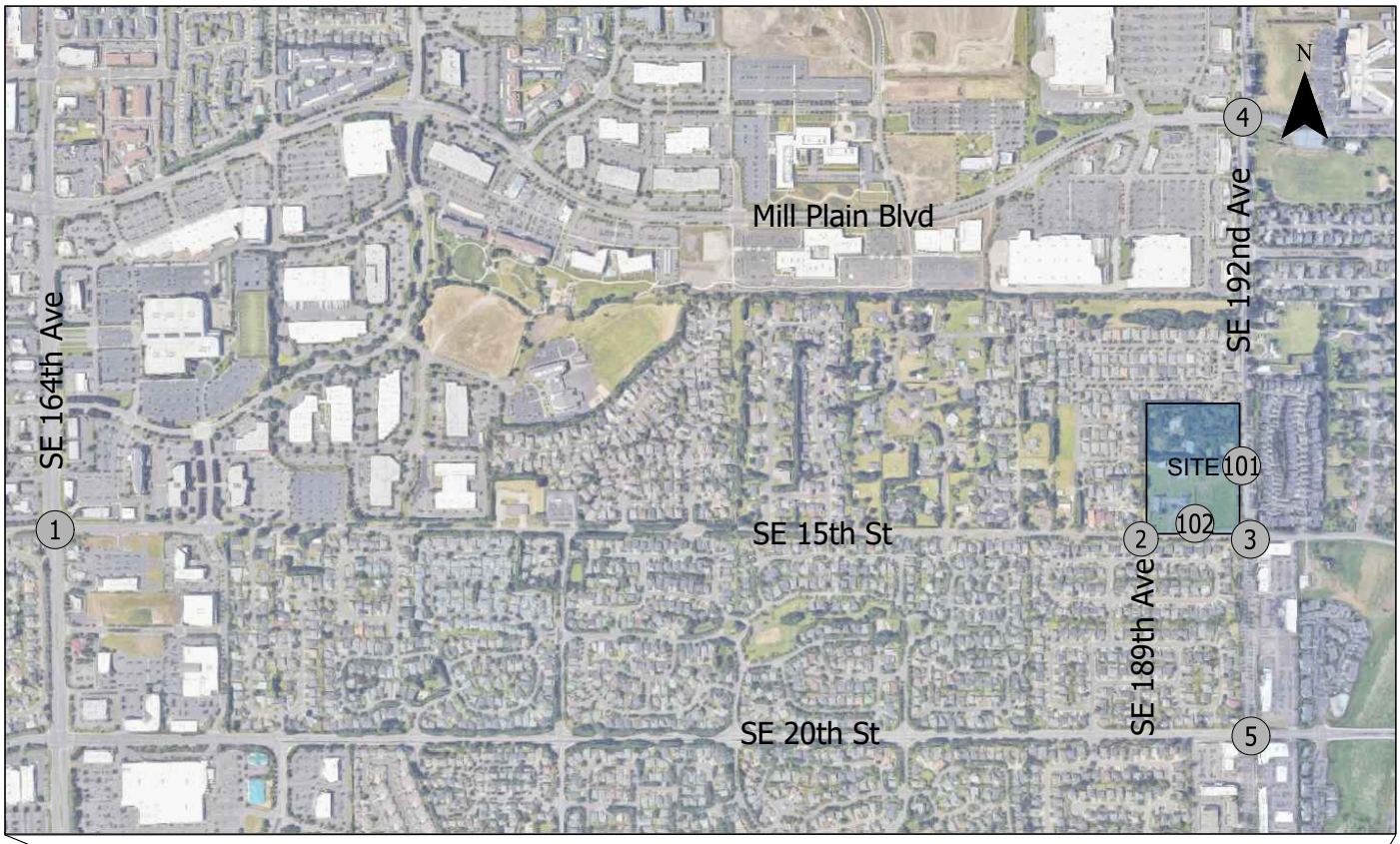
- All of the study intersections were found to operate acceptably under opening year (2027) and five-year horizon (2032) traffic conditions with reasonable worst-case development of the site under both the existing (R-6) and proposed (R-30) zoning.
- The eastbound left-turn queues at SE 192nd Avenue / SE 15th Street are anticipated to exceed the currently available storage length under future five-year 2032 background (existing zoning) and total (proposed zoning) traffic conditions during the AM and PM peak hours assuming reasonable worst-case development of the site under both the existing (R-6) and proposed (R-30) zoning.
  - Subject to City of Vancouver direction and the specific traffic impacts of potential future site development, the eastbound left-turn lane at SE 192nd Avenue / SE 15th Street may need to be extended to provide up to 175 feet of storage based on the projections in this study.
  - The actual turn lane storage length needs will depend in part on the density of site development that is proposed in the future and can be best assessed at the time of site plan application as required by the Vancouver Municipal Code (VMC, Reference 1).
- No safety-based mitigation needs were identified based on review of historic crash data at the study intersections.
- Washington State Department of Transportation (WSDOT) volume-based criteria for providing turn lanes at the anticipated site driveways on SE 192nd Avenue and SE 15th Street are not met under either weekday AM or PM peak hour traffic conditions. Southbound volumes on SE 192nd Avenue do meet the criteria for considering a right-turn pocket or taper; however, installation of tapers is not recommended given the presence of the bicycle lane and intersection sight distance considerations. Potential turn lane needs at the site access driveways can be revisited at the time of a future site development application.

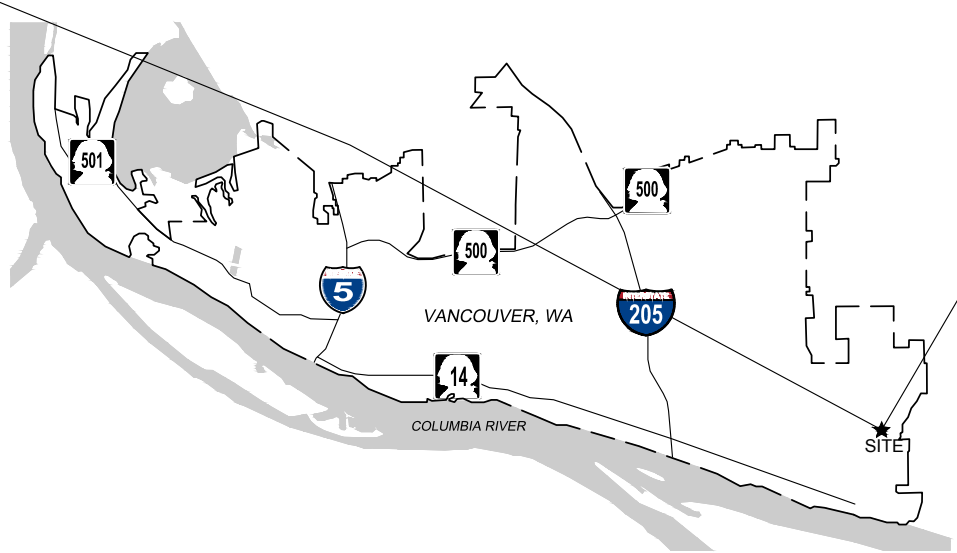
Recommendations

- Subject to City of Vancouver direction and per standard City development review practice, future site development applications for the study site (as well as other development in the area) should continue to assess the need for additional eastbound left-turn lane queue storage on SE 15th Street at SE 192nd Avenue. The City of Vancouver can monitor turn lane storage length needs through the City's development review process and require an extension of the turn lane in conjunction with a future site plan application based on the documented turn lane storage needs at the time of site plan application in accordance with the VMC.

INTRODUCTION

Vance Development LLC is proposing a CPA and Zone Change request for the 9.85 acres of land on the northwest corner of SE 15th Street and SE 192nd Avenue from its existing R-6 zoning designation to R-30. Access to homes within the new subdivision is assumed to be provide via SE 192nd Avenue and SE 15th Street. Figure 1 shows the site vicinity map and Figure 2 shows a preliminary concept site development plan for CPA and Zone Change assessment purposes. A specific site development plan will be provided under separate cover at a later date as part of a site land use application assuming approval of the CPA and Zone Change request.

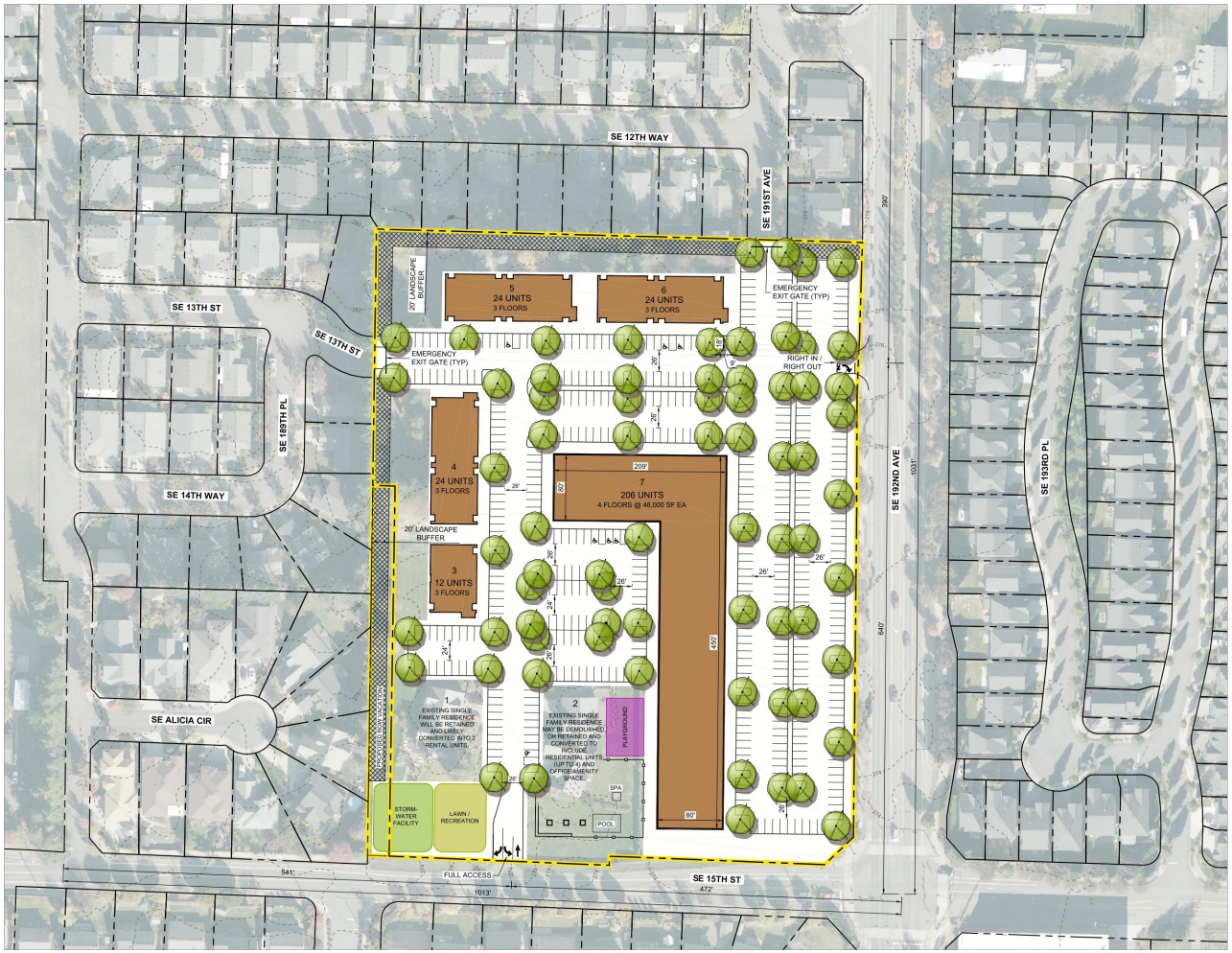




(#) - STUDY INTERSECTION

Site Vicinity Map
Vancouver, WA

Figure
1



Conceptual Development Plan Information

Gross Area: = 9.85 ac
Street Vacation = 0.27 ac
Total Gross Area = 10.12 ac*

Development Standards: Vancouver, Washington
Existing Zoning Base: R-6
Proposed Re-Zoning: R-30 (Chapter 20.420.040)

Net Density - Min & Max	= 22.1 - 30 units / ac
Lot Size - Min	= 1,500 sf
Lot Coverage - Max	= 55%
Front Yard Setback - Min	= 10'
Rear & Through Lot Yard - Min	= 0' / 5'
Side Yard Setback - Min	= 0' / 5'
Street Side Yard Setback - Min	= 10'
Landscaping - Min	= 10% net area

Proposed Development:

Existing SF Building Conversion	= 6 units
Apartment	= 290 units
Total Units	= 296 units or 29.25 units / gross area*
Total Proposed Parking (9' X 18' typ)	= 511 spaces (10 ADA)
	= (1.73 spaces / unit)

Notes:
1. Map information based on GIS data obtained from Clark County and Microsoft Bing. Survey data was not used for this plan and area calculations are approximate. DOWL has not verified accuracy of this information.
* Concept plan does not reflect potential ROW dedication along SE 192nd Avenue or SE 15th Street.

Legend
- Project Boundary
- Property Lines
- 20' Landscape Buffer

N

6/14/2023

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SCALE IN FEET

DOWL
7200 NE 41st Street, Suite 204
Vancouver, WA 98662
360.314.2391
Project No. 2481.14946.01
Contact: Jessica Herceg

SE 192nd Avenue Comprehensive Plan Amendment and Zone Change

Conceptual Site Plan

Vancouver, Wa

RECEIVED FROM DOWL: 06/14/2023

Preliminary Concept Site Plan
Vancouver, WA

Figure
2

SCOPE OF THE REPORT

This analysis determines the transportation-related impacts associated with the proposed CPA and Zone Change. The study intersections and overall study area for this project were determined based on a review of existing travel patterns, the traffic impact analysis requirements pursuant to VMC Sections 11.80.080 and 11.80.130, the City's Traffic Study Guidelines, and direction provided by City of Vancouver staff.

Study Intersections

Five study intersections were identified by City of Vancouver staff as shown in Figure 1 and listed below.

1. SE 164th Avenue and SE 15th Street
2. SE 189th Avenue and SE 15th Street
3. SE 192nd Avenue and SE 15th Street
4. SE 192nd Avenue and Mill Plain Boulevard
5. SE 192nd Avenue and SE 20th Street

Analysis Periods

Weekday AM and PM peak hour traffic conditions were analyzed at the study intersections. Traffic counts were collected in June 2023 at Intersections 1-3, and in 2017 at Intersections 3-5. The previous and current traffic counts at Intersection 3 were compared and the June 2017 counts were generally higher than the counts collected in June 2023. Therefore, no growth factor was applied to the 2017 counts at Intersections 4 and 5 to reflect existing year 2023 conditions. *Appendix "A" includes the count data at each of the study intersections.*

The remaining sections of this report address the following transportation issues:

- Analysis methodology;
- Existing land use and transportation system conditions within the site vicinity;
- Study intersection crash history review;
- Reasonable worst-case development scenario trip generation estimates for the site under the existing and proposed zoning;
- Trip distribution estimates and concurrency corridor trip assignment under the existing and proposed zoning;
- Existing year (2023) traffic conditions during the weekday AM and PM peak hours;
- Opening year (2027) background traffic conditions assuming site development under the existing zoning during the weekday AM and PM peak hours;
- Opening year (2027) total traffic conditions assuming site development under the proposed zoning during the weekday AM and PM peak hours;
- Five-year horizon year (2032) background traffic conditions assuming site development under the existing zoning during the weekday AM and PM peak hours;
- Five-year horizon year (2032) total traffic conditions assuming site development under the proposed zoning during the weekday AM and PM peak hours;
- Anticipated site driveway turn lane considerations; and,
- Conclusions and recommendations.

ANALYSIS METHODOLOGY

Intersection Levels-of-Service

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (HCM, Reference 2)[1] for signalized intersections and HCM 6th Edition (Reference 3) for unsignalized intersections using Synchro 11 software. Peak 15-minute flow rates were used in the evaluation of all intersection levels of service to provide analyses based on a reasonable worst-case scenario. Queuing analyses presented in this report reflect 95th percentile queues and were also obtained from Synchro 11 software.

Operating Standards

VMC Section 11.80.130.B states the following:

> *A proposed development that adds at least five net new peak hour trips to an intersection approach operating at an LOS E or lower within the required traffic impact analysis area may be denied based upon any of the following:*
>
> 1. *For signalized intersections, when off-site intersection conditions are at a LOS F, or*
> 2. *For signalized intersections, when the LOS E and the volume to capacity ratio is greater than 0.95, or*
> 3. *For unsignalized intersections, when the volume to capacity ratio for any lane on any approach is greater than 0.95, and*
> 4. *When significant traffic hazards would be caused or materially aggravated by the proposed development.*

EXISTING CONDITIONS

The existing conditions analysis identifies site conditions and geometric characteristics of roadways within the study area. Kittelson & Associates, Inc. (KAI) staff visited and inventoried the site of the proposed CPA and Zone Change and surrounding area in June 2023 to observe site conditions, adjacent land uses, existing study intersection traffic operations, and transportation facilities in the study area.

Site Conditions and Adjacent Land Uses

The majority of the study site is currently undeveloped. Six single family residences and one commercial space are located on the northern and western portions of the site, accessible via existing driveways on SE 15th Street and SE 192nd Avenue. Existing residential development borders the site in all directions.

[1] The HCM 2000 methodology in Synchro was used because the Synchro HCM 6th Edition methodology does not produce an overall intersection volume to capacity (V/C) ratio calculation (City standards are predicated in part on the overall intersection V/C ratio).

Adjacent Roadway Facilities

Table 1 summarizes the existing transportation facilities and roadways in the study area.

Table 1. Existing Transportation Facilities and Roadway Designations

Roadway	Functional Classification[1]	Number of Travel Lanes	Posted Speed (mph)	Sidewalks?	Bicycle Lanes?	Raised Median?	On-Street Parking?
SE 192nd Avenue	Principal Arterial	4-5	40	Yes	Yes	Yes	No
SE 189th Avenue	Neighborhood Circulator	2	Not posted	Yes	No	No	No
SE 164th Avenue	Principal Arterial	6-7	40	Yes	No	Yes	No
SE Mill Plain Boulevard	Principal Arterial	4-5	40	Yes	Yes	Yes	No
SE 20th Street	Minor Arterial	2-3	40	Yes	Yes	Partial	No
SE 15th Street	Collector Arterial	2-3	35	Partial[2]	Yes	No	No

[1] Source: *City of Vancouver Arterial Street System and Classification Map*, Adopted June 2022.
[2] Sidewalks are provided along the south side of SE 15th Street adjacent to the site. There are no sidewalks on the north side of SE 15th Street along the site, but intermittent sidewalks are provided on the north side of SE 15th Street west of SE 189th Avenue.

Pedestrian and Bicycle Facilities

As indicated by Table 1, sidewalks and bicycle facilities in the study area are generally present and the available facilities appear to have been completed in conjunction with adjacent development projects.

Transit Facilities

C-Tran currently offers a fixed transit route within the general sire vicinity. The route is summarized below.

- Route 37 (Mill Plain/Fisher's) provides bus service between Downtown Vancouver to Fisher's Landing Transit Center, including service along SE Mill Plain Boulevard, SE 192nd Avenue and SE 164th Avenue. The service operates on weekdays from approximately 4:55 AM to 1:00 AM, with 15-minute headways for most of the day. On weekends, the route operates with 20-minute headways on Saturdays and 30-minute headways on Sundays.

The transit stops for Route 37 are located approximately 200 feet south and east of the site at the SE 192nd Street & SE 15th Street intersection.

Crash Analysis

The study intersection crash history was obtained from WSDOT for the period from January 1, 2017 to December 31, 2021. Table 2 summarizes the reported crash frequency, type, and severity by intersection. Generally, the City of Vancouver considers a crash rate greater than one crash per million entering

vehicles (MEV) to be an indicator that a potential geometric or operational issue may exist, and that further evaluation should be considered.

Table 2. Study Intersection Crash Frequency and Severity (January 2017 through December 2021)

Intersection	No. of Crashes	Crash Type						Crash Severity		Crash Rate[1]
		Rear-End	Object	Turning	Angle	Side-swipe	Ped/ Bike	Non-Injury	Injury	
192nd Avenue & SE 15th Street	9	3	1	1	4	0	0	5	4	0.19
192nd Avenue & Mill Plain Blvd.	10	4	1	2	2	1	0	6	4	0.20
192nd Avenue & SE 20th Street	12	7	1	1	2	0	1	8	4	0.22
164th Avenue & SE 15th Street	19	8	3	0	6	2	0	15	4	0.32
189th Avenue & SE 15th Street	1	0	0	1	0	0	0	0	1	0.11

[1] Crash rate is calculated as the number of crashes per million entering vehicles. Average daily traffic volumes were estimated using PM peak hour total entering volume at the intersection.

As shown in Table 2, each of the study intersections has a crash rate of less than 1.0 per million entering vehicles. There was one reported crash on SE 192nd Avenue at SE 20th Street involving a passenger vehicle making an eastbound right-turn and a bicyclist, for which no contributing circumstances were recorded. No crashes involving pedestrians were reported.

Additionally, one crash at SE 164th Avenue / SE 15th Street resulted in a fatality. The crash involved a motorcycle and a truck (under 10,000 lb.) The motorcycle was reported to be traveling southbound and the truck was traveling westbound. Speeding was recorded as a contributing factor in the crash report.

No safety-based mitigation needs were identified through review of the available crash data. *Appendix "B" includes the crash data provided for each of the study intersections.*

TRIP GENERATION

A trip generation estimate was prepared for the existing R-6 zoning using the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition* (Reference 4). The current allowed usage of the property can be best described as "single family detached housing" (ITE Code 210). According to VMC Section 20.410.020.C (Reference 1), the maximum density for the current zoning district R-6 is 5.8 units/net acre. With a lot size of 9.85 acres, this leads to a maximum allotment of 57 units.

For a conservative estimate, the allowed usage of the property after the proposed CPA/Zone Change can be described as "multi-family housing (low-rise)" (ITE Code 220). The maximum density in the VMC for the proposed zoning district R-30 is 30 units/net acre. For consistency with the analysis of the worst-case development scenario under existing conditions, the maximum density was applied to the gross site acreage. With a lot size of 9.85 acres, this leads to a maximum allotment of 296 units.

The resulting weekend daily, AM, and PM peak hour vehicle trip ends are summarized in Table 3. Per the ITE *Trip Generation Handbook* (Reference 5), the fitted curve equation was utilized for the AM and PM peak hour trips, while the weighted average was used for weekday daily trips.

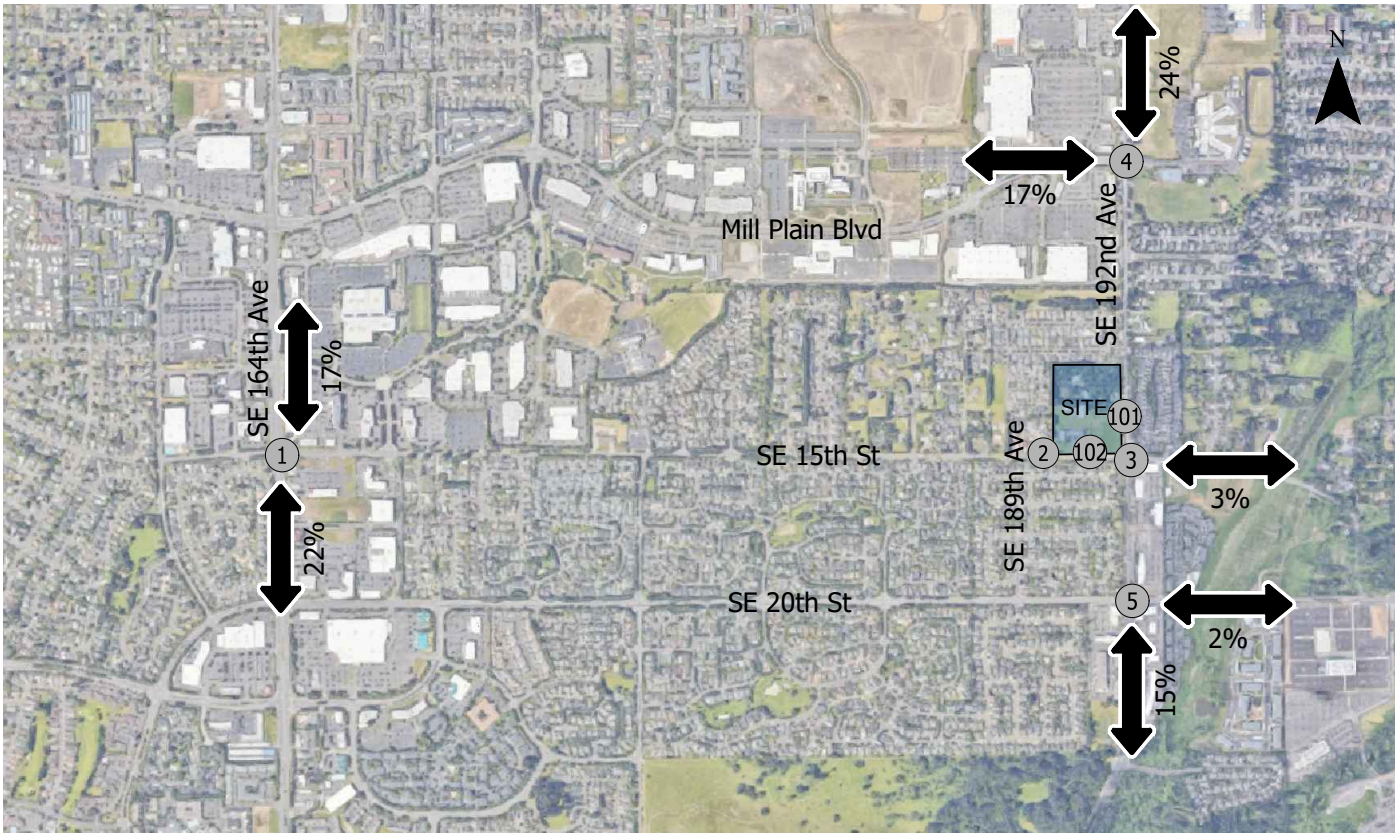
Table 3. Trip Generation Estimate

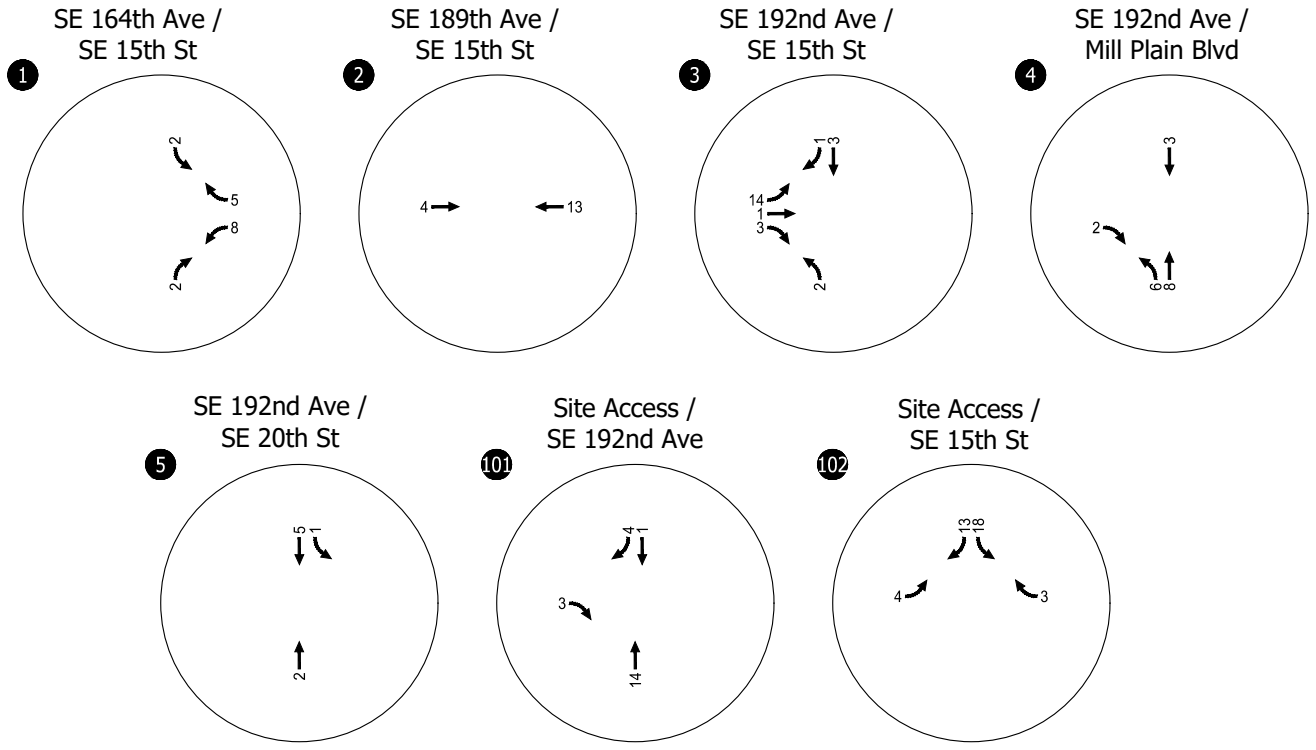
Land Use	ITE Code	Size (Units)	Weekday Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Existing R-6 Single-Family Detached Housing Reasonable Worst Case Development Scenario									
Single-Family Detached Housing	210	57	538	45	11	34	59	37	22
Proposed R-30 Multi-Family Housing (Low-Rise) Reasonable Worst Case Development Scenario									
Multi-Family Housing (Low-Rise)	220	296	1,995	115	28	87	148	93	55
Trip Difference = (Proposed – Existing)									
			1,457	**70**	**17**	**53**	**89**	**56**	**33**

TRIP DISTRIBUTION AND ASSIGNMENT

The site-generated trips shown in Table 3 were distributed to the study area roadways based on a trip distribution pattern derived from the Southwest Washington Regional Transportation Council travel demand model (select zone analysis of Transportation Analysis Zone 1752) as well as existing travel patterns in the site vicinity.

Figures 3 to 6 show the estimated trip distribution pattern and site-generated traffic volumes assigned to the five study intersections and the two anticipated site driveways under the existing and proposed zoning, respectively.

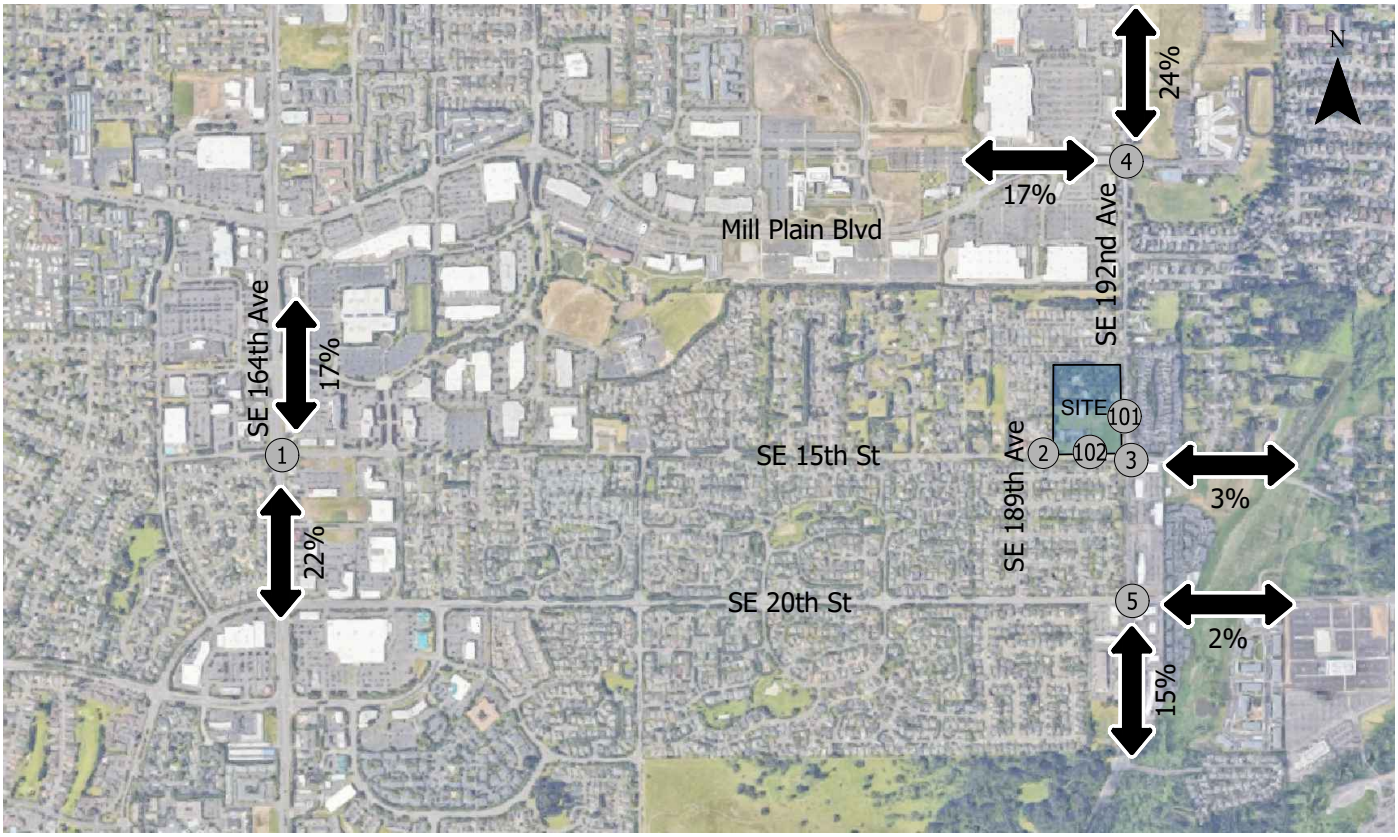


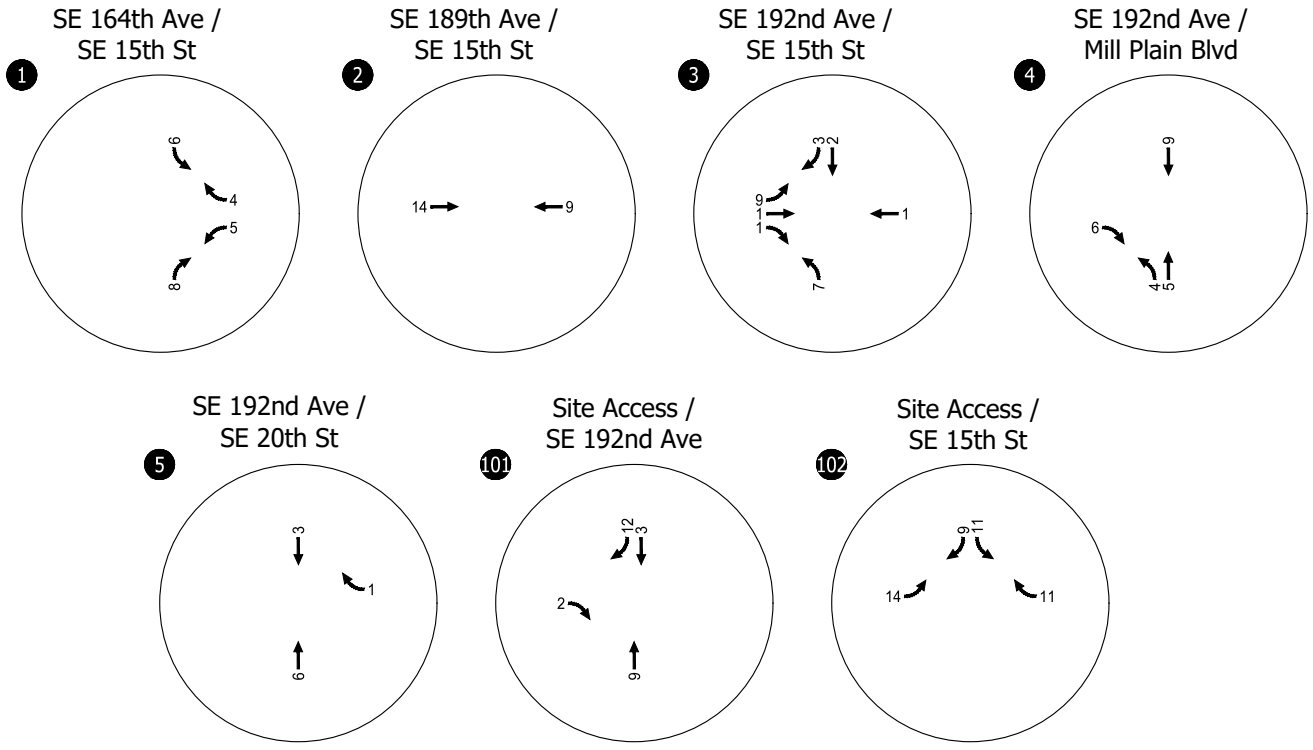


X% Trip Distribution

Trip Distribution and Assignment (Existing Zoning)
Weekday AM Peak Hour
Vancouver, WA

Figure 3

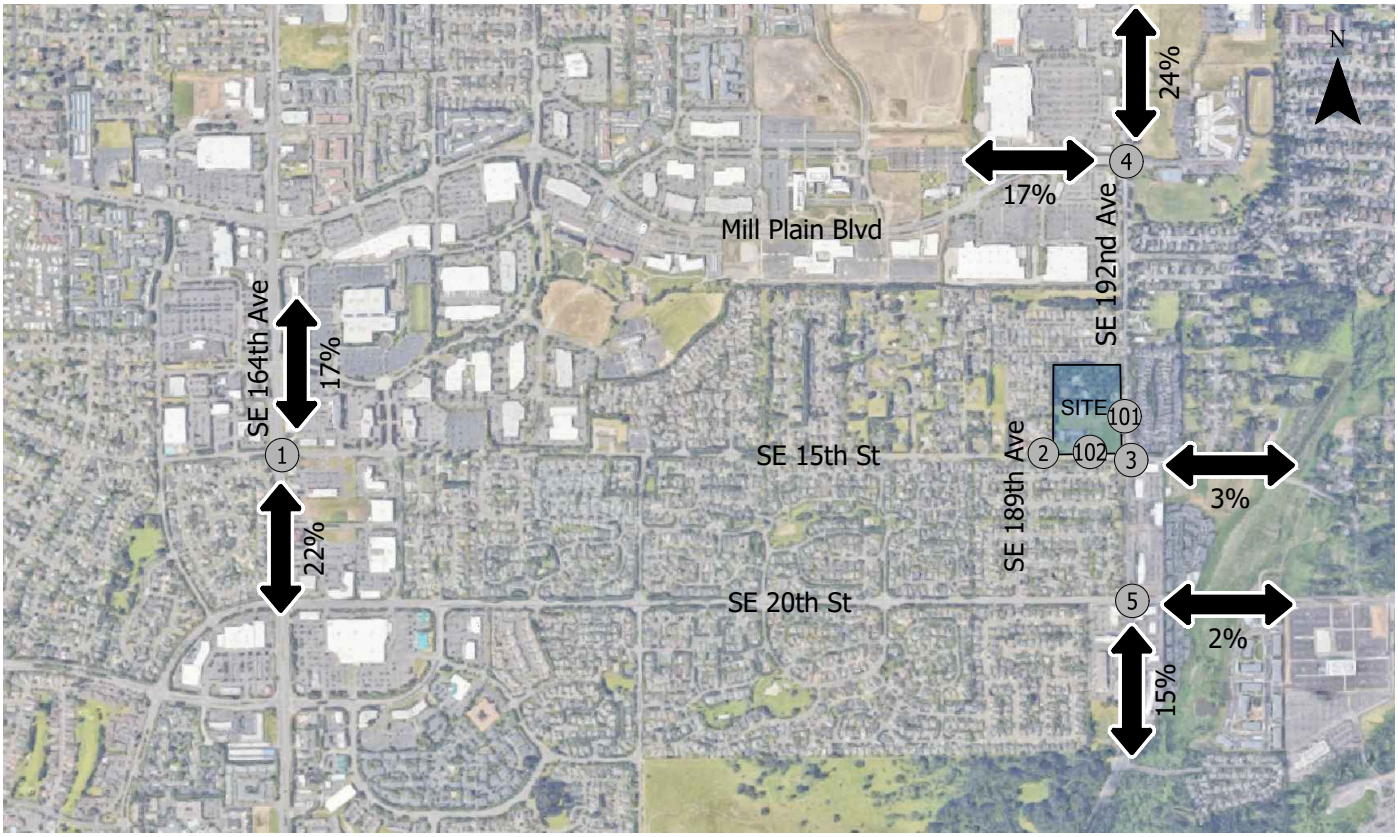


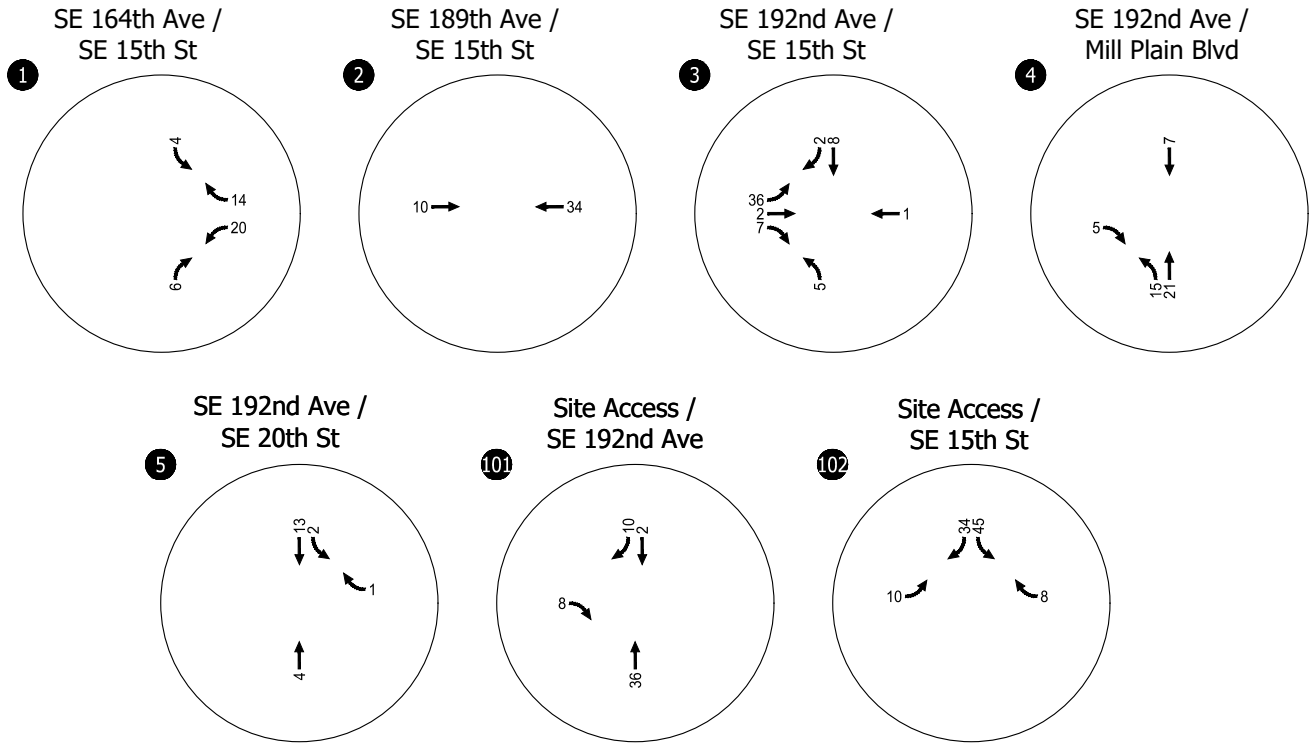


X% Trip Distribution

Trip Distribution and Assignment (Existing Zoning)
Weekday PM Peak Hour
Vancouver, WA

Figure 4



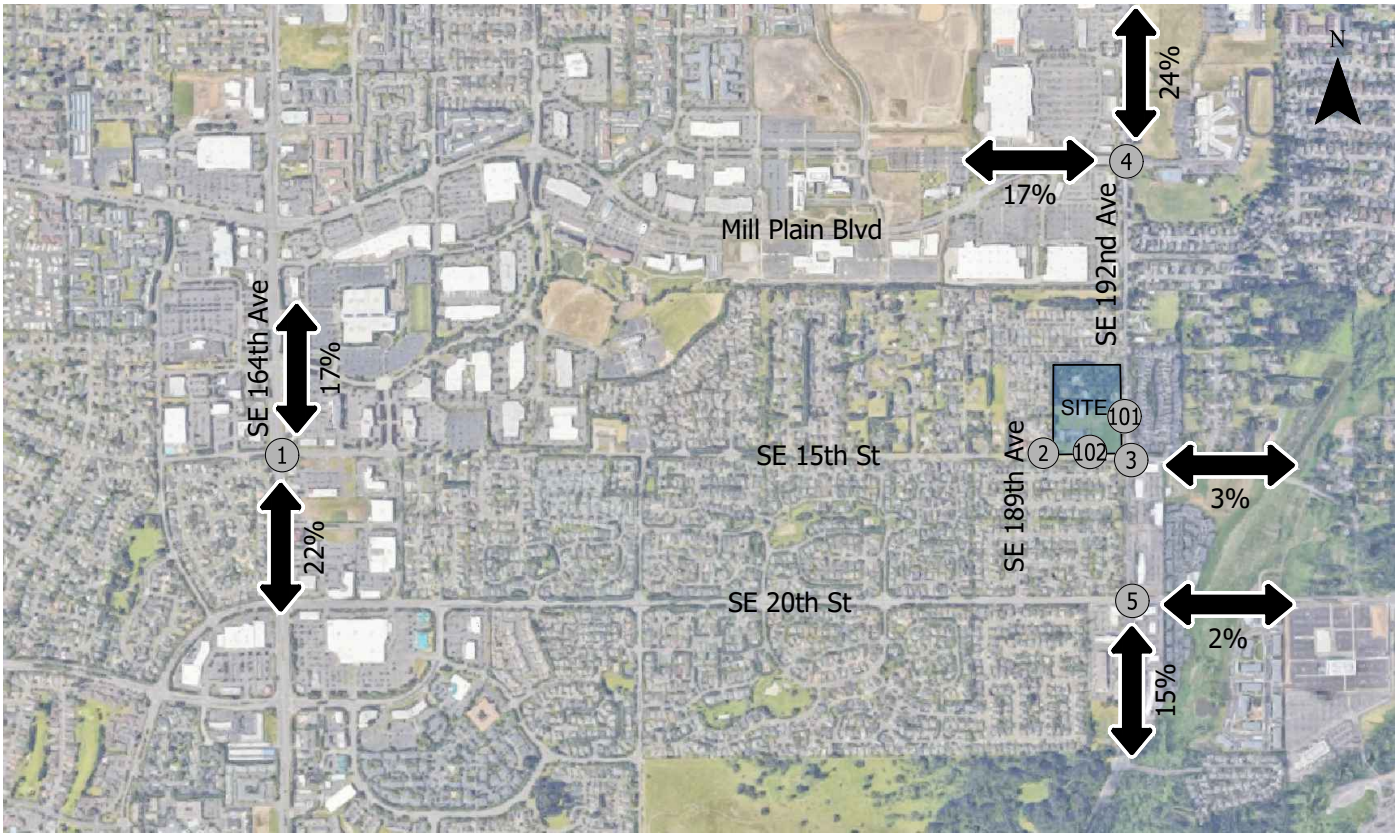


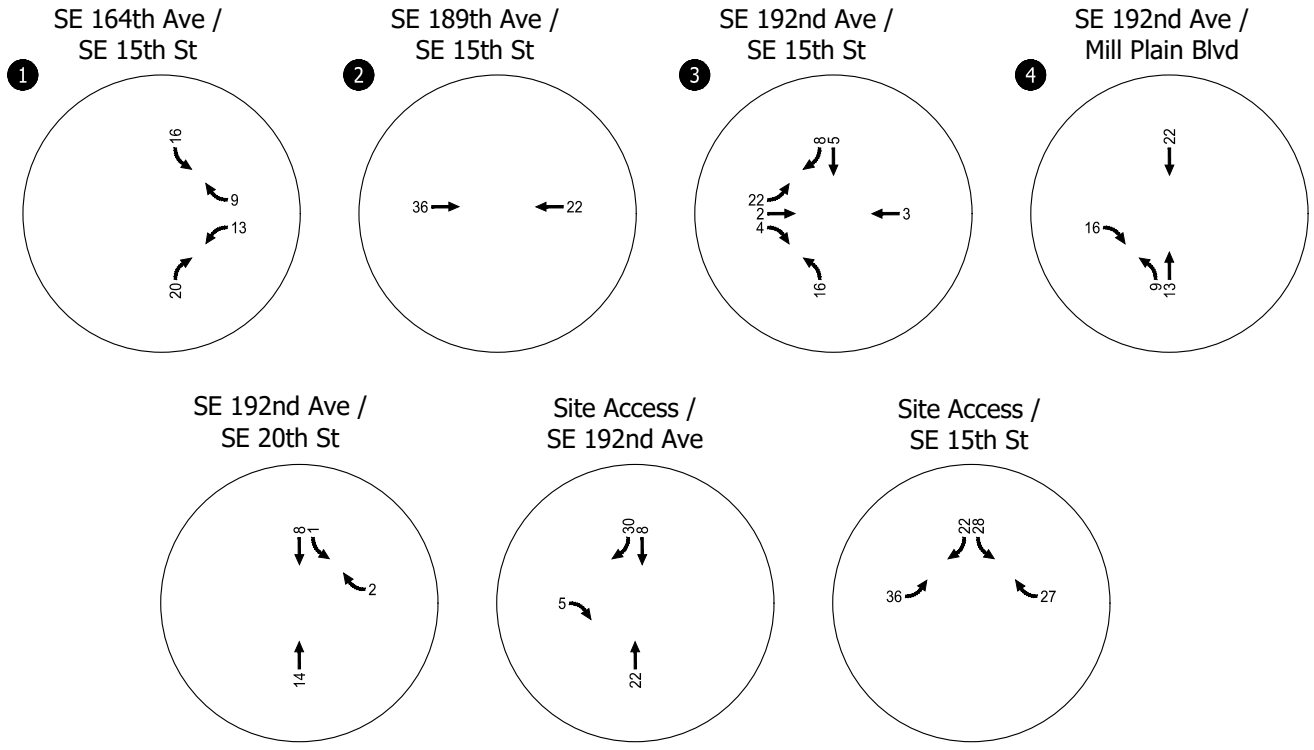
Trip Distribution

X%

Trip Distribution and Assignment (Proposed Zoning)
Weekday AM Peak Hour
Vancouver, WA

Figure 5





X% Trip Distribution

Trip Distribution and Assignment (Proposed Zoning)
Weekday PM Peak Hour
Vancouver, WA

Figure 6

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Concurrency Corridor Trip Assignment

Per City of Vancouver requirements, Table 4 summarizes the estimated number of site-generated weekday PM peak hour trips entering each of the City's adopted concurrency corridors before and after the proposed CPA and zone change for illustrative comparison purposes. Assigned trips were recorded counting trips only once along each of the specified corridors. Because the trips shown in Table 4 represent reasonable worst case development, the actual trip assignment for concurrency purposes may be different and will need to be re-assessed in conjunction with a future site development review application.

Table 4. Concurrency Corridor Weekday PM Peak Hour Trip Assignment

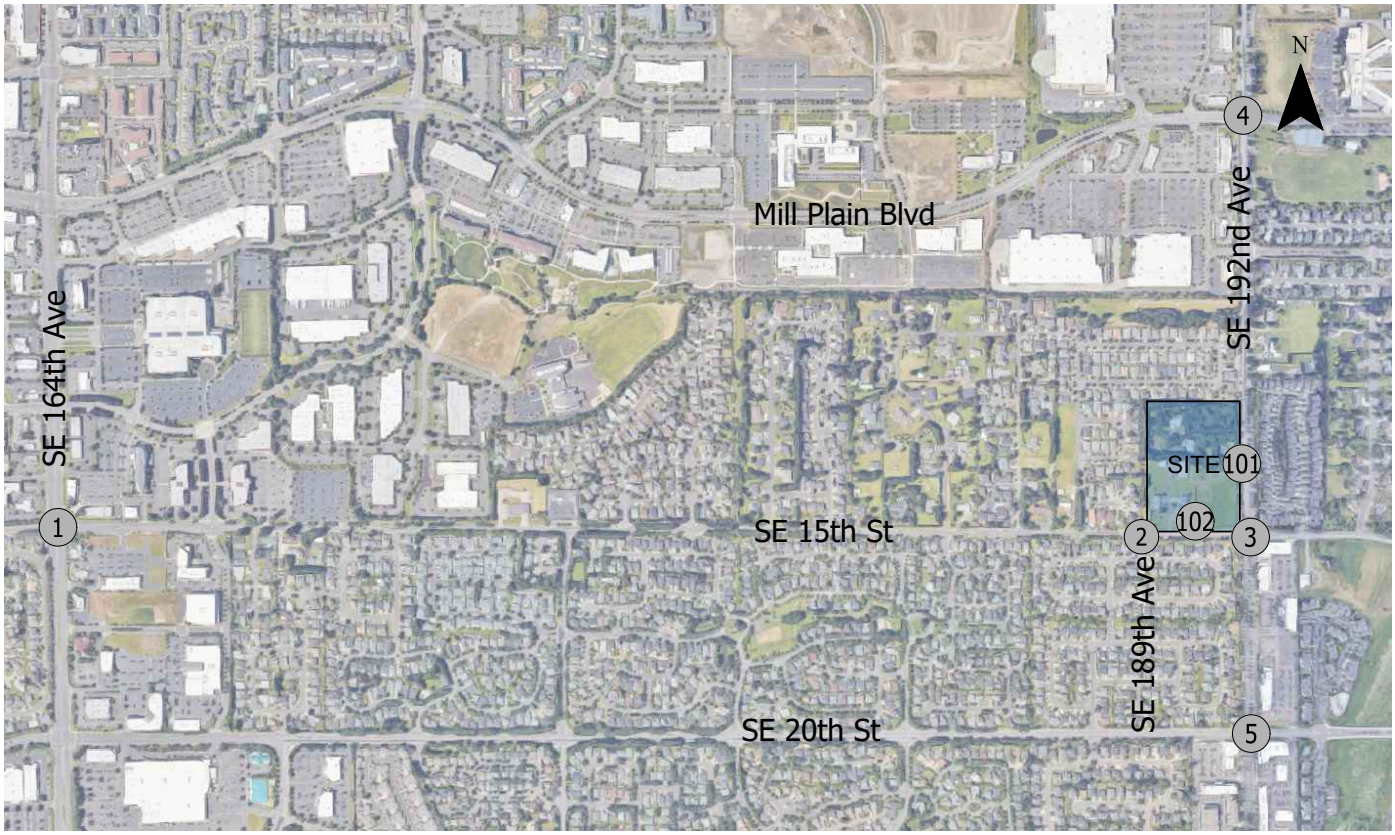
Corridor Name	Corridor Limit	PM Peak Trips to Corridor (Existing Zoning)	PM Peak Trips to Corridor (Proposed Zoning)
Mill Plain Blvd.	Fourth Plain to I-5	1	3
	I-5 to Andresen	2	5
	Andresen to I-205	3	8
	I-205 to 136th Ave.	7	16
	136th Ave. to 164th Ave.	9	22
	164th Ave. to 192nd Ave.	10	25
St. Johns / Ft. Van Way	Mill Plain to 63rd St.	-	-
Fourth Plain Blvd.	Mill Plain to I-5	-	-
	I-5 to Andresen	-	-
	Andresen to I-205	-	-
	I-205 to 162nd Ave.	1	3
Andresen Road	Mill Plain to SR500	-	-
	SR500 to 78th St.	-	-
112th Avenue	Mill Plain to 28th St.	1	3
	28th St. to 51st St.	-	-
164th/162nd Avenue	SR14 to SE 1st St.	30	75
	SE 1st St. to Fourth Plain	16	39
Burton Road / 28th Street	18th St. to 112th Ave.	-	-
	112th Ave. to 138th Ave.	-	-
	138th Ave. to 162nd Ave.	-	-
18th Street	112th Ave. to 138th Ave.	1	3
	138th Ave. to 164th Ave.	2	5
136th/137th Avenue	Mill Plain to 28th St.	1	3
	28th St. to Fourth Plain	-	-
192nd Avenue	SR14 to NE 18th St.	34	85

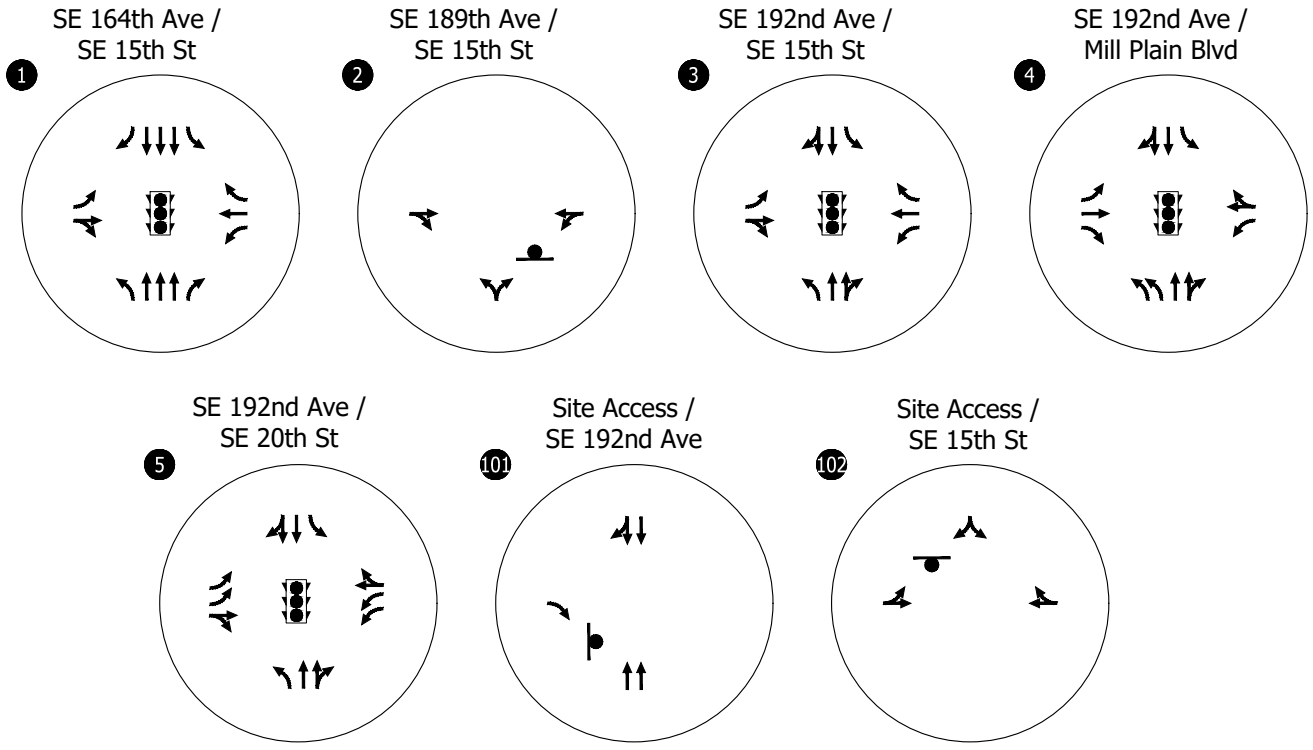
STUDY INTERSECTION OPERATIONS REVIEW

This section provides an overview of operations at the study intersections under existing conditions as well as opening year and five-year horizon year background and total traffic conditions for both the existing and proposed zoning. The analysis determined that the study intersections all operate acceptably today and will continue to do so in the future, during both the weekday AM and PM peak hours. Figures 8 through 17 illustrate weekday AM and PM peak hour conditions under existing and future traffic conditions. Derivation of the existing and future conditions analysis at the study intersections is further described below.

Existing 2023 Traffic Conditions

Figure 7 illustrates the existing lane configuration and traffic control devices at each of the study intersections. Figures 8 and 9 present the existing traffic volumes and corresponding intersection operations. All study intersections satisfy City of Vancouver operational thresholds under existing conditions. *Appendix "C" contains the existing operational analysis worksheets.*





- Existing Lane Configuration
- Stop Sign
- Traffic Signal

Existing Lane Configurations & Traffic Control Devices
Vancouver, WA

Figure 7

H:\29\29273 - SE 192nd Avenue CPA_Zone Change\report\figs\29273 - SE 192nd Avenue - Figures.dwg Jul 26, 2023 - 1:37pm - asilva Layout Tab: Lane Config

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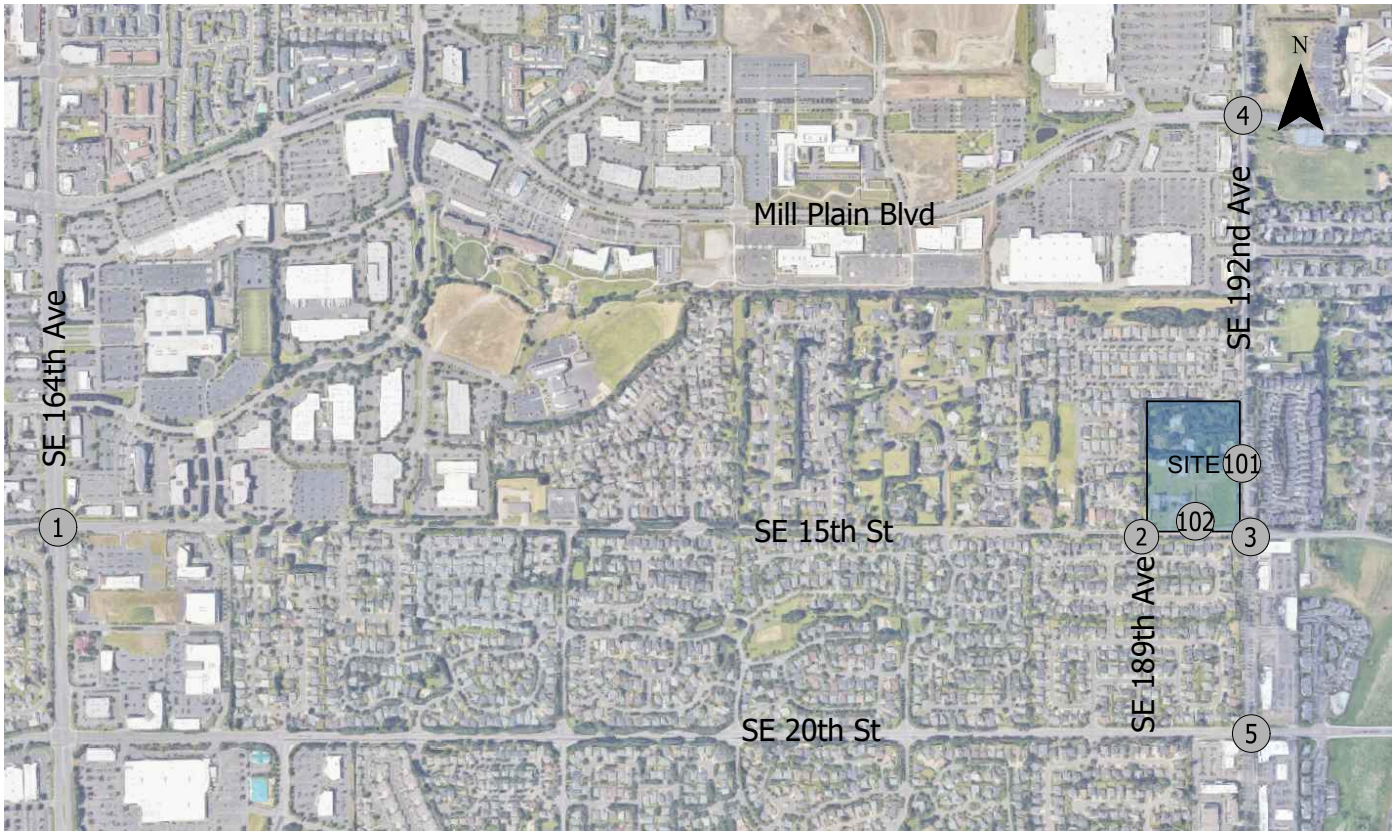
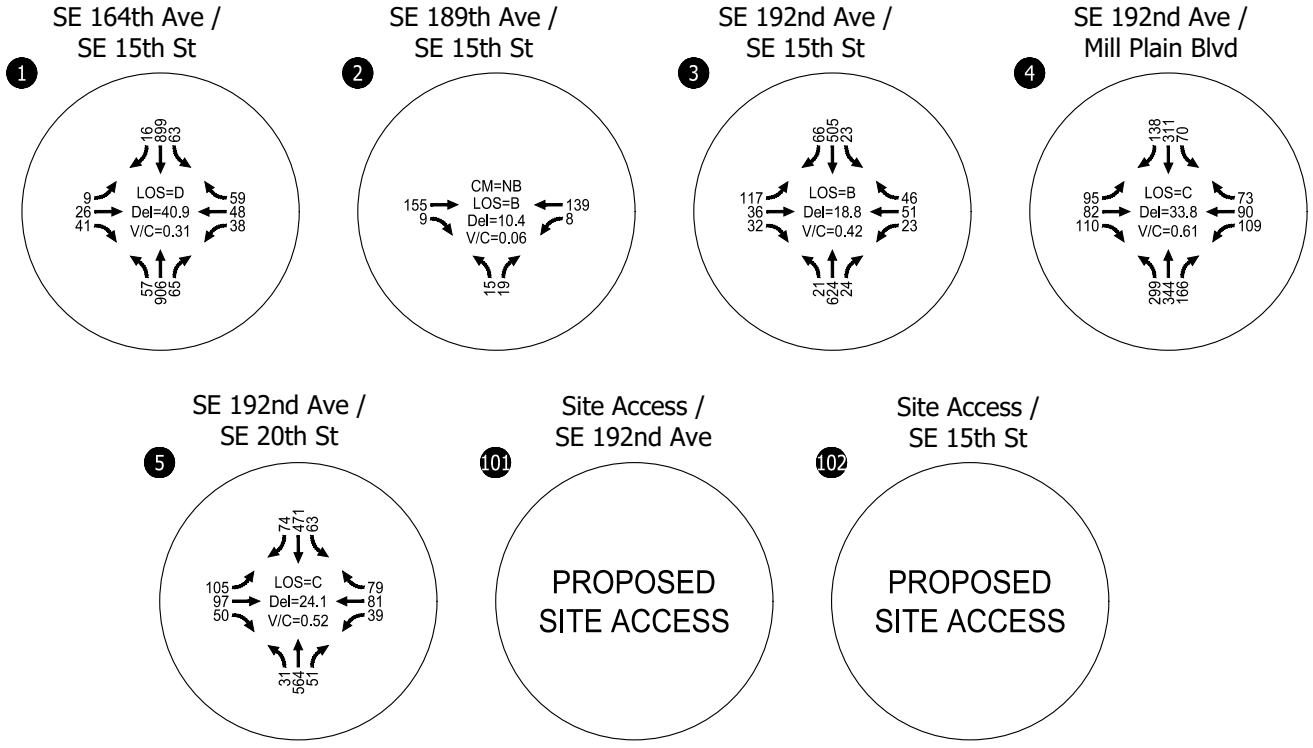
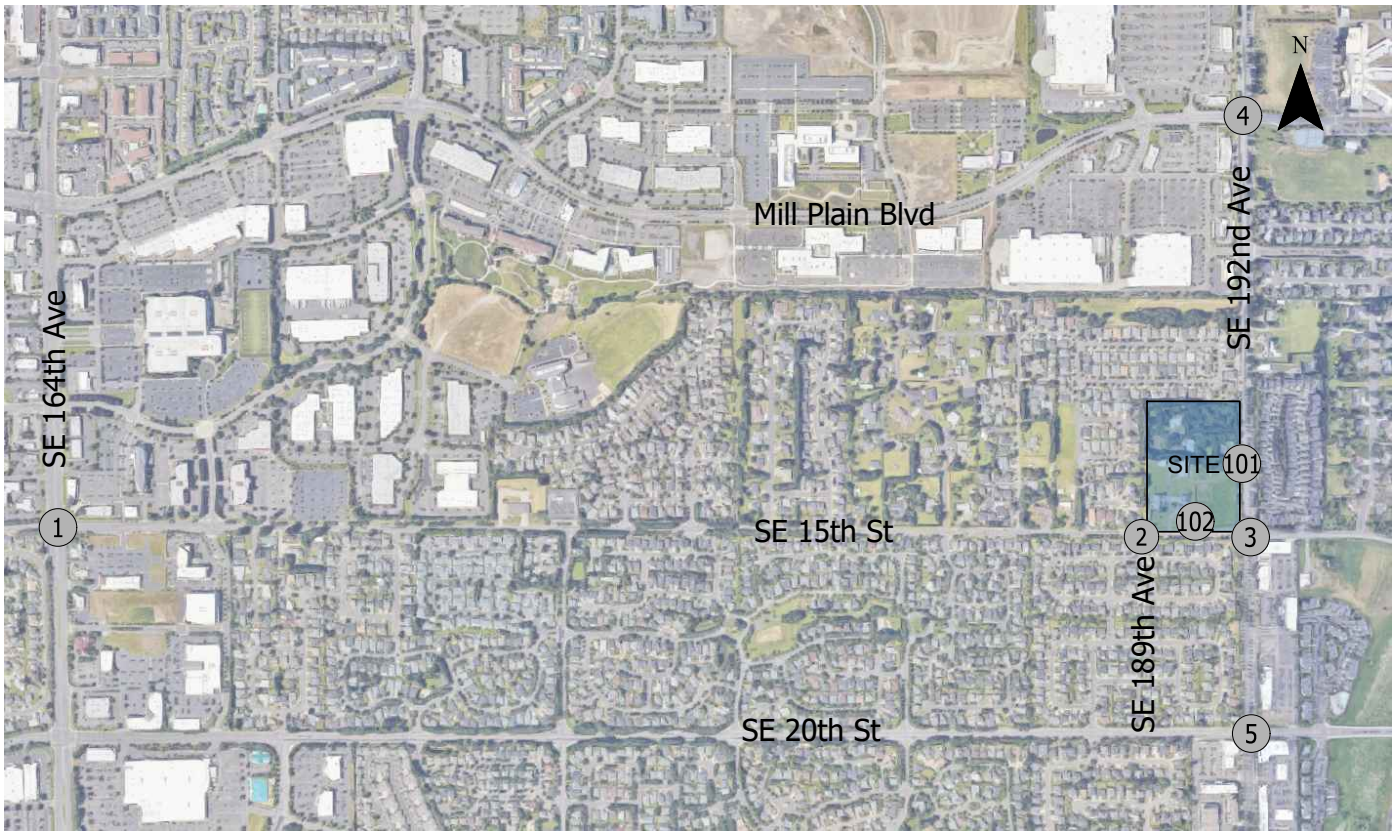


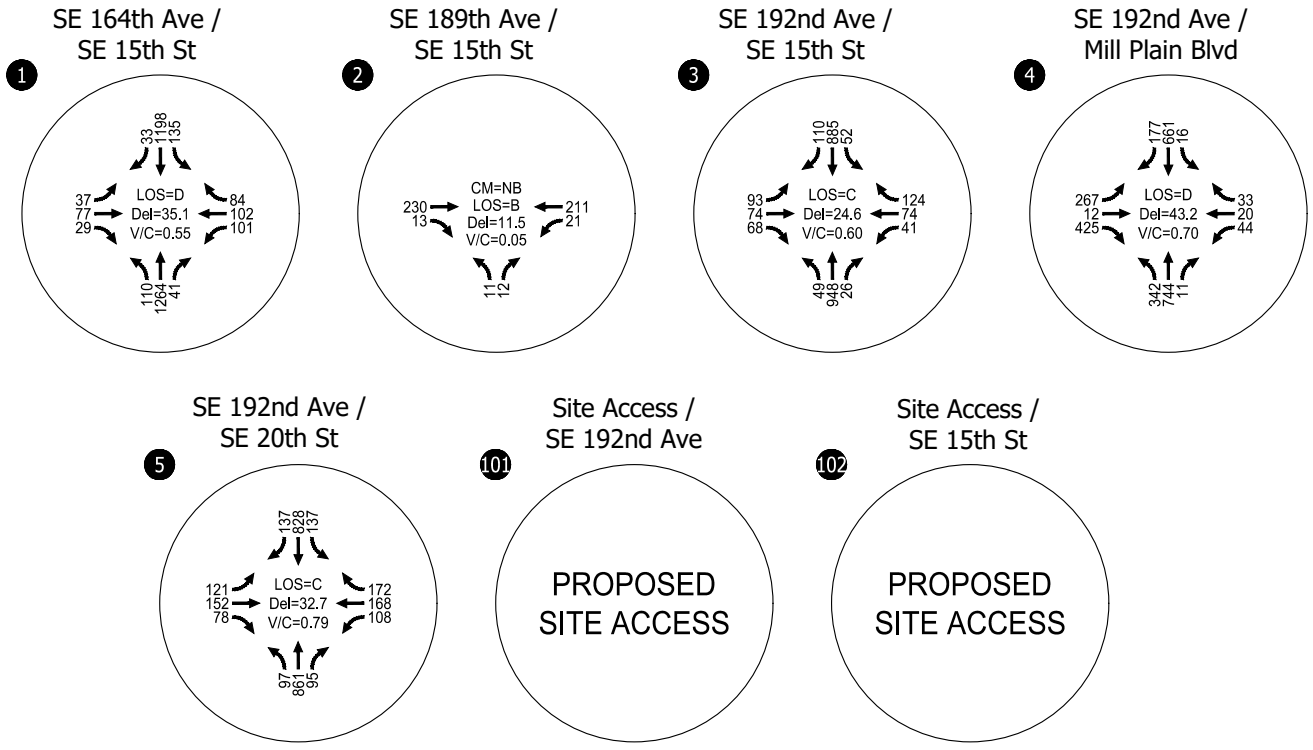


CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO/ APPROACH VOLUME-TO-CAPACITY RATIO (UNSIGNALIZED)

Existing Traffic Operations Weekday AM Peak Hour Vancouver, WA

Figure 8





CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO/ APPROACH VOLUME-TO-CAPACITY RATIO (UNSIGNALIZED)

Existing Traffic Operations Weekday PM Peak Hour Vancouver, WA

Figure 9

Opening Year 2027 Traffic Conditions

Opening year 2027 traffic volumes include the addition of estimated trips from general growth in the region (application of a 1.5 percent compounded annual growth). In-process trips associated with the following nearby developments were also added to the study intersections:

- HP Phase 1, to be developed north of this study;
- Vancouver Innovation Center, to be developed south of this study;
- Grass Valley (retail trips only[2]), to be developed southeast of this study;
- Kate Woods, to be developed southeast of this study; and
- Rerouting a portion of westbound right-turning vehicles at SE 20th Street / SE 192nd Avenue to use SE Bybee Road to SE 15th Street / SE 192nd Avenue during the PM peak hour, consistent with the Section 30 Study assumption[3].

Appendix "D" contains the in-process trip for the weekday AM and PM peak hours.

Background Traffic Conditions (Existing Zoning)

The opening year 2027 background traffic conditions analysis identifies how the study area's transportation system will operate during the anticipated opening year with the addition of trips generated by a reasonable worst-case development scenario under the existing zoning (see Table 3).

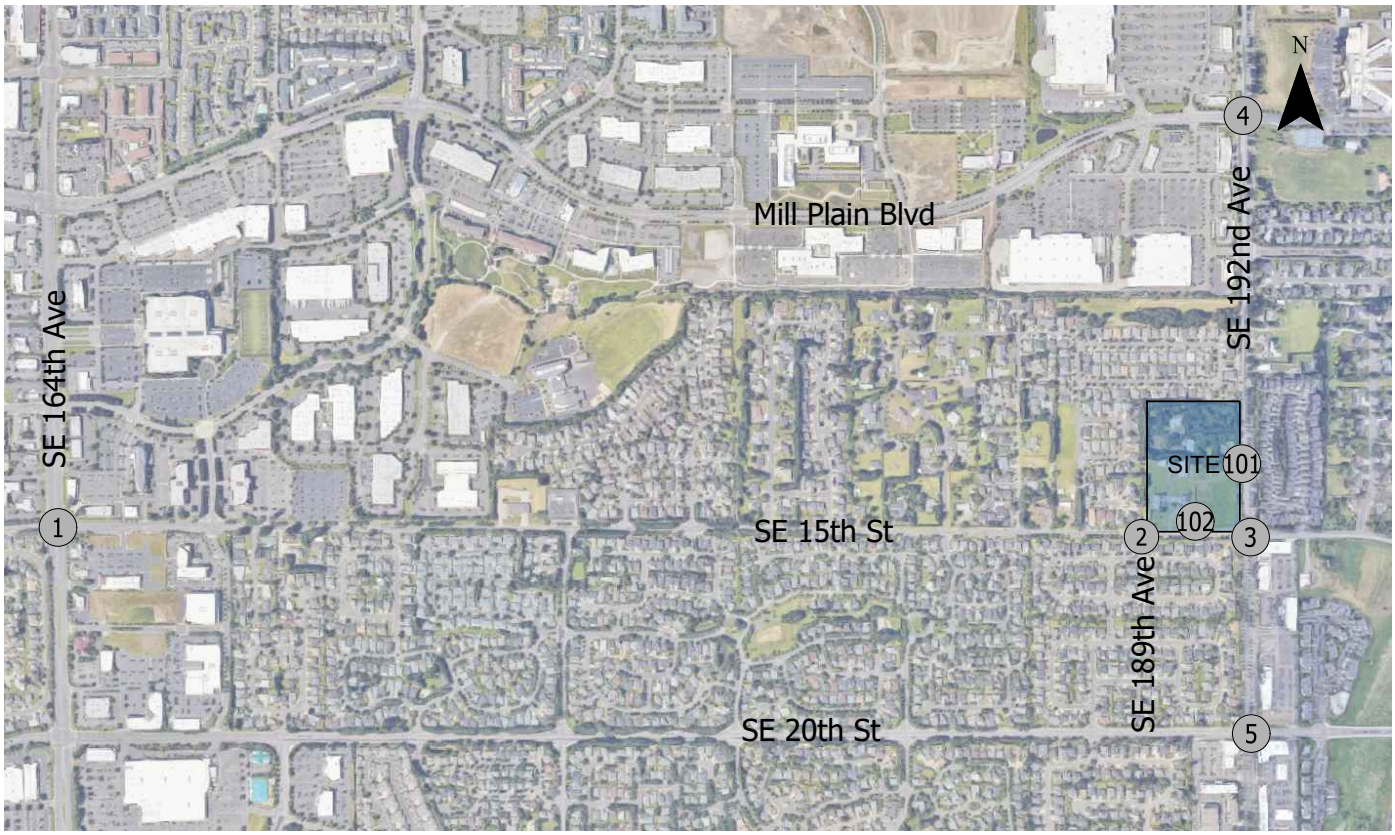
The site-generated trips in Figures 3 and 4 were added to the general growth and in-process trips to produce year 2027 background traffic volumes. Figures 10 and 11 illustrate the resultant "existing zoning" conditions. As shown, inclusive of regional growth, all the study intersections continue to operate acceptably under year 2027 background conditions. *Appendix "E" contains the 2027 background traffic operational analysis worksheets.*

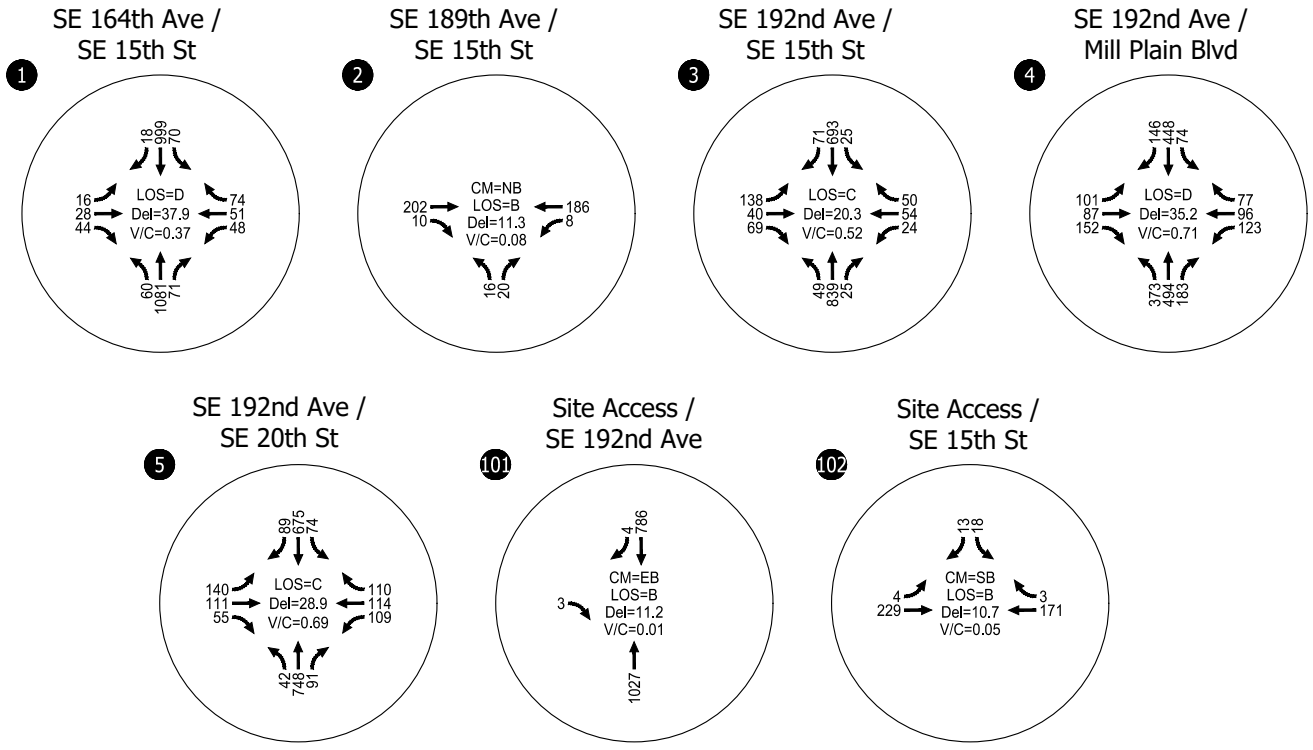
Total Traffic Conditions (Proposed Zoning)

The opening year 2027 total traffic conditions analysis identifies how the study area's transportation system will operate during the anticipated opening year with the addition of trips generated by a reasonable worst-case development scenario under the proposed zoning (see Table 3).

The site-generated trips in Figures 5 and 6 were added to the general growth and in-process trips to produce year 2027 total traffic volumes. Figures 12 and 13 illustrate the resultant "proposed zoning" conditions. As shown, inclusive of regional growth, all the study intersections continue to operate acceptably under the year 2027 total traffic conditions with the proposed zoning. *Appendix "F" contains the year 2027 total traffic operational analysis worksheets.*

[2]The residential and office components of the Grass Valley development have been constructed and were operational at the time of the traffic counts.
[3]Given the anticipated year of the SE Bybee Road realignment is uncertain, to provide a conservative approach southbound left-turning trips were not rerouted from SE 20th Avenue / SE 192nd Avenue.





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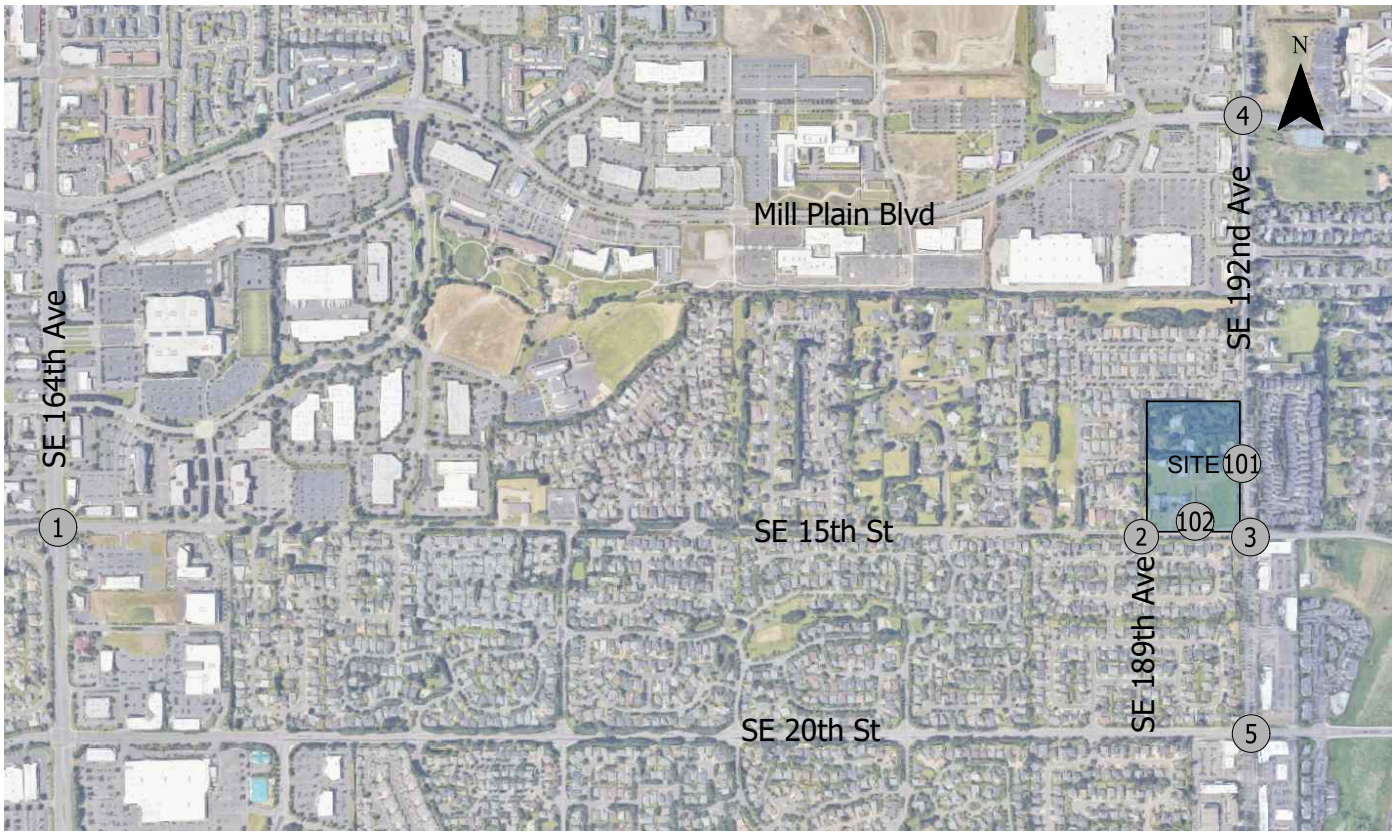
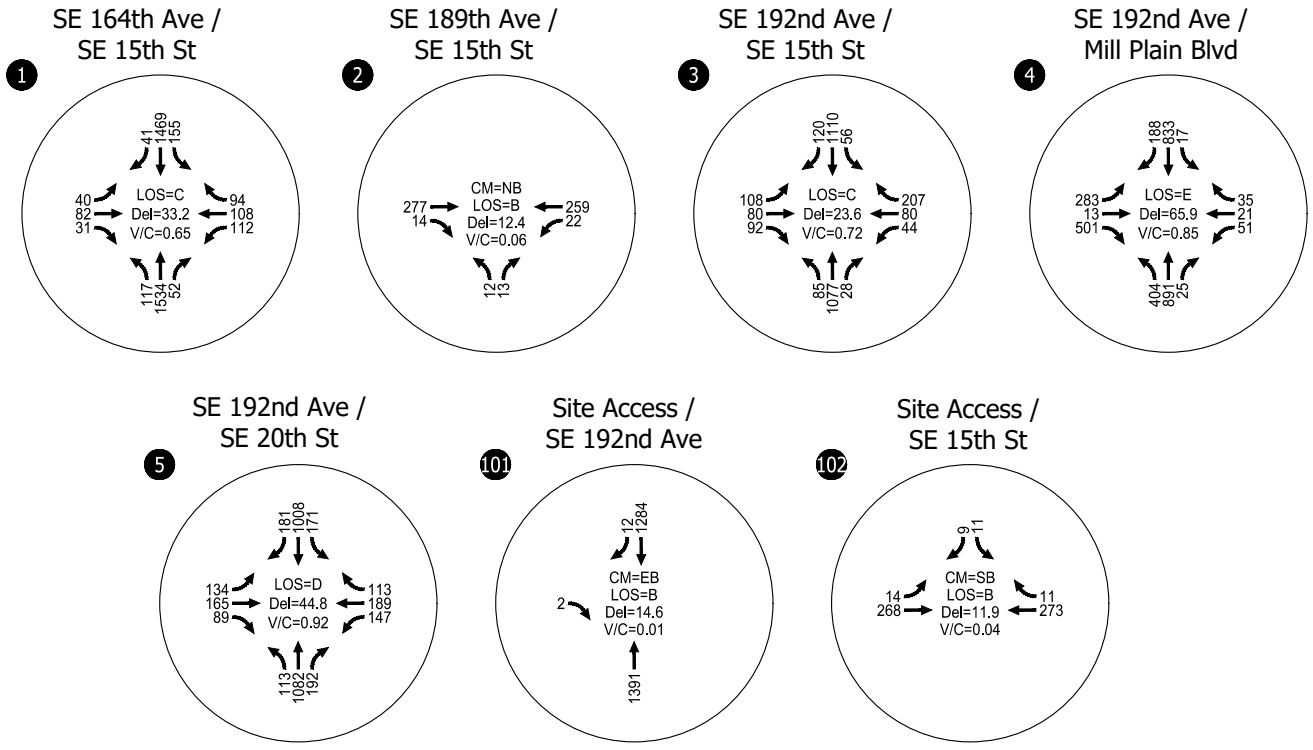
2027 Background Conditions
Weekday AM Peak Hour
Vancouver, WA

Figure 10





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2027 Background Conditions
Weekday PM Peak Hour
Vancouver, WA

Figure
11

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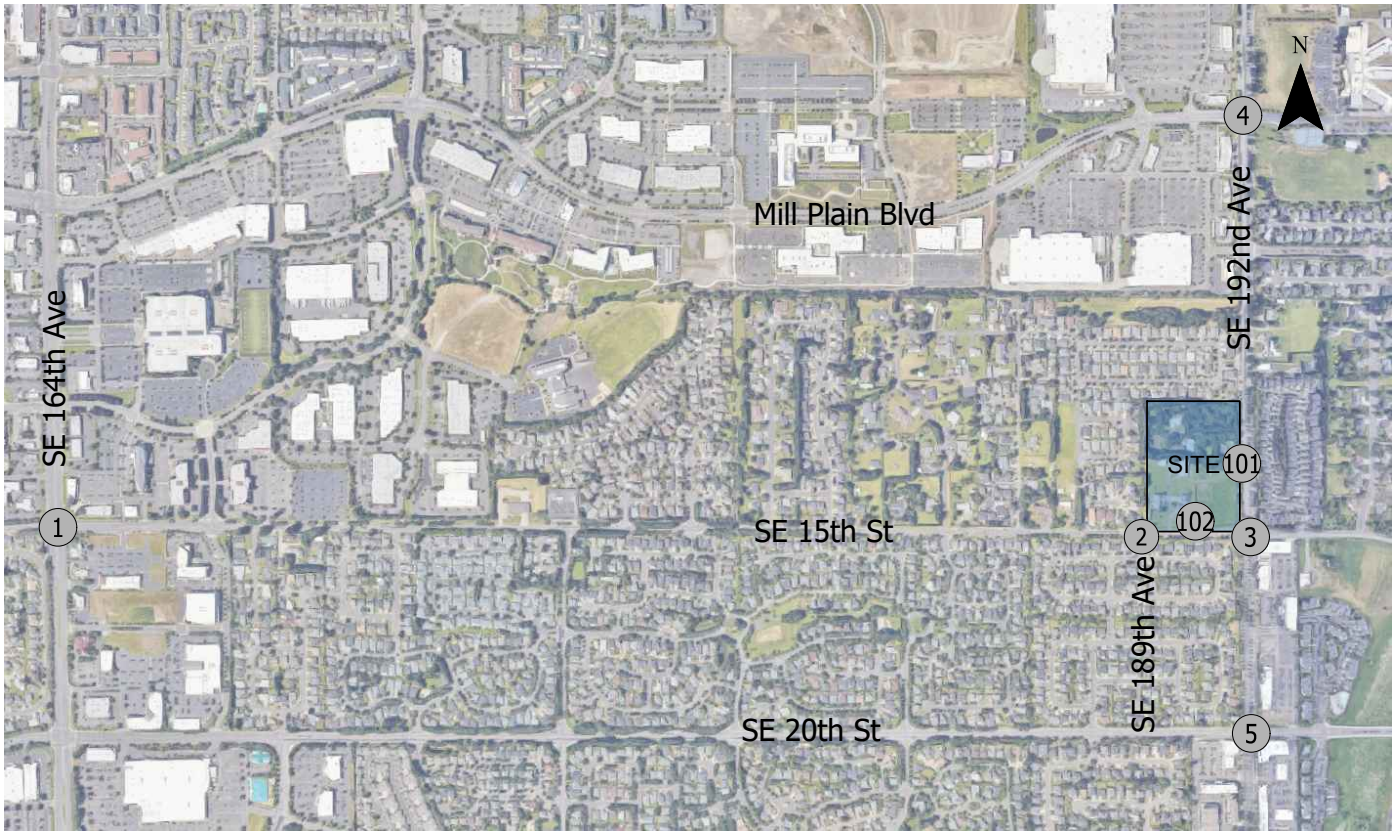

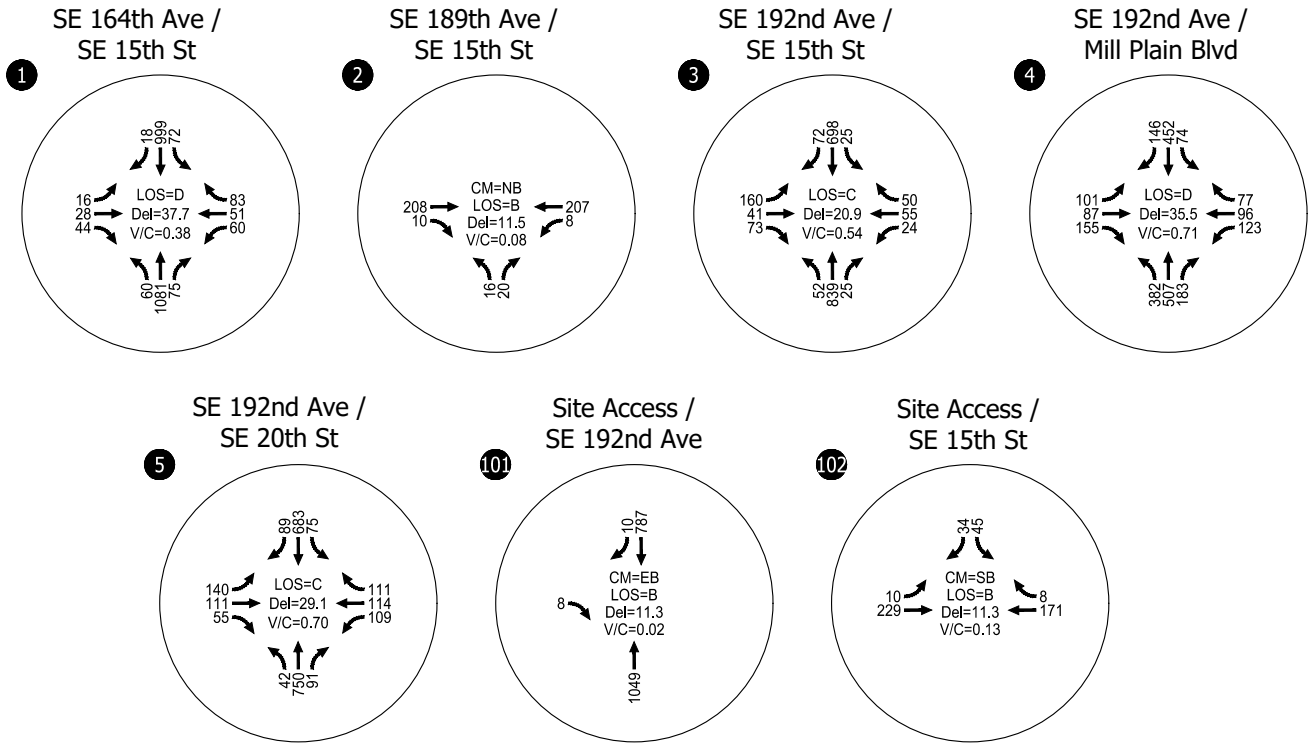

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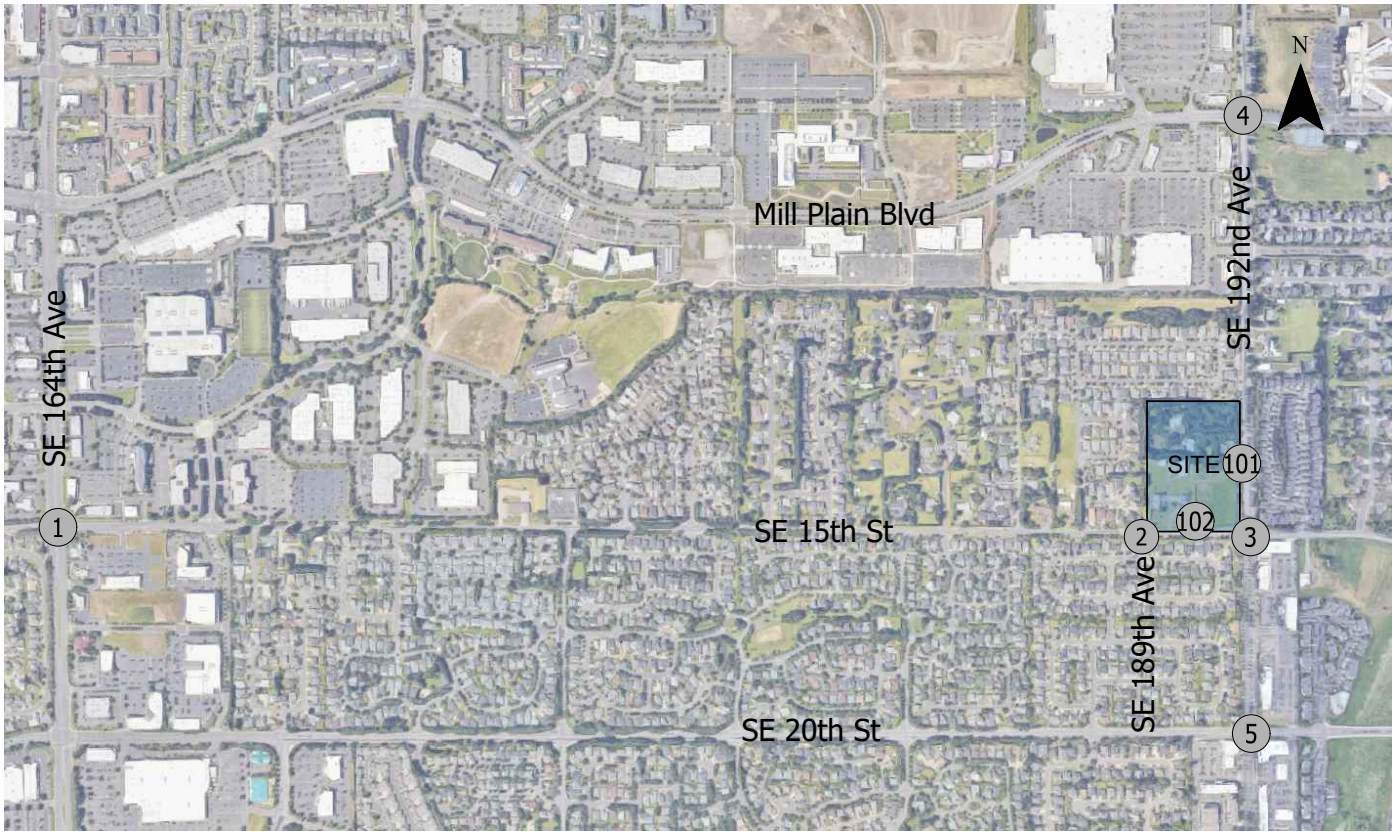
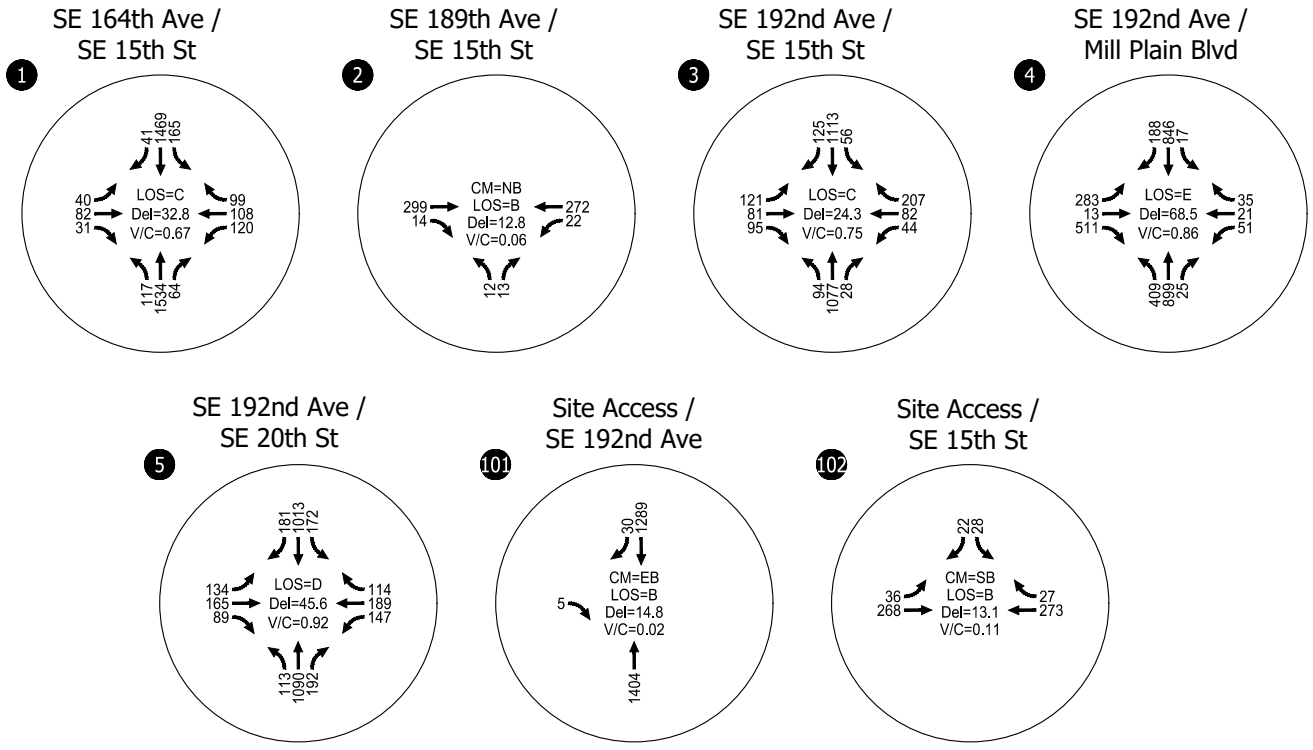
2027 Total Conditions
Weekday AM Peak Hour
Vancouver, WA

Figure
12





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2027 Total Conditions
Weekday PM Peak Hour
Vancouver, WA

Figure 13

Future Five-year (2032) Traffic Conditions

Future year 2032 traffic volumes were projected assuming a 1.5 percent compound annual growth from 2023 to 2027, and compound annual growth consistent with the Section 30 Subarea Study TIA to project growth from 2027 to 2032[4]. In-process trips were also added to the study intersections consistent with opening year 2027 traffic conditions.

Background Traffic Conditions (Existing Zoning)

The future five-year 2032 background traffic conditions analysis identifies how the study area's transportation system will operate five years after the anticipated opening year with the addition of trips generated by a reasonable worst-case development scenario under the existing zoning (see Table 3).

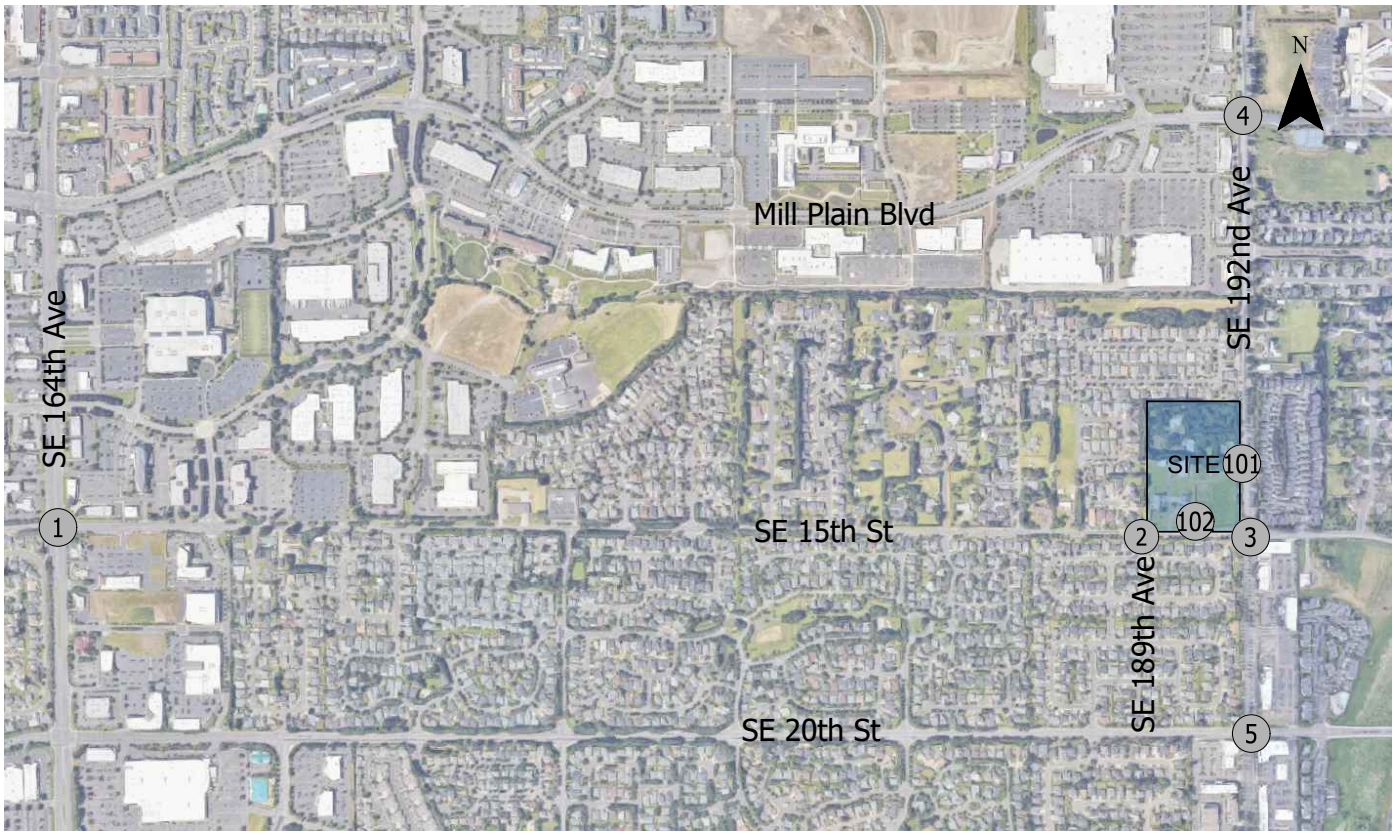
The site-generated trips in Figures 3 and 4 were added to the general growth and in-process trips to produce year 2032 background traffic volumes. Figures 14 and 15 illustrate the resultant "existing zoning" conditions. As shown, inclusive of regional growth, all the study intersections continue to operate acceptably under year 2032 background conditions. *Appendix "G" contains the 2032 background traffic operational analysis worksheets.*

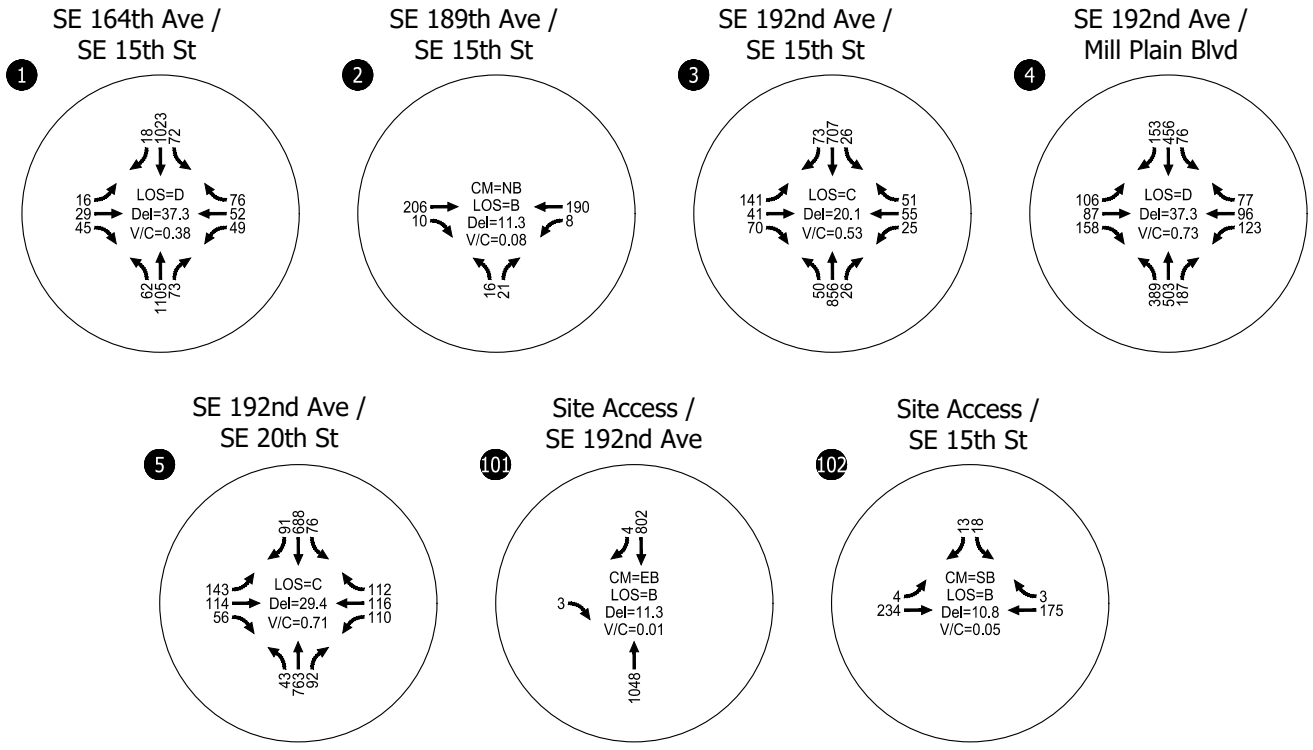
Total Traffic Conditions (Proposed Zoning)

The future five-year 2032 total traffic conditions analysis identifies how the study area's transportation system will operate five years after the anticipated opening year with the addition of trips generated by a reasonable worst-case development scenario under the proposed zoning (see Table 3).

The site-generated trips in Figures 5 and 6 were added to the general growth and in-process trips to produce year 2032 total traffic volumes. Figures 16 and 17 illustrate the resultant "proposed zoning" conditions. As shown, inclusive of regional growth, all the study intersections continue to operate acceptably under year 2032 total traffic conditions with the proposed zoning. *Appendix "H" contains the year 2032 total traffic operational analysis worksheets.*

[4] Consistent with the Section 30 study, a 0.5% compound growth rate was assumed for SE 192nd Avenue, SE 15th Street, and SE 20th Street. Also, a 1% annual growth rate was assumed along SE Mill Plain Boulevard and no growth was assumed for movements providing local access.





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2032 Background Conditions
Weekday AM Peak Hour
Vancouver, WA

Figure
14

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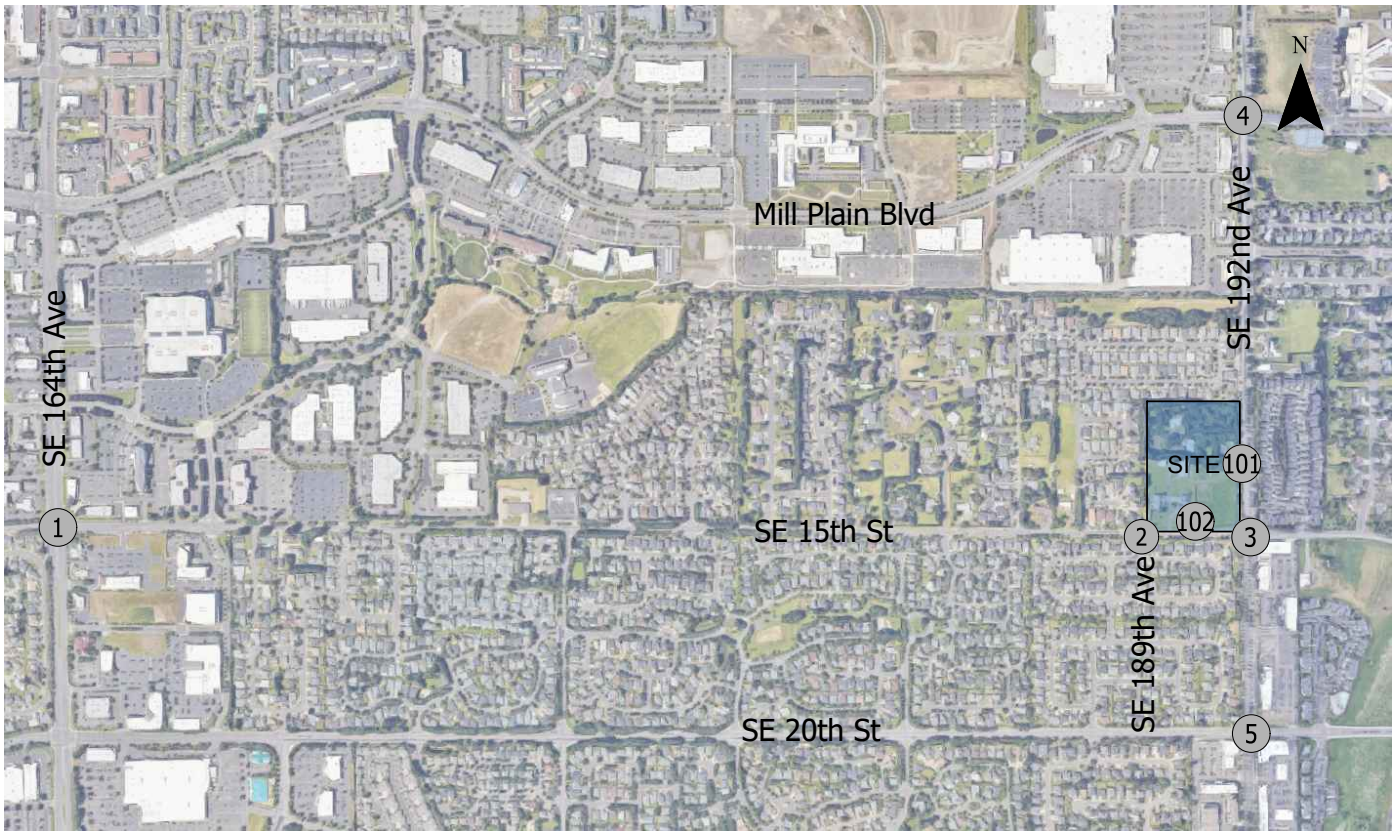

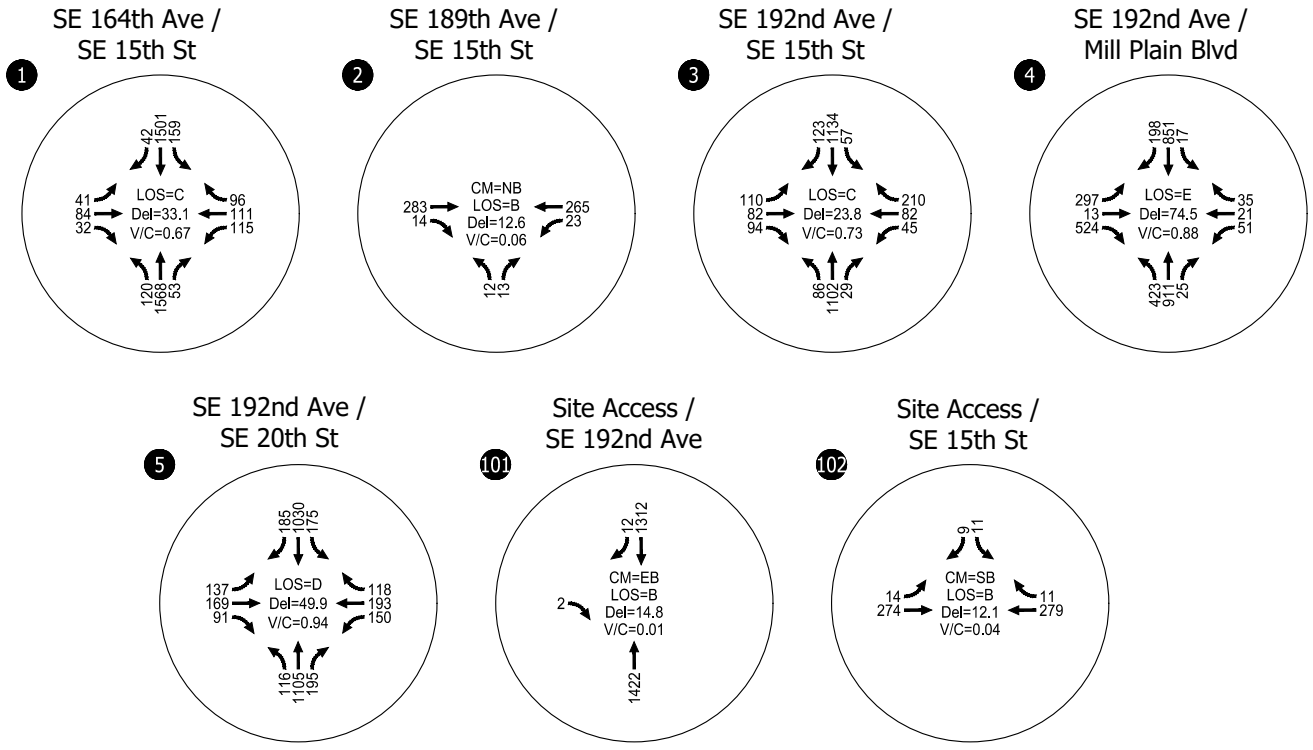

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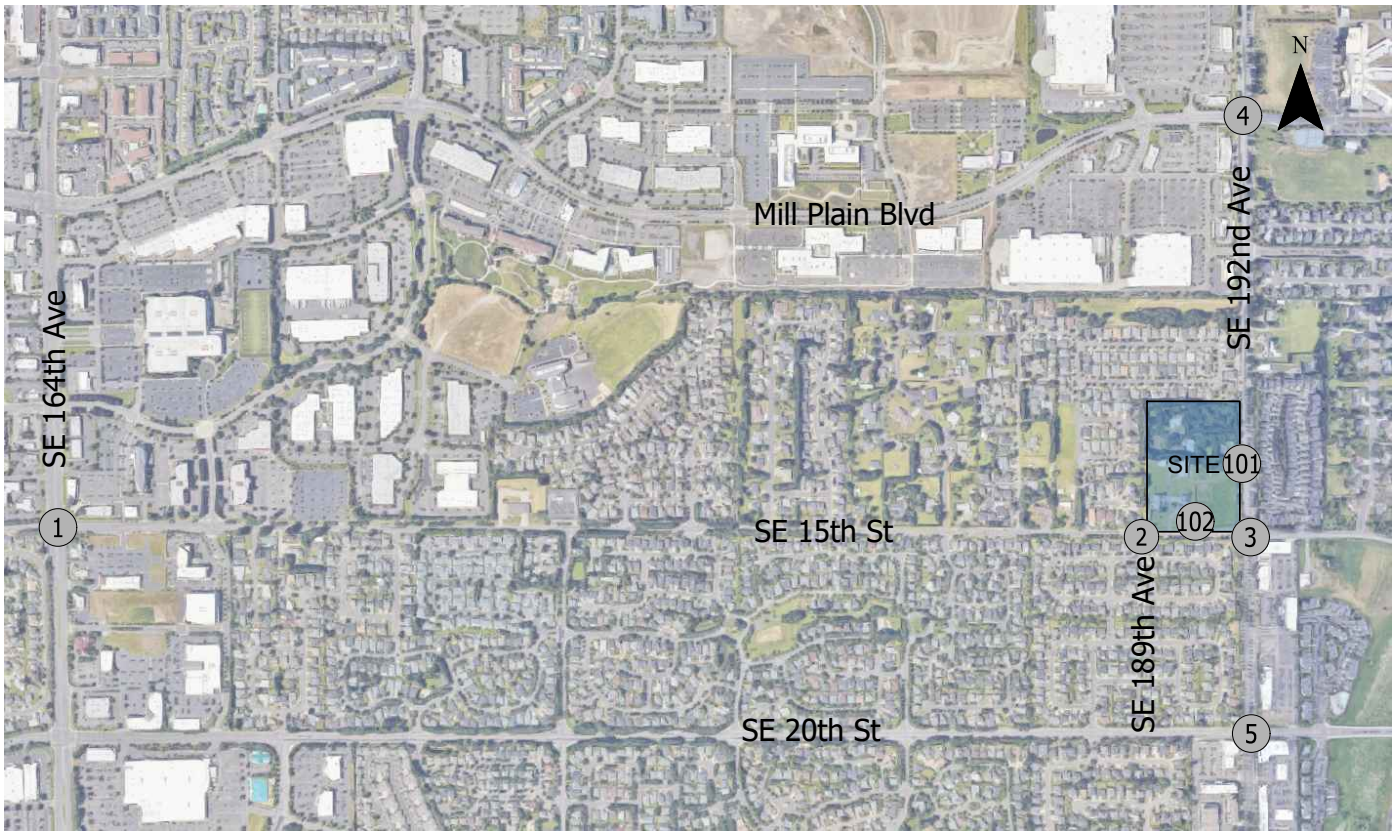
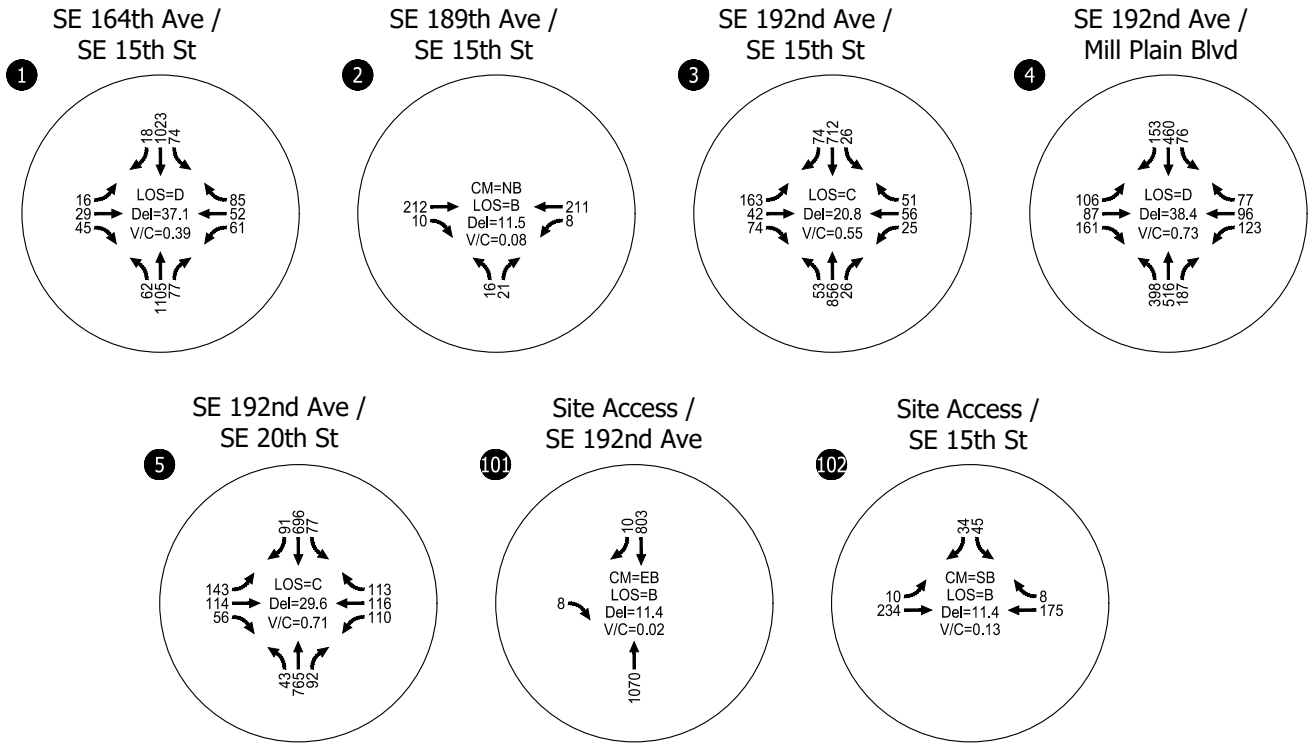
2032 Background Conditions
Weekday PM Peak Hour
Vancouver, WA

Figure
15





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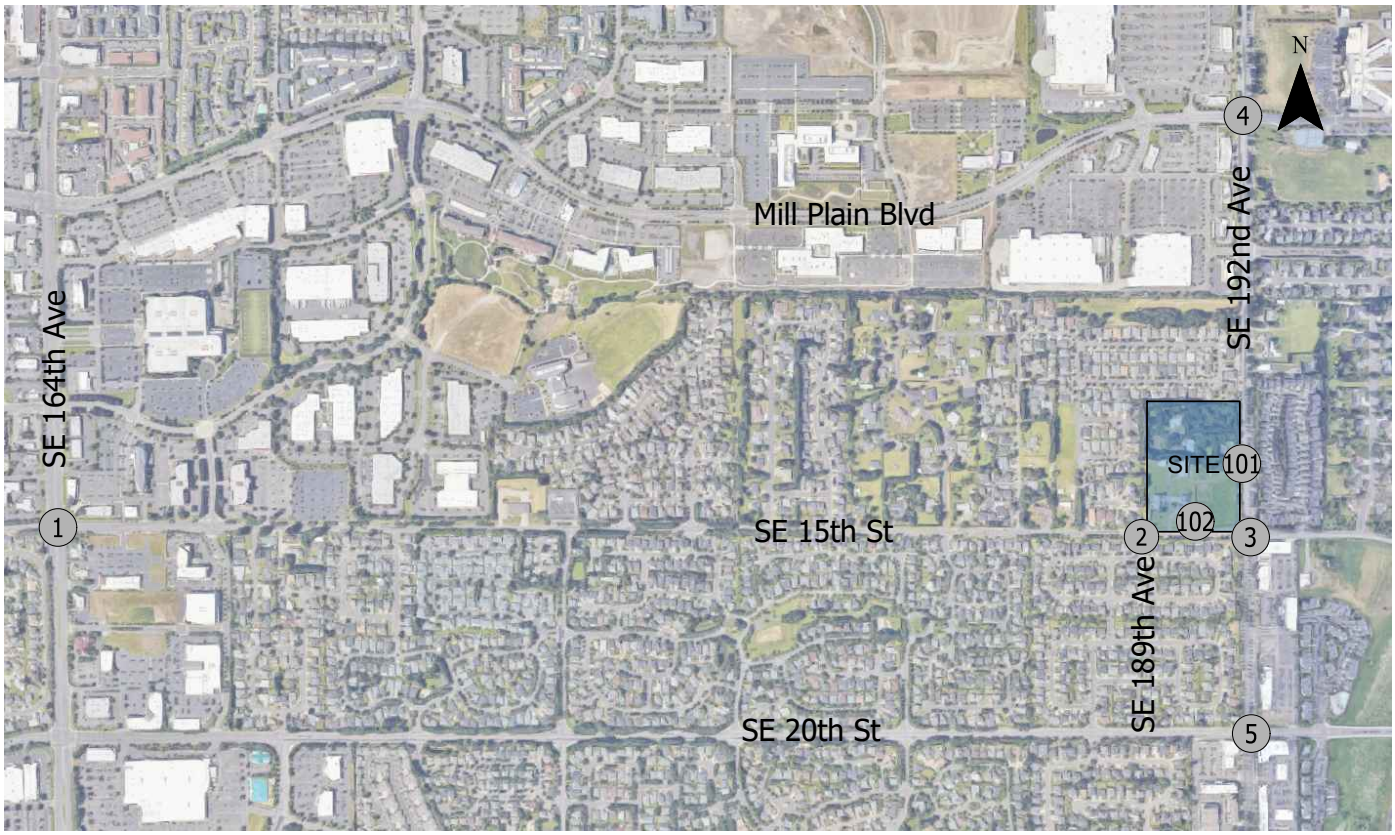
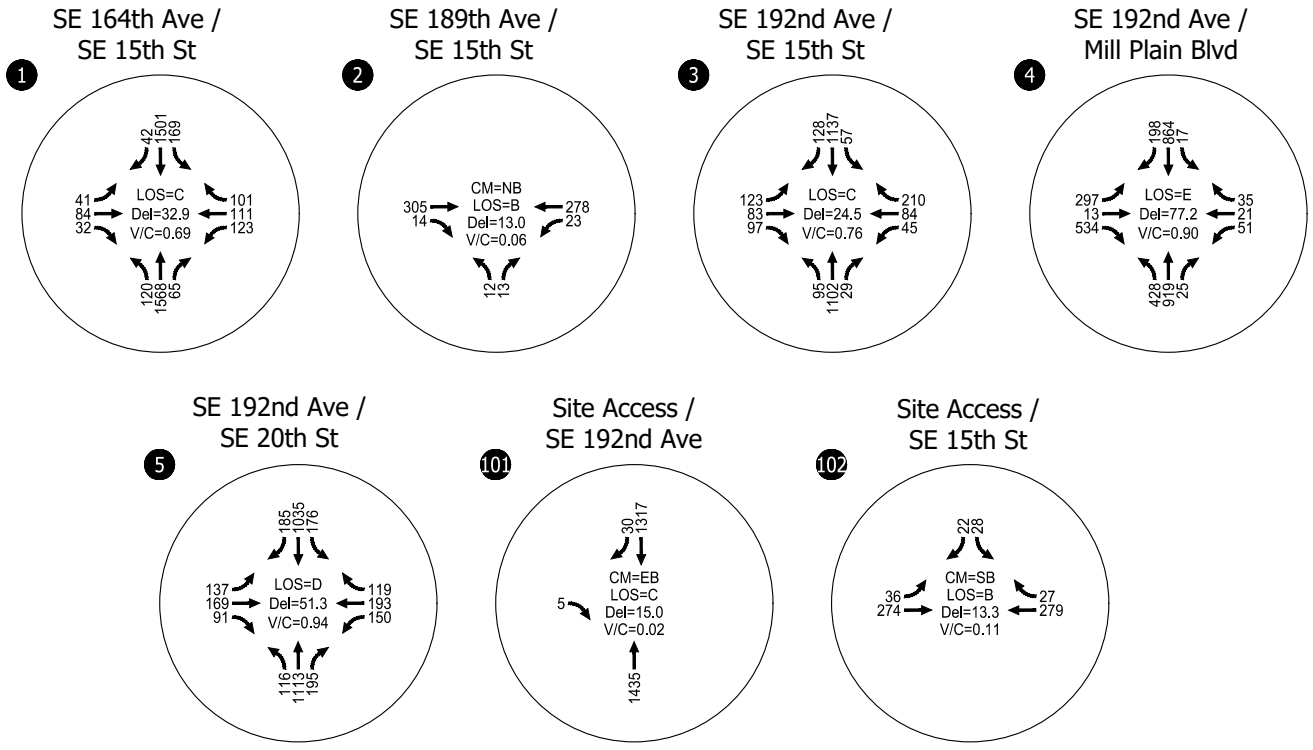
2032 Total Conditions
Weekday AM Peak Hour
Vancouver, WA

Figure 16





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2032 Total Conditions
Weekday PM Peak Hour
Vancouver, WA

Figure
17

Signalized Intersection Queuing Analysis

Queue lengths were evaluated at each of the signalized study intersections to identify potential queue spillback occurring during the future five-year 2032 background and total traffic scenarios. Tables 5 and 6 summarize 95th percentile queue lengths estimated by Synchro 11 at each of the study intersection's respective turn lanes and the through lanes adjacent to the anticipated site driveways.

Table 5. Future Five-Year (2032) Background Traffic Conditions (Existing Zoning) 95th Percentile Queue Lengths at Signalized Study Intersections

Intersection	Queue Length (feet)	Eastbound			Westbound		Northbound		Southbound		
		Left	Thru	Right	Left	Right	Left	Right	Left	Thru	Right
SE 164th Avenue & SE 15th Street	Storage	100	-	-	250	325	150	150	225	-	225
	AM Peak	25	-	-	75	50	100	25	125	-	25
	PM Peak	75	-	-	150	50	**175**	25	200	-	25
SE 192nd Avenue & SE 15th Street	Storage	110	-	-	110	110	175	-	475	-	-
	AM Peak	**175**	75	-	50	0	50	-	50	300	-
	PM Peak	**150**	175	-	100	100	50	-	100	475	-
SE 192nd Avenue & SE Mill Plain Boulevard	Storage	225	-	150	100	-	200	-	150	-	-
	AM Peak	125	-	50	**150**	-	**250**	-	100	-	-
	PM Peak	**500**	-	**325**	75	-	**300**	-	50	-	-
SE 192nd Avenue & SE 20th Street	Storage	100	-	-	100	-	325	-	400	-	-
	AM Peak	100	-	-	75	-	75	-	125	-	-
	PM Peak	75	-	-	100	-	175	-	225	-	-

Notes:
95th percentile queue lengths have been rounded up to the nearest vehicle length, assuming one vehicle equals 25 feet
Bold cells indicate 95th percentile queue lengths greater than the storage length
Storage measured as the length of white gore stripe for turn lane

Table 6. Future Five-Year (2032) Total Traffic Conditions (Proposed Zoning) 95th Percentile Queue Lengths at Signalized Study Intersections

Intersection	Queue Length (feet)	Eastbound			Westbound		Northbound		Southbound		
		Left	Thru	Right	Left	Right	Left	Right	Left	Thru	Right
SE 164th Avenue & SE 15th Street	Storage	100	-	-	250	325	150	150	225	-	225
	AM Peak	25	-	-	75	50	100	25	125	-	25
	PM Peak	75	-	-	150	50	**175**	25	225	-	25
SE 192nd Avenue & SE 15th Street	Storage	110	400[1]	-	110	110	175	-	475	525[2]	-
	AM Peak	**175**	75	-	50	0	50	-	50	300	-
	PM Peak	**150**	175	-	100	100	75	-	100	500	-
SE 192nd Avenue & SE Mill Plain Boulevard	Storage	225	-	150	100	-	200	-	150	-	-
	AM Peak	125	-	50	**150**	-	**250**	-	100	-	-
	PM Peak	**500**	-	**325**	75	-	**300**	-	50	-	-
SE 192nd Avenue & SE 20th Street	Storage	100	-	-	100	-	325	-	400	-	-
	AM Peak	100	-	-	75	-	75	-	125	-	-
	PM Peak	75	-	-	100	-	175	-	200	-	-

Notes:
95th percentile queue lengths have been rounded up to the nearest vehicle length, assuming one vehicle equals 25 feet
Bold cells indicate 95th percentile queue lengths greater than the storage length
Storage measured as the length of white gore stripe for turn lane
[1]There is approximately 400 feet between the eastbound traffic signal stop bar at SE 192nd Avenue and the conceptual site driveway location assumed on SE 15th Street
[2]There is approximately 525 feet between the southbound traffic signal stop bar at SE 15th Street and the conceptual site driveway location assumed on SE 192nd Avenue

As shown in Tables 5 and 6, at the intersection of SE 164th Avenue & SE 15th Street, the northbound left-turn queues are projected to experience 95th percentile queues that exceed the existing striped storage length during the weekday PM peak hour under 2032 background and total traffic conditions. Note that while only 150 feet of left-turn storage is striped, there is approximately 50 feet of additional storage available before the queue would block northbound through vehicles. Given that the proposed CPA and Zone Change does not change the projected northbound left-turn queue and does not add any additional trips to this movement, no mitigation is recommended at this time. Potential turn lane queues storage needs at the intersection can be revisited at the time of a future site development application.

At the intersection of SE 192nd Avenue & SE 15th Street, the eastbound left-turn queues are projected to experience 95th percentile queues that exceed the existing striped storage length during the weekday AM and PM peak hours under 2032 background and total traffic conditions. The proposed CPA and zone change does not impact the projected queue storage and thus does not need to be mitigated as a function of the site zoning. The queue projections indicate the eastbound left-turn lane at SE 192nd Avenue / SE 15th Street may need to be extended to provide up to 175 feet of storage based on the projections in this study. The actual turn lane storage length needs will depend in part on the density of site development that is proposed in the future and can be best assessed at the time of site plan application as required by the VMC. Subject to City of Vancouver direction and per standard City development review practice, future site development applications for the study site (as well as other development in the area) should continue to assess the need for additional eastbound left-turn lane queue storage on SE 15th Street at SE 192nd Avenue. The City of Vancouver can monitor turn lane storage length needs through the City's development review process and require an extension of the turn lane in conjunction with a future site plan application based on the documented turn lane storage needs at the time of site plan application in

accordance with the VMC. For these reasons, no queuing mitigation is recommended as a function of the proposed CPA and zone change.

The eastbound through and southbound through queues are not expected to extend past the anticipated site driveways on SE 15th Street and SE 192nd Avenue.

At the intersection of SE 192nd Avenue & SE Mill Plain Boulevard the eastbound left-turn and right-turn, westbound left-turn, and northbound left-turn queues are projected to experience 95th percentile queues that exceed the existing striped storage length regardless of the proposed CPA and zone change. Given the proposed CPA and Zone Change does not alter the projected queue lengths and does not add trips to the eastbound left-turn or westbound left-turn movements, no mitigation is recommended as a function of the proposed CPA and zone change. Potential turn lane queues storage needs at the intersection can be revisited at the time of a future site development application.

Unsignalized Intersection Queuing Analysis

A 95th percentile queuing analysis was completed using HCM 6th Edition analysis at the unsignalized study intersections. All of the 95th percentile stop-controlled approach queues were projected to be one vehicle length or less and can be accommodated within available storage.

There is approximately 150 feet between SE 189th Avenue and the anticipated site driveway on SE 15th Street. The 95th percentile queues for the westbound left-turn at SE 189th Avenue and the eastbound left-turn at the anticipated site driveway were projected to be one vehicle length or less and therefore are not expected to back up through the adjacent driveway.

Driveway Turn Lane Considerations

Right-turn and left-turn lane needs were evaluated at the anticipated site driveways, a right-in/right-out driveway along SE 192nd Avenue and a full access driveway along SE 15th Street, using WSDOT turn lane guidelines (Reference 6).

Under 2032 total traffic conditions, assuming the reasonable worst-case development under the proposed zoning, WSDOT volume-based criteria for providing turn lanes at the anticipated site driveways on SE 192nd Avenue and SE 15th Street are not met under either weekday AM or PM peak hour traffic conditions. Southbound volumes on SE 192nd Avenue do meet the criteria for considering a right-turn pocket or taper; however, installation of tapers is not recommended given the presence of the bicycle lane and intersection sight distance considerations. Potential turn lane needs at the site access driveways can be revisited at the time of a future site development application.

Appendix "I" includes the WSDOT turn lane criteria at the anticipated site driveways.

FINDINGS AND RECOMMENDATIONS

Based on the results of this Traffic Impact Analysis, the proposed CPA and Zone Change can be approved while maintaining acceptable study intersection operations. The analysis developed the findings and recommendations listed below.

Findings

- All of the study intersections were found to operate acceptably under opening year (2027) and five-year horizon (2032) traffic conditions with reasonable worst-case development of the site under both the existing (R-6) and proposed (R-30) zoning.
- The eastbound left-turn queues at SE 192nd Avenue / SE 15th Street are anticipated to exceed the currently available storage length under future five-year 2032 background (existing zoning) and total (proposed zoning) traffic conditions during the AM and PM peak hours assuming reasonable worst-case development of the site under both the existing (R-6) and proposed (R-30) zoning.
  - Subject to City of Vancouver direction and the specific traffic impacts of potential future site development, the eastbound left-turn lane at SE 192nd Avenue / SE 15th Street may need to be extended to provide up to 175 feet of storage based on the projections in this study.
  - The actual turn lane storage length needs will depend in part on the density of site development that is proposed in the future and can be best assessed at the time of site plan application as required by the VMC.
- No safety-based mitigation needs were identified based on review of historic crash data at the study intersections.
- WSDOT volume-based criteria for providing turn lanes at the anticipated site driveways on SE 192nd Avenue and SE 15th Street are not met under either weekday AM or PM peak hour traffic conditions. Southbound volumes on SE 192nd Avenue do meet the criteria for considering a right-turn pocket or taper; however, installation of tapers is not recommended given the presence of the bicycle lane and intersection sight distance considerations. Potential turn lane needs at the site access driveways can be revisited at the time of a future site development application.

Recommendations

- Subject to City of Vancouver direction and per standard City development review practice, future site development applications for the study site (as well as other development in the area) should continue to assess the need for additional eastbound left-turn lane queue storage on SE 15th Street at SE 192nd Avenue. The City of Vancouver can monitor turn lane storage length needs through the City's development review process and require an extension of the turn lane in conjunction with a future site plan application based on the documented turn lane storage needs at the time of site plan application in accordance with the VMC.

We trust this transportation impact analysis adequately addresses the traffic impacts associated with the proposed SE 192nd Avenue CPA and Zone Change request. Please contact us at 503.535.7445 or kconnolly@kittelson.com if you have questions or require additional information.

References

1. City of Vancouver Washington. *Vancouver Municipal Code*. 2023.
2. Transportation Research Board. *2000 Highway Capacity Manual.* 2000.
3. Transportation Research Board. *Highway Capacity Manual 6th Edition*. 2016.
4. Institute of Transportation Engineers. *Trip Generation Manual, 11th Edition*. 2021.
5. Institute of Transportation Engineers. *Trip Generation Handbook, 3rd Edition*. 2017.
6. Washington State Department of Transportation. *Design Manual*. September 2022.

Appendices

A. Traffic Count Data
B. WSDOT Crash Data
C. 2023 Existing Operations Worksheets
D. In-process Trips
E. 2027 Background Operations (Existing Zoning) Worksheets
F. 2027 Total Operations (Proposed Zoning) Worksheets
G. 2032 Background Operations (Existing Zoning) Worksheets
H. 2032 Total Operations (Proposed Zoning) Worksheets
I. WSDOT Turn Lane Criteria

Appendix A Traffic Count Data

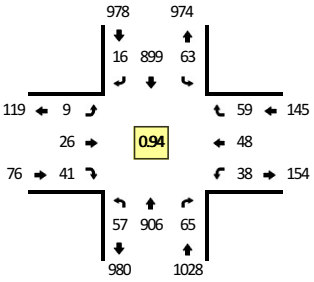
Type of peak hour being reported: Intersection Peak

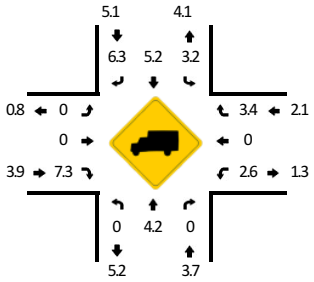
Method for determining peak hour: Total Entering Volume

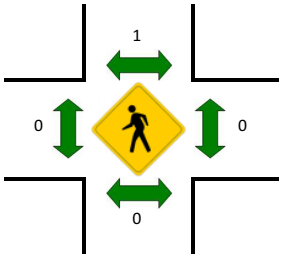
LOCATION: SE 164th Ave -- SE 15th St
CITY/STATE: Vancouver, WA

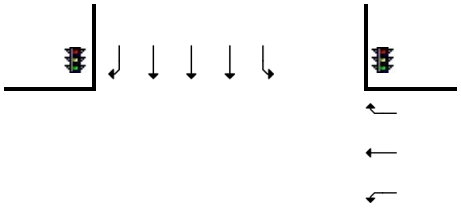
QC JOB #: 16228505
DATE: Tue, Jun 6 2023

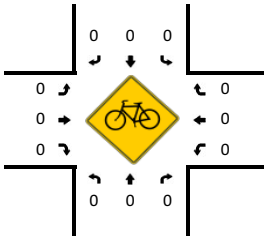
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

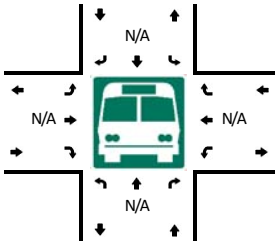


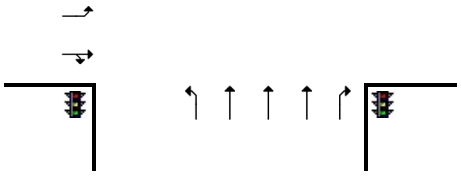


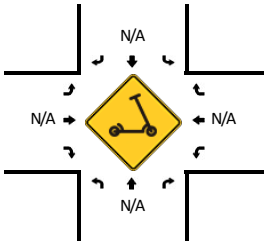












5-Min Count Period Beginning At	SE 164th Ave (Northbound)				SE 164th Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	36	2	0	4	66	2	0	1	1	1	0	1	0	6	0	120	
7:05 AM	5	61	2	0	1	41	1	0	2	2	0	0	5	1	3	0	124	
7:10 AM	1	48	1	0	4	57	1	0	0	1	2	0	4	2	6	0	127	
7:15 AM	1	47	4	0	1	51	0	0	1	0	2	0	6	3	9	0	125	
7:20 AM	0	49	1	0	6	63	0	0	2	0	2	0	1	5	7	0	136	
7:25 AM	4	56	2	0	1	46	0	0	0	2	2	0	2	3	11	0	129	
7:30 AM	1	71	2	0	3	69	1	0	1	1	3	0	2	0	6	0	160	
7:35 AM	0	75	3	0	4	49	1	0	0	1	3	0	3	1	4	0	144	
7:40 AM	3	63	3	0	8	74	0	0	0	0	3	0	3	1	3	0	161	
7:45 AM	6	71	4	0	0	74	3	0	4	3	0	0	2	0	9	0	176	
7:50 AM	2	91	9	0	9	74	2	0	1	7	2	0	2	5	6	0	210	
7:55 AM	4	75	6	0	5	75	4	0	0	3	2	0	0	2	7	0	183	1795
8:00 AM	5	76	7	0	5	84	2	0	2	1	4	0	5	5	5	0	201	1876
8:05 AM	4	78	4	0	6	62	0	0	0	3	4	0	5	6	3	0	175	1927
8:10 AM	6	64	8	0	6	82	1	0	1	2	1	0	6	2	3	0	182	1982
8:15 AM	7	79	6	0	7	70	1	0	0	2	6	0	4	6	1	0	189	2046
8:20 AM	4	67	7	0	4	76	0	0	0	0	4	0	1	2	7	0	172	2082
8:25 AM	8	88	5	0	4	50	1	0	3	0	2	0	6	2	8	0	177	2130
8:30 AM	2	62	2	0	3	97	1	0	1	1	7	0	0	7	5	0	188	2158
8:35 AM	2	77	4	1	1	61	2	0	0	1	5	0	4	2	3	0	163	2177
8:40 AM	7	69	1	1	6	86	1	0	1	3	4	0	1	4	6	0	190	2206
8:45 AM	4	80	6	0	7	82	1	0	0	3	0	0	4	5	5	0	197	2227
8:50 AM	3	82	4	0	9	91	1	0	0	0	2	0	5	6	4	0	207	2224
8:55 AM	9	74	8	0	7	62	3	0	1	1	2	0	4	3	5	0	179	2220

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	968	88	0	76	932	32	0	12	44	32	0	28	48	72	0	2376
Heavy Trucks	0	32	0		0	52	4		0	0	4		0	0	4		96
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 12:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

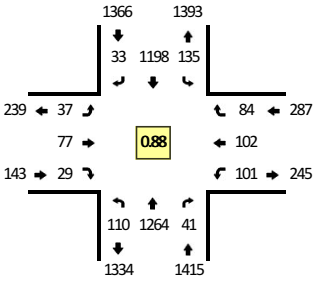
Type of peak hour being reported: Intersection Peak

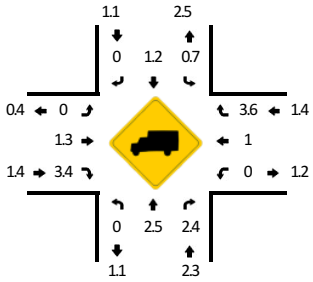
Method for determining peak hour: Total Entering Volume

LOCATION: SE 164th Ave -- SE 15th St
CITY/STATE: Vancouver, WA

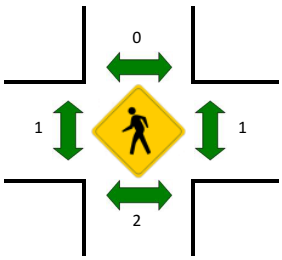
QC JOB #: 16228506
DATE: Tue, Jun 6 2023

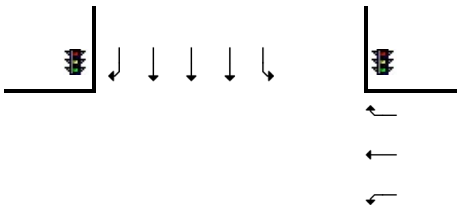
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

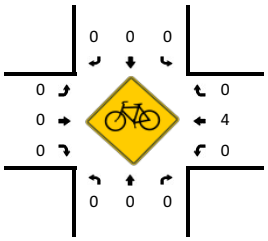


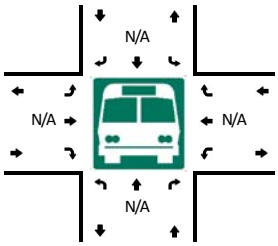


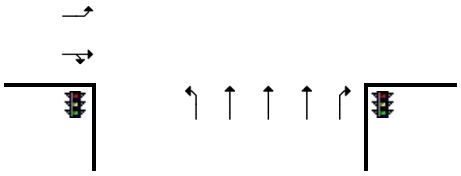
Quality Counts
DATA THAT DRIVES COMMUNITIES

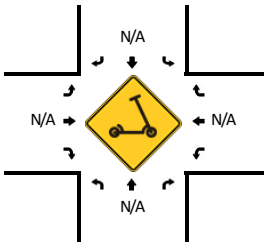












5-Min Count Period Beginning At	SE 164th Ave (Northbound)				SE 164th Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	117	5	0	3	100	2	0	4	2	5	0	9	6	3	0	261	
4:05 PM	13	84	4	0	7	64	3	0	6	8	3	0	16	4	6	0	218	
4:10 PM	8	106	6	0	6	119	5	0	6	5	3	0	7	2	11	0	284	
4:15 PM	9	95	2	0	9	87	1	0	2	10	2	0	13	6	9	0	245	
4:20 PM	6	150	3	0	6	110	1	0	3	2	3	0	7	4	9	0	304	
4:25 PM	5	98	5	0	12	73	3	0	3	2	2	0	7	8	4	0	222	
4:30 PM	6	132	5	0	7	79	3	0	2	4	3	0	5	6	9	0	261	
4:35 PM	6	75	2	0	15	88	0	1	3	5	8	0	14	6	4	0	227	
4:40 PM	11	116	3	1	5	114	1	2	0	3	0	0	5	13	6	0	280	
4:45 PM	7	112	3	2	9	71	1	1	2	11	1	0	18	6	8	0	252	
4:50 PM	12	117	4	0	8	95	2	0	2	3	0	0	5	10	9	0	267	
4:55 PM	4	95	2	0	12	78	2	1	1	8	1	0	5	10	7	0	226	3047
5:00 PM	6	112	2	1	10	114	7	1	3	3	2	0	7	5	6	0	279	3065
5:05 PM	9	86	2	0	11	93	3	0	9	9	4	0	12	11	10	0	259	3106
5:10 PM	8	116	2	0	9	147	5	2	5	5	2	0	11	3	4	0	319	3141
5:15 PM	13	88	6	1	17	78	3	0	4	8	2	0	11	15	8	0	254	3150
5:20 PM	10	137	3	0	10	139	6	0	4	9	5	0	4	11	6	0	344	3190
5:25 PM	12	78	7	1	14	102	0	0	2	9	1	0	4	6	7	0	243	3211
5:30 PM	3	91	4	0	8	85	4	0	5	8	11	0	5	1	6	0	231	3181
5:35 PM	4	72	1	0	5	67	4	1	1	8	5	0	4	5	6	0	183	3137
5:40 PM	6	97	6	0	6	114	2	2	1	3	7	0	1	5	4	0	254	3111
5:45 PM	11	83	4	1	10	82	1	0	3	4	5	0	5	10	10	0	229	3088
5:50 PM	8	111	2	0	7	99	5	0	2	6	6	0	7	5	6	0	264	3085
5:55 PM	4	68	0	0	5	70	3	0	4	0	2	0	1	11	4	0	172	3031

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	124	1364	44	4	144	1456	56	8	52	88	36	0	104	116	72	0	3668
Heavy Trucks	0	20	0		0	16	0		0	4	0		0	0	4		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	8	0		8
Scooters																	

Comments:

Report generated on 6/15/2023 12:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

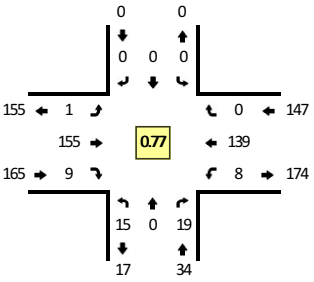
Type of peak hour being reported: Intersection Peak

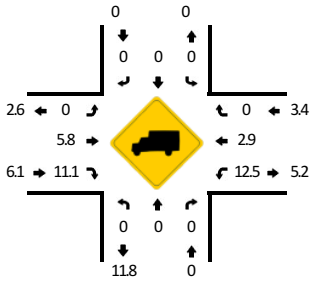
Method for determining peak hour: Total Entering Volume

LOCATION: SE 189th Ave -- SE 15th St
CITY/STATE: Vancouver, WA

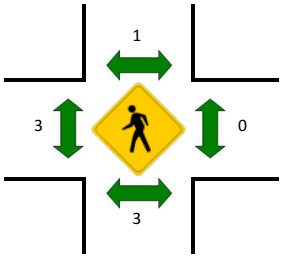
QC JOB #: 16228503
DATE: Tue, Jun 6 2023

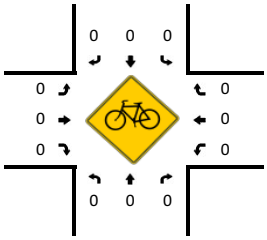
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

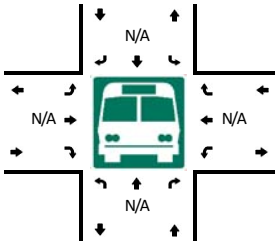


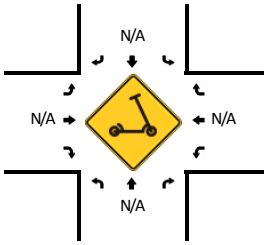


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	SE 189th Ave (Northbound)				SE 189th Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	5	0	0	0	2	0	0	8	
7:05 AM	0	0	3	0	0	0	0	0	0	5	0	0	0	6	0	0	14	
7:10 AM	0	0	2	0	0	0	0	0	0	6	1	0	0	6	0	0	15	
7:15 AM	1	0	0	0	0	0	0	0	0	5	1	0	0	7	0	0	14	
7:20 AM	0	0	2	0	0	0	0	0	0	9	0	0	1	6	0	0	18	
7:25 AM	1	0	1	0	0	0	0	0	0	6	0	0	1	4	0	0	13	
7:30 AM	0	0	1	0	0	0	0	0	0	10	2	0	1	6	0	0	20	
7:35 AM	3	0	2	0	0	0	0	0	0	12	0	0	2	4	0	0	23	
7:40 AM	0	0	1	0	0	0	0	0	0	10	0	0	1	4	0	0	16	
7:45 AM	1	0	2	0	0	0	0	0	0	11	0	0	3	11	0	0	28	
7:50 AM	1	0	0	0	0	0	0	0	0	13	0	0	1	8	0	0	23	
7:55 AM	0	0	1	0	0	0	0	0	0	9	0	0	1	18	0	0	29	221
8:00 AM	1	0	1	0	0	0	0	0	0	10	0	0	0	13	0	0	25	238
8:05 AM	1	0	1	0	0	0	0	0	0	15	0	0	1	9	0	0	27	251
8:10 AM	2	0	2	0	0	0	0	0	0	18	0	0	0	12	0	0	34	270
8:15 AM	2	0	3	0	0	0	0	0	0	18	0	0	1	8	0	0	32	288
8:20 AM	0	0	5	0	0	0	0	0	0	19	1	1	0	9	0	0	35	305
8:25 AM	2	0	2	0	0	0	0	0	0	22	1	0	0	18	0	0	45	337
8:30 AM	2	0	0	0	0	0	0	0	0	8	1	0	0	4	0	0	15	332
8:35 AM	1	0	1	0	0	0	0	0	0	8	0	0	3	11	0	0	24	333
8:40 AM	0	0	1	0	0	0	0	0	0	10	1	0	0	11	0	0	23	340
8:45 AM	3	0	0	0	0	0	0	0	0	10	3	0	0	10	0	0	26	338
8:50 AM	1	0	2	0	0	0	0	0	0	8	2	0	2	16	0	0	31	346
8:55 AM	2	0	2	0	0	0	0	0	0	9	1	0	0	14	0	0	28	345

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	40	0	0	0	0	0	0	236	8	4	4	140	0	0	448
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	0	0		20
Buses																	
Pedestrians		0				0				8				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 12:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

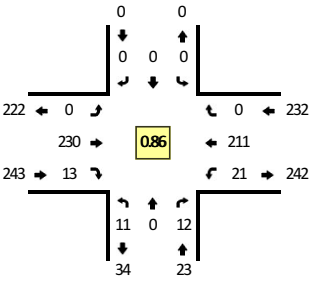
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

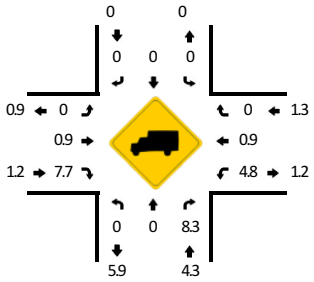
LOCATION: SE 189th Ave -- SE 15th St
CITY/STATE: Vancouver, WA

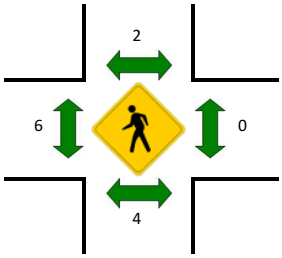
QC JOB #: 16228504
DATE: Tue, Jun 6 2023

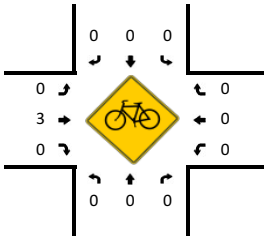
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

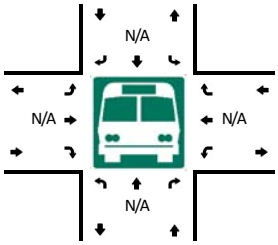


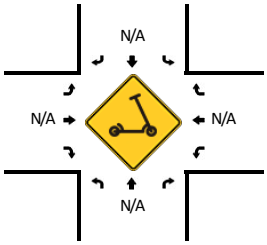
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	SE 189th Ave (Northbound)				SE 189th Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	2	0	0	0	0	0	0	11	1	0	4	28	0	0	48	
4:05 PM	1	0	0	0	0	0	0	0	0	14	5	0	1	18	0	0	39	
4:10 PM	1	0	2	0	0	0	0	0	0	15	0	0	2	25	0	0	45	
4:15 PM	2	0	1	0	0	0	0	0	0	11	0	0	1	17	0	0	32	
4:20 PM	1	0	2	0	0	0	0	0	0	16	1	0	1	10	0	0	31	
4:25 PM	1	0	1	0	0	0	0	0	0	13	0	0	0	12	0	0	27	
4:30 PM	0	0	1	0	0	0	0	0	0	12	1	0	2	16	0	0	32	
4:35 PM	0	0	3	0	0	0	0	0	0	15	2	0	0	14	0	0	34	
4:40 PM	0	0	2	0	0	0	0	0	0	14	1	0	0	18	0	0	35	
4:45 PM	2	0	5	0	0	0	0	0	0	17	0	0	0	14	0	0	38	
4:50 PM	1	0	4	0	0	0	0	0	0	20	2	0	1	20	0	0	48	
4:55 PM	2	0	3	0	0	0	0	0	0	19	0	0	2	15	0	0	41	450
5:00 PM	1	0	0	0	0	0	0	0	0	13	1	0	2	12	0	0	29	431
5:05 PM	1	0	0	0	0	0	0	0	0	19	0	0	3	28	0	0	51	443
5:10 PM	0	0	0	0	0	0	0	0	0	20	2	0	1	19	0	0	42	440
5:15 PM	1	0	1	0	0	0	0	0	0	21	1	0	2	25	0	0	51	459
5:20 PM	1	0	0	0	0	0	0	0	0	22	1	0	1	21	0	0	46	474
5:25 PM	1	0	3	0	0	0	0	0	0	21	0	0	4	9	0	0	38	485
5:30 PM	1	0	0	0	0	0	0	0	0	19	0	0	2	9	0	0	31	484
5:35 PM	0	0	1	0	0	0	0	0	0	20	2	0	2	14	0	0	39	489
5:40 PM	1	0	0	0	0	0	0	0	0	20	3	0	0	18	0	0	42	496
5:45 PM	1	0	0	0	0	0	0	0	0	16	1	0	1	21	0	0	40	498
5:50 PM	2	0	2	0	0	0	0	0	0	16	2	0	1	12	0	0	35	485
5:55 PM	1	0	1	0	0	0	0	0	0	17	0	0	0	19	0	0	38	482

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	4	0	0	0	0	0	0	240	12	0	24	288	0	0	576
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 12:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

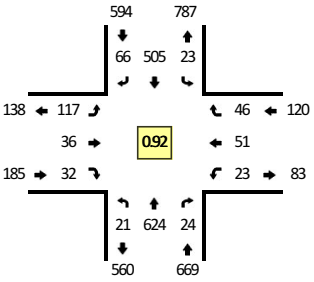
Type of peak hour being reported: Intersection Peak

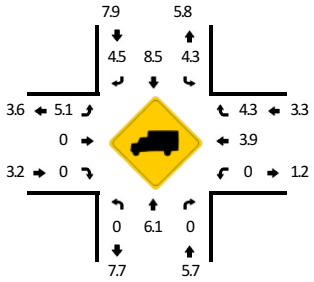
Method for determining peak hour: Total Entering Volume

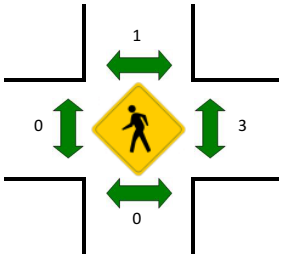
LOCATION: SE 192nd Ave -- SE 15th St
CITY/STATE: Vancouver, WA

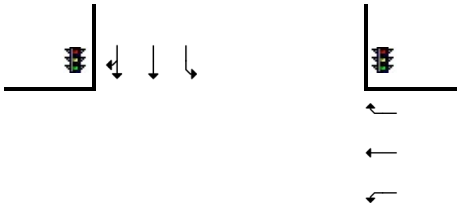
QC JOB #: 16228501
DATE: Tue, Jun 6 2023

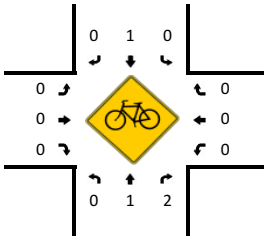
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

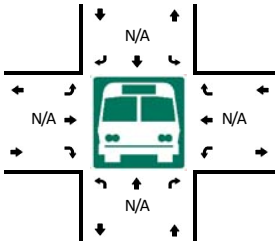


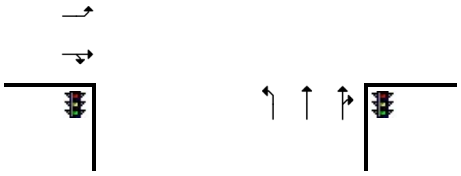


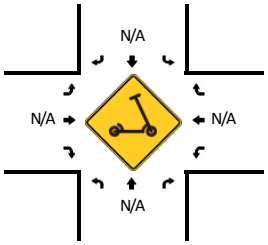












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	25	0	0	3	29	1	0	1	1	2	0	1	0	2	0	66	
7:05 AM	1	33	0	0	0	35	4	0	3	2	0	0	1	0	2	0	81	
7:10 AM	0	24	1	0	1	32	4	0	5	3	0	0	0	2	3	0	75	
7:15 AM	1	36	0	0	0	52	4	0	2	1	1	0	0	2	2	0	101	
7:20 AM	1	41	1	0	2	32	3	0	3	4	4	0	1	3	2	0	97	
7:25 AM	0	39	0	0	4	40	3	0	2	1	2	0	1	2	2	0	96	
7:30 AM	3	50	1	0	0	31	4	0	7	2	1	0	0	1	2	0	102	
7:35 AM	2	47	2	0	2	35	1	0	11	4	4	0	1	3	0	0	112	
7:40 AM	2	59	4	0	3	34	1	0	6	1	4	0	2	2	3	0	121	
7:45 AM	1	59	2	0	1	43	8	0	10	3	3	0	3	5	5	0	143	
7:50 AM	4	55	1	0	2	57	5	0	12	3	6	0	2	2	4	0	153	
7:55 AM	2	43	3	0	3	41	10	0	2	5	2	0	2	8	5	0	126	1273
8:00 AM	0	46	3	0	3	43	9	0	6	3	2	0	1	3	3	0	122	1329
8:05 AM	2	47	1	0	1	35	5	0	11	3	0	0	2	3	3	0	113	1361
8:10 AM	4	42	1	0	1	39	2	0	9	3	6	0	0	6	3	0	116	1402
8:15 AM	0	66	1	0	3	39	4	0	16	4	2	0	1	5	6	0	147	1448
8:20 AM	1	56	2	0	0	31	3	0	13	3	3	0	4	8	3	0	127	1478
8:25 AM	3	46	2	0	1	52	9	0	20	5	4	0	4	5	2	0	153	1535
8:30 AM	0	48	2	0	2	39	2	0	8	1	0	0	0	1	6	0	109	1542
8:35 AM	2	57	2	0	3	52	8	0	4	2	0	0	2	3	3	0	138	1568
8:40 AM	3	39	0	0	2	43	4	0	8	1	3	0	1	4	3	0	111	1558
8:45 AM	6	57	2	0	0	47	1	0	7	1	2	0	2	4	1	0	130	1545
8:50 AM	3	41	1	0	5	48	8	0	5	2	2	0	1	6	3	0	125	1517
8:55 AM	4	50	2	0	0	51	8	0	5	3	2	0	0	2	6	0	133	1524

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	672	20	0	16	488	64	0	196	48	36	0	36	72	44	0	1708
Heavy Trucks	0	44	0		0	48	4		20	0	0		0	4	8		128
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 12:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

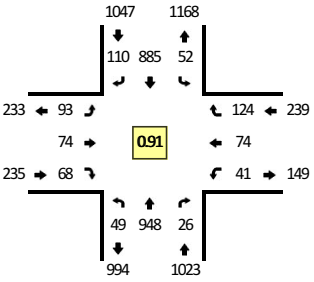
Type of peak hour being reported: Intersection Peak

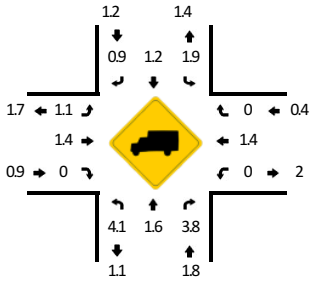
Method for determining peak hour: Total Entering Volume

LOCATION: SE 192nd Ave -- SE 15th St
CITY/STATE: Vancouver, WA

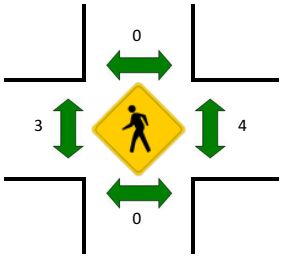
QC JOB #: 16228502
DATE: Tue, Jun 6 2023

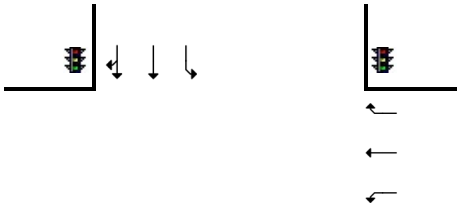
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

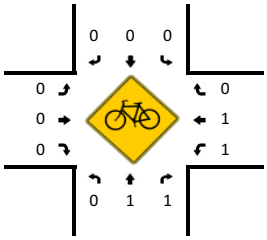


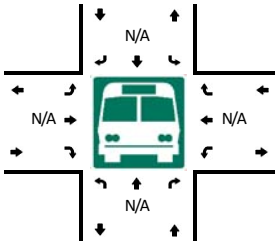


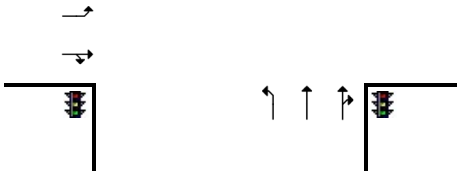
Quality Counts
DATA THAT DRIVES COMMUNITIES

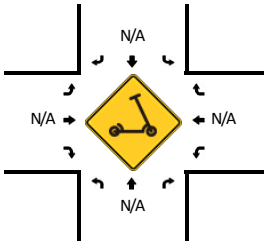












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	89	1	0	3	86	13	0	5	4	3	0	5	7	5	0	228	
4:05 PM	5	75	1	0	7	75	8	0	6	3	5	0	5	7	17	0	214	
4:10 PM	9	87	2	0	2	67	10	0	6	4	8	0	1	6	6	0	208	
4:15 PM	7	75	2	0	5	57	2	0	4	5	7	0	4	6	6	0	180	
4:20 PM	4	73	2	1	4	62	2	2	7	5	3	0	0	6	11	0	182	
4:25 PM	3	87	1	0	4	78	5	0	4	3	8	0	2	4	9	0	208	
4:30 PM	7	76	2	0	3	71	8	1	5	3	5	0	10	6	7	0	204	
4:35 PM	1	82	3	0	2	61	7	0	10	6	5	0	0	3	15	0	195	
4:40 PM	5	89	2	0	4	84	6	0	6	4	3	0	0	9	8	0	220	
4:45 PM	5	83	1	0	1	71	7	0	12	6	5	0	5	3	9	0	208	
4:50 PM	4	95	6	0	3	64	4	0	15	7	9	0	1	10	8	0	226	
4:55 PM	5	80	1	0	2	69	7	0	8	4	4	0	4	7	15	0	206	2479
5:00 PM	3	60	2	0	4	70	12	0	4	4	5	0	4	5	9	0	182	2433
5:05 PM	4	71	1	0	5	89	12	0	6	10	1	0	4	10	16	0	229	2448
5:10 PM	5	80	4	0	11	77	15	1	5	10	5	0	1	3	14	0	231	2471
5:15 PM	7	78	2	0	5	82	20	1	10	7	9	0	7	2	6	0	236	2527
5:20 PM	0	67	1	0	5	69	7	0	8	10	9	0	3	12	8	0	199	2544
5:25 PM	6	77	0	0	2	72	7	0	10	9	1	0	1	1	7	0	193	2529
5:30 PM	2	84	3	0	0	71	3	0	7	7	6	0	0	3	2	0	188	2513
5:35 PM	3	71	2	0	4	68	10	0	7	5	7	0	0	6	2	0	185	2503
5:40 PM	4	73	7	0	4	53	8	0	8	5	5	0	1	7	4	0	179	2462
5:45 PM	2	74	5	0	7	74	9	0	10	3	1	0	1	7	4	0	197	2451
5:50 PM	7	78	1	0	4	57	8	0	5	4	5	0	1	4	5	0	179	2404
5:55 PM	1	47	5	0	3	47	5	0	6	6	3	0	1	3	5	0	132	2330

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	916	28	0	84	992	188	8	84	108	60	0	48	60	144	0	2784
Heavy Trucks	0	16	4		0	4	4		0	4	0		0	0	0		32
Buses																	
Pedestrians		0				0				0				8			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 12:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SE 192nd Ave -- SE 15th St

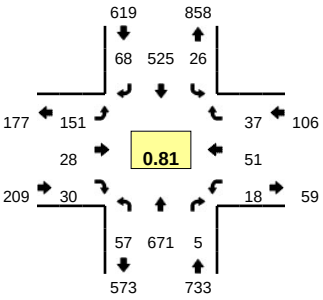
CITY/STATE: Camas, WA

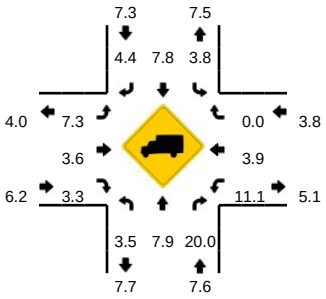
QC JOB #: 14421313

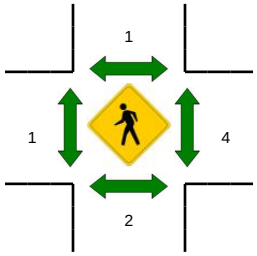
DATE: Thu, Jun 08 2017

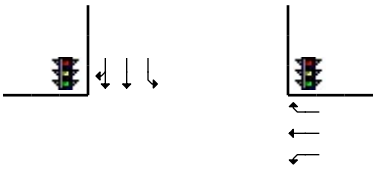
Peak-Hour: 7:30 AM -- 8:30 AM

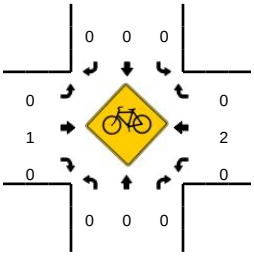
Peak 15-Min: 7:45 AM -- 8:00 AM

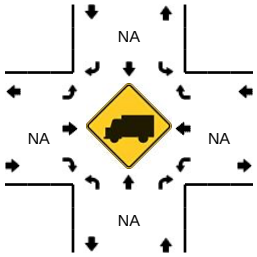


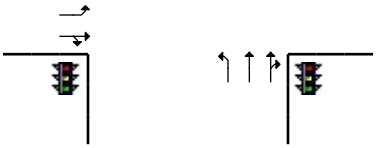


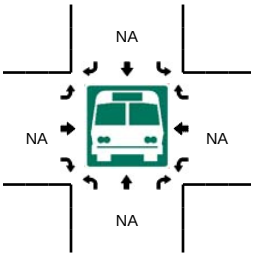












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	37	2	0	5	40	1	0	3	1	1	0	0	2	0	0	97	
7:05 AM	0	40	0	0	4	30	0	0	3	3	5	0	2	1	0	0	88	
7:10 AM	1	38	0	0	1	16	1	0	2	3	6	0	1	3	5	0	77	
7:15 AM	3	37	0	0	2	34	6	0	3	3	3	0	5	2	5	0	103	
7:20 AM	5	40	1	0	0	43	4	0	3	0	0	0	1	3	0	0	100	
7:25 AM	5	43	0	0	2	27	2	0	2	2	2	0	2	2	0	0	89	
7:30 AM	4	58	0	0	0	28	0	0	11	0	5	0	1	2	2	0	111	
7:35 AM	2	67	1	0	2	39	7	0	16	1	0	0	1	2	3	0	141	
7:40 AM	4	62	0	0	2	43	6	0	13	3	5	0	1	6	6	0	151	
7:45 AM	6	61	1	0	0	51	6	0	12	4	4	0	2	7	5	0	159	
7:50 AM	4	72	0	0	3	67	7	0	17	1	0	0	2	6	3	0	182	
7:55 AM	5	67	2	0	5	62	9	0	8	1	3	0	5	7	1	0	175	1473
8:00 AM	11	63	0	0	2	49	10	0	14	2	3	0	1	3	1	0	159	1535
8:05 AM	4	38	1	0	5	46	8	0	9	4	1	0	0	7	5	0	128	1575
8:10 AM	3	40	0	0	1	39	3	0	11	4	1	0	2	3	6	0	113	1611
8:15 AM	4	49	0	0	0	25	4	0	13	4	3	0	1	2	2	0	107	1615
8:20 AM	7	39	0	0	4	43	4	0	12	1	2	1	2	2	2	0	119	1634
8:25 AM	3	55	0	0	2	33	4	0	14	3	3	0	0	4	1	0	122	1667
8:30 AM	6	36	0	0	0	39	5	0	9	2	2	0	0	2	1	0	102	1658
8:35 AM	2	44	0	0	0	45	8	0	7	4	1	0	3	0	3	0	117	1634
8:40 AM	7	55	0	0	1	43	10	0	6	1	2	0	1	2	4	0	132	1615
8:45 AM	3	51	0	0	1	45	11	0	5	0	1	0	1	6	2	0	126	1582
8:50 AM	6	60	0	0	0	56	2	0	5	1	6	0	4	5	4	0	149	1549
8:55 AM	7	68	1	0	0	41	3	0	9	0	4	0	1	7	3	0	144	1518

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	60	800	12	0	32	720	88	0	148	24	28	0	36	80	36	0	2064
Heavy Trucks	0	44	0		0	48	4		4	0	0		0	0	0		100
Pedestrians		8				4				0				8			20
Bicycles	0	0	0		0	0	0		0	1	0		0	2	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/21/2017 9:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SE 192nd Ave -- SE 15th St

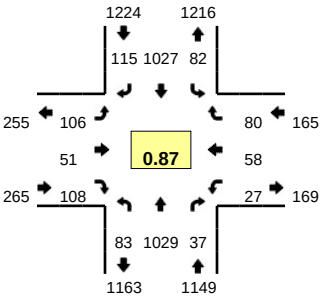
CITY/STATE: Camas, WA

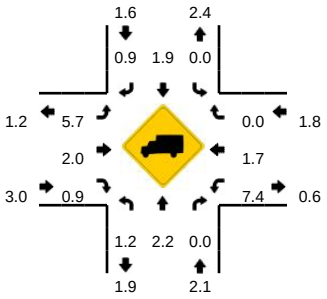
QC JOB #: 14421314

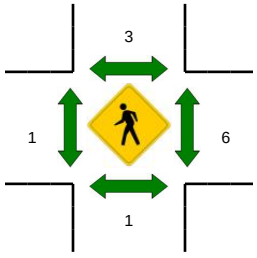
DATE: Thu, Jun 08 2017

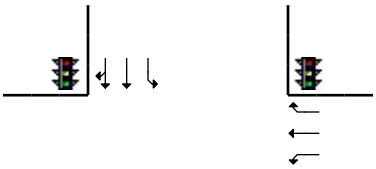
Peak-Hour: 4:30 PM -- 5:30 PM

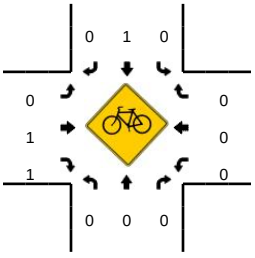
Peak 15-Min: 5:10 PM -- 5:25 PM

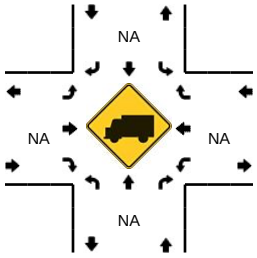


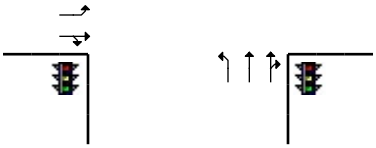


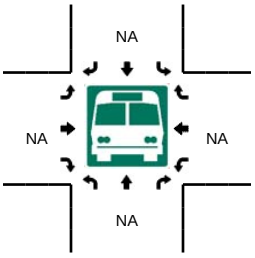












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 15th St (Eastbound)				SE 15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	89	0	1	2	85	14	0	5	7	8	0	2	7	1	0	224	
4:05 PM	5	87	5	0	4	79	14	0	6	4	2	0	5	8	6	0	225	
4:10 PM	10	87	3	0	2	97	10	0	7	7	9	0	4	8	6	0	250	
4:15 PM	3	84	3	0	8	79	16	0	6	7	5	0	0	2	3	0	216	
4:20 PM	10	75	0	0	4	82	12	0	12	6	7	0	2	3	2	0	215	
4:25 PM	3	89	3	0	4	70	4	0	8	2	8	0	3	2	6	0	202	
4:30 PM	5	98	6	0	5	90	8	0	10	5	9	0	1	5	2	0	244	
4:35 PM	5	81	1	0	6	69	7	0	9	5	7	0	3	2	10	0	205	
4:40 PM	10	87	2	0	7	81	9	0	6	4	5	0	5	1	1	0	218	
4:45 PM	8	85	2	1	11	75	12	0	10	1	6	0	1	5	7	0	224	
4:50 PM	7	72	2	0	6	71	12	0	14	6	16	0	0	7	7	0	220	
4:55 PM	7	90	2	0	4	77	5	0	10	2	7	0	4	4	7	0	219	2662
5:00 PM	5	87	6	0	7	83	8	0	5	1	8	0	1	3	6	0	220	2658
5:05 PM	10	75	2	0	6	87	5	0	11	7	12	0	3	6	10	0	234	2667
5:10 PM	10	110	7	0	8	113	13	0	7	4	5	0	2	4	6	0	289	2706
5:15 PM	7	78	2	0	11	96	14	0	5	4	14	0	4	11	4	0	250	2740
5:20 PM	5	89	4	0	4	103	14	1	11	9	10	0	0	6	13	0	269	2794
5:25 PM	3	77	1	0	6	82	8	0	8	3	9	0	3	4	7	0	211	2803
5:30 PM	5	76	3	0	0	73	7	0	8	5	5	0	1	4	6	0	193	2752
5:35 PM	4	76	0	0	4	79	4	0	10	8	5	0	0	7	3	0	200	2747
5:40 PM	7	96	2	0	3	98	4	0	7	3	8	0	1	0	8	0	237	2766
5:45 PM	5	81	6	1	3	86	9	0	9	3	8	0	3	5	3	0	222	2764
5:50 PM	6	84	5	0	4	67	8	0	6	5	5	0	2	1	5	0	198	2742
5:55 PM	1	81	2	0	4	66	8	0	6	5	4	0	1	4	5	0	187	2710

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	88	1108	52	0	92	1248	164	4	92	68	116	0	24	84	92	0	3232
Heavy Trucks	0	20	0		0	36	0		8	4	4		0	0	0		72
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad Stopped Buses																	

Comments:

Report generated on 6/21/2017 9:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

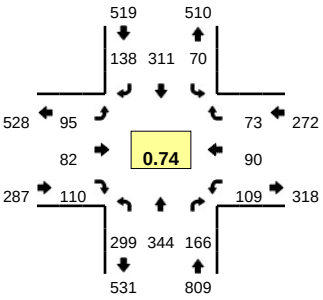
LOCATION: SE 192nd Ave -- Mill Plain Blvd

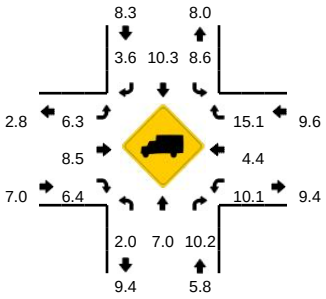
QC JOB #: 14493301

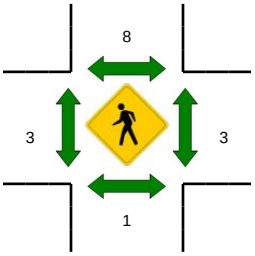
CITY/STATE: Vancouver, WA

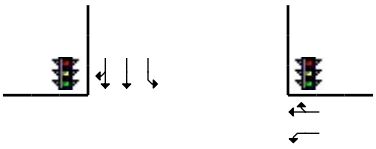
DATE: Tue, Sep 26 2017

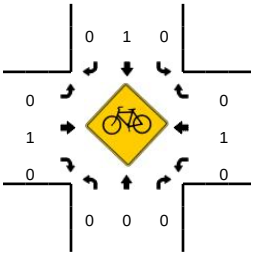
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

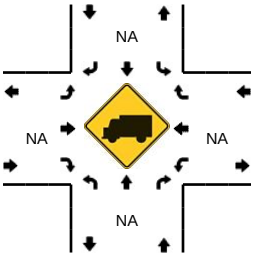


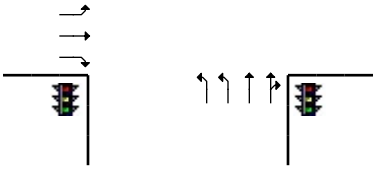


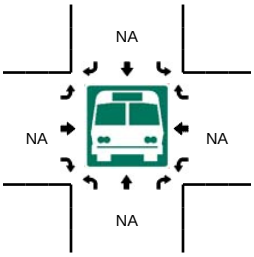












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				Mill Plain Blvd (Eastbound)				Mill Plain Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	13	10	3	0	2	21	2	0	2	2	9	0	1	0	0	0	65	
7:05 AM	8	22	4	0	4	19	5	0	7	2	4	0	1	0	0	0	76	
7:10 AM	24	23	3	0	2	22	2	0	3	1	6	0	0	0	1	0	87	
7:15 AM	25	18	3	0	3	15	7	0	8	3	14	0	0	0	1	0	97	
7:20 AM	24	29	7	0	2	22	11	0	8	2	7	0	0	0	1	0	113	
7:25 AM	19	25	6	0	7	21	8	0	6	2	9	0	4	0	1	0	108	
7:30 AM	15	26	24	0	10	24	8	0	5	6	7	1	7	3	2	0	138	
7:35 AM	24	13	31	0	8	9	11	0	1	17	7	0	17	5	5	0	148	
7:40 AM	42	29	37	1	18	32	17	0	1	12	4	0	11	16	7	0	227	
7:45 AM	23	20	11	0	11	32	13	0	7	6	11	1	12	13	15	0	175	
7:50 AM	33	28	36	0	10	19	12	0	13	15	12	0	22	13	20	0	233	
7:55 AM	32	21	14	0	6	34	13	0	12	23	15	0	19	23	14	0	226	1693
8:00 AM	22	25	4	0	3	22	10	0	6	2	9	0	13	10	3	0	129	1757
8:05 AM	21	32	1	0	3	25	9	0	9	1	5	0	6	4	1	0	117	1798
8:10 AM	24	38	3	0	0	26	9	0	9	0	8	0	1	2	2	0	122	1833
8:15 AM	14	36	2	0	0	35	15	0	12	0	6	0	1	1	2	0	124	1860
8:20 AM	33	33	1	0	1	25	4	0	3	0	15	0	0	0	1	0	116	1863
8:25 AM	15	43	2	0	0	28	17	0	15	0	11	0	0	0	1	0	132	1887
8:30 AM	14	38	0	0	2	45	15	0	8	0	4	0	1	0	0	0	127	1876
8:35 AM	20	31	0	0	0	37	16	0	13	3	12	0	0	1	0	0	133	1861
8:40 AM	29	33	0	0	0	30	8	0	4	0	4	0	0	1	0	0	109	1743
8:45 AM	20	27	0	0	2	42	18	0	1	1	9	0	0	1	2	0	123	1691
8:50 AM	32	25	1	0	0	24	15	0	5	1	11	0	2	1	1	0	118	1576
8:55 AM	29	33	1	0	1	24	6	0	7	1	11	0	1	0	0	0	114	1464

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	392	308	336	4	156	332	168	0	84	132	108	4	180	168	168	0	2540
Heavy Trucks	12	20	48		16	32	0		4	8	0		28	8	40		216
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/3/2017 3:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

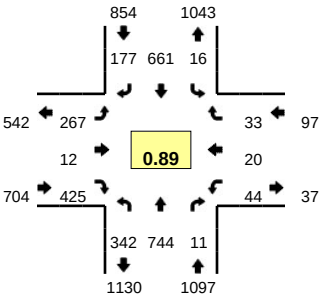
LOCATION: SE 192nd Ave -- Mill Plain Blvd

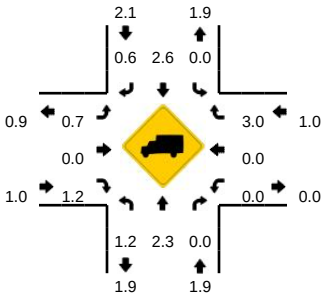
CITY/STATE: Vancouver, WA

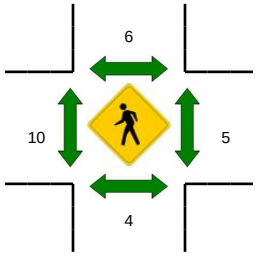
QC JOB #: 14493302

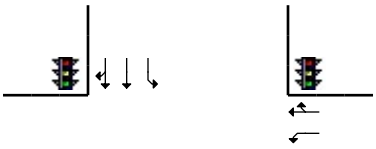
DATE: Tue, Sep 26 2017

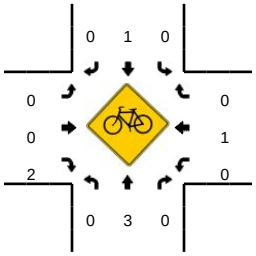
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

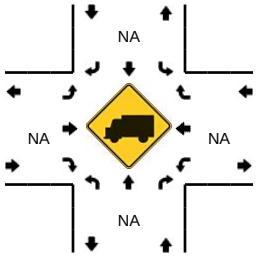


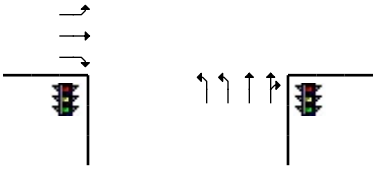


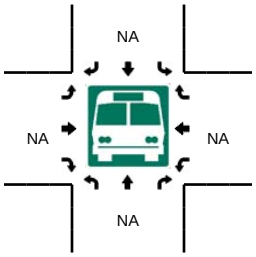












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				Mill Plain Blvd (Eastbound)				Mill Plain Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	23	60	2	0	2	56	15	1	23	2	28	0	12	7	5	0	236	
4:05 PM	28	59	1	0	2	59	11	0	26	1	34	0	4	2	3	0	230	
4:10 PM	33	48	3	0	3	57	16	0	19	1	21	0	6	4	1	0	212	
4:15 PM	22	44	0	0	0	53	14	0	26	5	28	0	5	4	1	0	202	
4:20 PM	15	52	3	0	0	45	15	0	23	2	32	1	4	3	5	0	200	
4:25 PM	28	35	0	0	0	55	19	0	18	0	21	0	5	1	7	0	189	
4:30 PM	30	56	1	0	2	41	10	0	14	2	28	0	1	1	7	0	193	
4:35 PM	31	62	2	0	2	42	14	0	14	0	30	0	11	4	7	0	219	
4:40 PM	24	53	0	0	1	58	13	0	26	1	36	0	10	5	10	0	237	
4:45 PM	26	67	1	0	2	46	14	1	18	2	30	0	2	0	0	0	209	
4:50 PM	25	56	3	0	3	64	11	0	18	3	27	0	1	1	3	0	215	
4:55 PM	31	56	0	0	2	57	17	0	29	1	30	1	5	1	3	0	233	2575
5:00 PM	29	55	2	0	2	60	16	0	14	1	34	1	6	4	2	0	226	2565
5:05 PM	24	71	2	0	0	74	13	0	30	1	54	0	6	0	1	0	276	2611
5:10 PM	30	72	0	0	0	66	16	1	30	0	51	0	2	1	2	0	271	2670
5:15 PM	32	64	1	0	0	47	20	0	12	2	39	0	1	0	2	0	220	2688
5:20 PM	35	72	0	0	0	49	15	0	31	1	34	0	0	1	2	0	240	2728
5:25 PM	29	57	0	0	2	40	12	0	21	0	25	0	0	3	1	0	190	2729
5:30 PM	26	59	0	0	0	58	16	0	21	0	35	1	0	0	0	0	216	2752
5:35 PM	23	56	0	0	0	47	17	0	29	1	32	0	0	0	0	0	205	2738
5:40 PM	24	61	0	0	2	67	18	0	21	1	25	0	0	0	1	0	220	2721
5:45 PM	24	51	2	0	1	46	12	0	24	0	32	0	1	0	0	0	193	2705
5:50 PM	23	53	0	0	0	61	19	0	26	1	28	0	0	0	0	0	211	2701
5:55 PM	23	48	1	0	0	51	13	0	16	2	28	0	0	0	1	0	183	2651

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	332	792	16	0	8	800	180	4	296	8	556	4	56	20	20	0	3092
Heavy Trucks	0	16	0		0	12	0		0	0	4		0	0	0		32
Pedestrians		12				12				0				16			40
Bicycles	0	1	0		0	1	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/3/2017 3:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

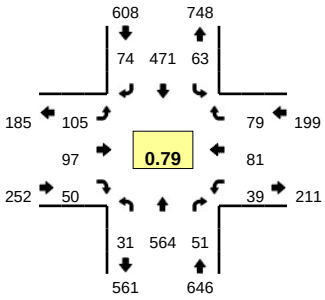
Method for determining peak hour: Total Entering Volume

LOCATION: SE 192nd Ave -- SE 20th St

CITY/STATE: Camas, WA

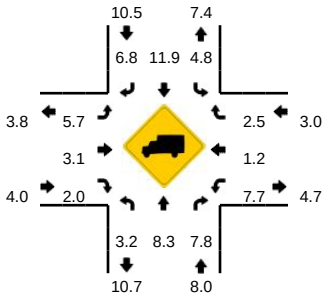
QC JOB #: 14421305

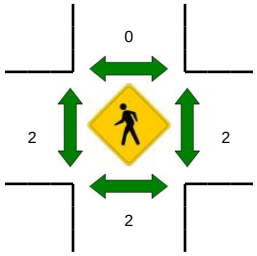
DATE: Thu, May 25 2017

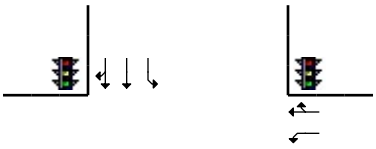


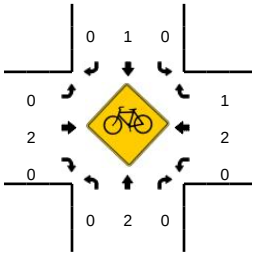
Peak-Hour: 7:30 AM -- 8:30 AM

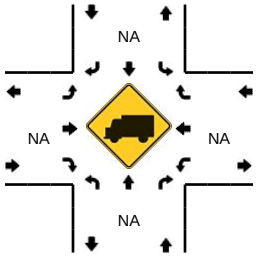
Peak 15-Min: 7:45 AM -- 8:00 AM

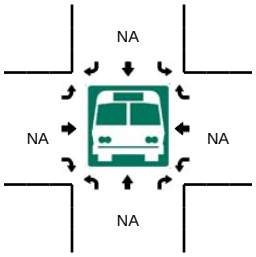












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 20th St (Eastbound)				SE 20th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	28	1	0	8	22	0	0	1	14	0	0	0	7	3	0	86	
7:05 AM	5	33	3	0	7	18	4	0	1	1	5	0	1	8	7	0	93	
7:10 AM	1	31	2	0	4	23	2	0	3	2	8	0	2	7	1	0	86	
7:15 AM	1	32	1	0	2	25	4	0	1	6	2	0	1	4	5	0	84	
7:20 AM	1	29	1	0	2	26	2	0	2	5	7	0	4	8	2	0	89	
7:25 AM	3	38	3	0	0	40	2	0	6	5	5	0	2	7	2	0	113	
7:30 AM	1	51	4	0	3	22	5	0	7	11	5	0	2	5	7	0	123	
7:35 AM	2	59	0	0	4	39	8	0	16	9	5	0	3	8	12	0	165	
7:40 AM	2	43	8	0	5	38	6	0	9	10	5	0	2	10	7	0	145	
7:45 AM	7	55	11	0	5	61	9	0	16	9	2	0	2	4	11	0	192	
7:50 AM	4	69	6	0	11	47	10	0	12	9	2	0	1	5	5	0	181	
7:55 AM	3	45	4	0	10	47	9	0	9	13	5	0	2	6	11	0	164	1521
8:00 AM	2	39	3	0	8	46	8	0	3	7	3	0	6	4	7	0	136	1571
8:05 AM	4	38	4	0	3	35	5	0	12	8	2	0	5	10	7	0	133	1611
8:10 AM	1	40	1	1	1	33	4	0	4	4	2	0	3	3	0	0	97	1622
8:15 AM	1	36	3	0	4	30	1	0	7	8	5	0	3	7	6	0	111	1649
8:20 AM	2	40	5	0	4	36	7	0	5	3	7	0	5	9	3	0	126	1686
8:25 AM	1	49	2	0	5	37	2	0	5	6	7	0	5	10	3	0	132	1705
8:30 AM	4	37	4	1	5	31	3	0	2	5	7	0	8	0	3	0	110	1692
8:35 AM	4	48	6	0	2	30	6	0	3	5	4	0	7	5	5	0	125	1652
8:40 AM	2	32	2	0	0	44	0	0	7	5	3	0	9	13	3	0	120	1627
8:45 AM	3	49	3	0	10	27	3	0	9	10	5	0	2	8	6	0	135	1570
8:50 AM	3	54	4	0	1	29	4	0	2	7	12	0	6	10	7	0	139	1528
8:55 AM	2	43	4	0	8	46	5	0	9	7	11	0	4	10	11	0	160	1524

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	676	84	0	104	620	112	0	148	124	36	0	20	60	108	0	2148
Heavy Trucks	0	40	0		4	60	4		0	0	0		0	0	4		112
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	1	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/21/2017 9:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

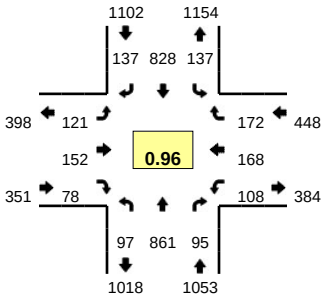
Method for determining peak hour: Total Entering Volume

LOCATION: SE 192nd Ave -- SE 20th St

QC JOB #: 14421306

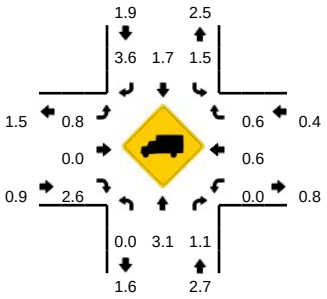
CITY/STATE: Camas, WA

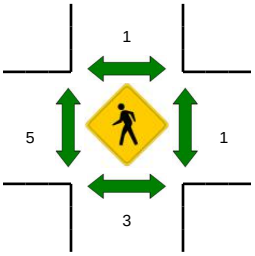
DATE: Wed, May 24 2017

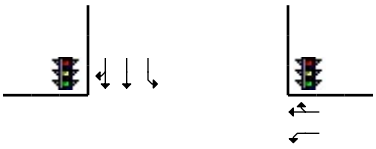


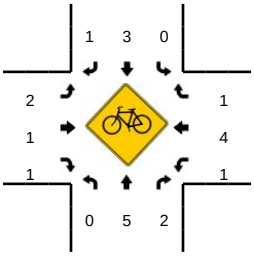
Peak-Hour: 4:35 PM -- 5:35 PM

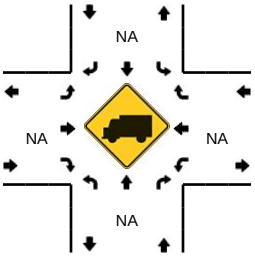
Peak 15-Min: 5:00 PM -- 5:15 PM

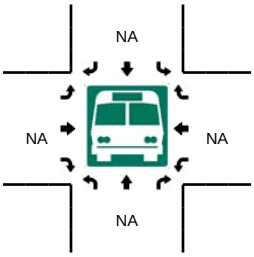












5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 20th St (Eastbound)				SE 20th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	53	4	0	12	60	14	0	13	8	4	0	7	14	9	0	206	
4:05 PM	6	66	4	0	7	73	13	0	11	16	6	0	10	13	11	0	236	
4:10 PM	7	58	3	0	7	72	8	0	6	8	4	0	3	12	8	0	196	
4:15 PM	7	49	2	0	10	62	6	0	15	14	5	0	6	12	10	0	198	
4:20 PM	12	78	6	0	10	77	12	0	11	12	5	0	7	11	6	0	247	
4:25 PM	11	74	6	1	10	67	10	0	11	18	9	0	11	9	6	0	243	
4:30 PM	7	60	2	1	14	77	16	0	13	11	3	0	8	10	11	0	233	
4:35 PM	9	80	8	0	9	82	7	0	7	7	5	0	10	12	22	0	258	
4:40 PM	9	49	6	0	7	70	20	0	7	12	8	0	9	11	13	0	221	
4:45 PM	7	71	9	1	11	58	14	0	12	14	9	0	10	14	15	0	245	
4:50 PM	11	76	9	0	13	56	12	0	6	16	3	0	6	13	3	0	224	
4:55 PM	6	71	10	1	13	72	16	0	14	12	7	0	7	15	13	0	257	2764
5:00 PM	6	63	6	1	9	64	13	0	15	11	8	0	9	17	7	0	229	2787
5:05 PM	8	81	6	1	9	75	13	0	9	19	3	0	13	23	16	0	276	2827
5:10 PM	3	71	4	0	15	92	12	0	7	14	6	0	12	16	16	0	268	2899
5:15 PM	11	66	6	0	9	72	4	0	8	9	6	0	9	7	18	0	225	2926
5:20 PM	9	73	13	0	13	59	9	0	17	11	15	0	5	18	15	0	257	2936
5:25 PM	5	86	9	0	14	61	11	0	6	17	4	0	9	10	15	0	247	2940
5:30 PM	9	74	9	0	15	67	6	0	13	10	4	0	9	12	19	0	247	2954
5:35 PM	7	68	6	0	15	61	9	0	14	17	8	0	5	17	9	0	236	2932
5:40 PM	6	61	4	0	8	86	5	0	13	9	4	0	6	15	5	0	222	2933
5:45 PM	9	50	5	0	10	82	9	0	10	15	9	0	7	10	14	0	230	2918
5:50 PM	6	65	5	0	4	67	10	0	15	6	2	0	9	14	8	0	211	2905
5:55 PM	8	43	3	0	10	68	6	0	9	9	3	0	3	5	5	0	172	2820

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	68	860	64	8	132	924	152	0	124	176	68	0	136	224	156	0	3092
Heavy Trucks	0	20	0		4	16	4		4	0	0		0	0	0		48
Pedestrians		4				0				0				0			4
Bicycles	0	2	0		0	2	0		1	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/21/2017 9:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix B WSDOT Crash Data

OFFICER REPORTED CRASHES THAT OCCURRED *at* OR *in the vicinity of* MULTIPLE INTERSECTIONS IN THE CITY OF VANCOUVER

01/01/2017 - 12/31/2021 See 2nd tab below for road information

Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	A / B	SR ONLY HISTORY/ SUSPENSE	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PED	# BIKES	VEHICLE 1 TYPE	VEHICLE 2 TYPE	JUNCTION RELATIONSHIP
City Street	Clark	Vancouver	SE 15TH ST	0	SE 189TH AVE							No	E820956	07/23/2018	13:04	Suspected Serious Injury	2	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 15TH ST		SE 192ND AVE							No	E999464	01/02/2020	15:52	No Apparent Injury	0	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 15TH ST	0	SE 192ND AVE							No	E744865	12/08/2017	02:14	Possible Injury	1	0	1	0	0	Passenger Car		At Intersection and Related
City Street	Clark	Vancouver	SE 15TH ST	9900	SE 192ND AVE							No	E735632	11/14/2017	15:40	Possible Injury	3	0	2	0	0	Truck (Flatbad,Van,etc)	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 15TH ST	16200		150	F	E	SE 164TH AVE			No	E837473	09/11/2018	23:23	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 164TH AVE	0	SE 15TH ST							No	E788423	04/07/2018	16:00	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Not Stated	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	0	SE 15TH ST							No	E903320	03/16/2019	21:25	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	0	SE 15TH ST							No	E996754	12/23/2019	08:55	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	0	SE 15TH ST							No	EA10410	02/02/2020	14:47	Died in Hospital	0	1	2	0	0	Motorcycle	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	0	SE 15TH ST							No	E958122	09/04/2019	18:24	No Apparent Injury	0	0	3	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	0	SE 15TH ST							No	E870893	12/05/2018	10:05	No Apparent Injury	0	0	3	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	1415	SE 15TH ST							No	EA68616	10/01/2020	10:29	Possible Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	1411	SE 15TH ST							No	EA59678	08/31/2020	03:28	Suspected Minor Injury	2	0	3	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 164TH AVE	1400		201	F	N	SE 15TH ST			No	EA86193	11/20/2020	13:55	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1500		257	F	S	SE 15TH ST			No	E819663	07/10/2018	18:38	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1400		158	F	N	SE 15TH ST			No	E877511	12/29/2018	15:30	Possible Injury	1	0	3	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1400		306	F	N	SE 15TH ST			No	E653226	03/17/2017	22:26	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1500		44	F	S	SE 15TH ST			No	E884544	01/17/2019	18:14	No Apparent Injury	0	0	2	0	0	Not Stated	Passenger Car	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1500		105	F	S	SE 15TH ST			No	E924809	05/28/2019	13:05	No Apparent Injury	0	0	3	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 164TH AVE	1000		0.25	M	N	SE 15TH ST			No	E741189	11/25/2017	01:59	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1400		201	F	N	SE 15TH ST			No	E794893	04/25/2018	14:58	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 164TH AVE	1500		162	F	S	SE 15TH ST			No	E683023	06/19/2017	13:25	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 164TH AVE	1400		100	F	NE	SE 15TH ST			No	EA07058	01/24/2020	13:40	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 15TH ST							No	E795421	05/07/2018	09:56	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 15TH ST							No	E880276	01/07/2019	19:05	No Apparent Injury	0	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 15TH ST							No	EA07064	01/15/2020	16:40	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 15TH ST							No	E908184	04/04/2019	11:56	Suspected Minor Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	9900	SE 20TH ST							No	E697125	07/13/2017	10:45	No Apparent Injury	0	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	2000	SE 20TH ST							No	EB49012	07/15/2021	14:21	Possible Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 20TH ST							No	EA53822	07/31/2020	09:46	No Apparent Injury	0	0	2	0	0	Truck (Flatbad,Van,etc)	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 20TH ST							No	E995917	12/03/2019	12:49	No Apparent Injury	0	0	1	0	0	Passenger Car		At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	400	SE MILL PLAIN BLVD							No	EB22831	04/17/2021	08:42	Possible Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE MILL PLAIN BLVD							No	E938013	07/07/2019	15:12	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE MILL PLAIN BLVD							No	E951144	08/16/2019	23:05	Possible Injury	1	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE		SE MILL PLAIN BLVD							No	EA76264	10/26/2020	13:35	Possible Injury	1	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	0	SE MILL PLAIN BLVD							No	E641871	02/09/2017	17:06	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related
City Street	Clark	Vancouver	SE 192ND AVE	1400		93	F	N	SE 15TH ST			No	E988844	12/02/2019	13:40	Possible Injury	1	0	3	0	0	Passenger Car	Passenger Car	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	1600		318	F	S	SE 15TH ST			No	E785221	04/03/2018	16:10	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	1900		114	F	N	SE 20TH ST			No	E653540	03/20/2017	12:40	No Apparent Injury	0	0	3	0	0	Truck (Flatbad,Van,etc)	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	1900		44	F	N	SE 20TH ST			No	E917443	05/03/2019	13:44	No Apparent Injury	0	0	2	0	0	Passenger Car	Passenger Car	Not at Intersection and Not Related
City Street	Clark	Vancouver	SE 192ND AVE	1900		162	F	N	SE 20TH ST			No	E788428	04/12/2018	17:02	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	2000		54	F	SE	SE 20TH ST			No	E762873	01/26/2018	10:57	Possible Injury	2	0	2	0	0	Passenger Car	Passenger Car	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	1700		492	F	N	SE 20TH ST			No	E841909	09/19/2018	16:04	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	2000		117	F	S	SE 20TH ST			No	E786001	04/06/2018	08:59	No Apparent Injury	0	0	3	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	400		109	F	N	SE MILL PLAIN BLVD			No	E853517	10/25/2018	12:15	No Apparent Injury	0	0	1	0	0	Passenger Car		Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 192ND AVE	400		197	F	N	SE MILL PLAIN BLVD			No	E715983	09/25/2017	15:35	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection
City Street	Clark	Vancouver	SE 20TH ST	0	SE 192ND AVE							No	E707718	08/30/2017	17:38	Suspected Minor Injury	1	0	1	0	1	Passenger Car		At Intersection and Related
City Street	Clark	Vancouver	SE 20TH ST	2000	SE 192ND AVE							No	EA91782	12/20/2020	19:29	Possible Injury	2	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related
City Street	Clark	Vancouver	SE MILL PLAIN BLVD	19200		281	F	W	SE 192ND AVE			No	E809763	06/19/2018	10:28	No Apparent Injury	0	0	2	0	0	Truck Tractor	Passenger Car	At Driveway
City Street	Clark	Vancouver	SE MILL PLAIN BLVD	19100		284	F	W	SE 192ND AVE			No	E849322	10/10/2018	15:53	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Driveway
City Street	Clark	Vancouver	SE MILL PLAIN BLVD	19200		319	F	W	SE 192ND AVE			No	E894254	02/17/2019	15:47	Possible Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Driveway

WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)
Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Making Left Turn	Going Straight Ahead	South	West	West	East	Did Not Grant RW to Vehicle	
Raining	Wet	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Disregard Traffic Sign and Signals	
Clear or Partly Cloudy	Dry	Dark-Street Lights On	Utility Box	Making Right Turn		West	South			Under Influence of Alcohol	
Clear or Partly Cloudy	Dry	Dusk	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	West	East	Inattention	
Raining	Wet	Dark-Street Lights On	Tree or Stump (stationary)	Making Left Turn		North	East			Operating Defective Equipment	Other Contributing Circ Not Listed
Raining	Wet	Daylight	From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Other*	Vehicle Stopped	Vehicle Stopped	South	North	None	
Clear or Partly Cloudy	Dry	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Making Left Turn	North	South	East	Southwest	Disregard Stop and Go Light	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped	Under Influence of Alcohol	
Clear	Dry	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Exceeding Stated Speed Limit	
Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Other*	Going Straight Ahead	North	South	West	East	Under Influence of Alcohol	
Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Going Straight Ahead	Making Left Turn	North	South	East	South	Disregard Stop and Go Light	
Overcast	Dry	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Other Contributing Circ Not Listed	
Clear	Dry	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South	Other Contributing Circ Not Listed	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Unknown Distraction	Follow Too Closely
Clear or Partly Cloudy	Dry	Daylight	Street Light Pole or Base	Going Straight Ahead		South	North			Under Influence of Alcohol	
Raining	Wet	Daylight	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	North	South	North	South	Did Not Grant RW to Vehicle	
Overcast	Wet	Dark-Street Lights On	From same direction - both going straight - both moving - rear-end	Changing Lanes	Slowing	North	South	North	South	Under Influence of Alcohol	Follow Too Closely
Raining	Wet	Dark-Street Lights On	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead			South	North	Other Contributing Circ Not Listed	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped for Traffic	South	North	South	Vehicle Stopped	Follow Too Closely	
Clear or Partly Cloudy	Dry	Dark-Street Lights On	Street Light Pole or Base	Going Straight Ahead		Northwest	North			Under Influence of Alcohol	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - both moving - rear-end	Changing Lanes	Slowing	South	North	South	North	Follow Too Closely	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - sideswipe	Other*	Stopped for Traffic			Vehicle Stopped	Vehicle Stopped	Other Contributing Circ Not Listed	
Overcast	Wet	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Follow Too Closely	
Overcast	Dry	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	East	West	Disregard Stop and Go Light	
Clear or Partly Cloudy	Dry	Dark-Street Lights On	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped	Other Contributing Circ Not Listed	
Raining	Wet	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Lost in Thought / Day Dreaming	
Clear or Partly Cloudy	Ice	Daylight	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	North	South	East	West	Inattention	
Overcast	Dry	Daylight	From same direction - both going straight - both moving - rear-end	Slowing	Slowing	South	North	South	North	Operating Defective Equipment	
Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	West	East	Disregard Traffic Sign and Signals	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	South	East	Follow Too Closely	
Clear	Dry	Daylight	Signal Pole	Going Straight Ahead		North	South			Under Influence of Alcohol	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped	Distracted by Adjusting Vehicle Cntrls	
Overcast	Dry	Daylight	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	North	South	South	West	Disregard Stop and Go Light	Inattention
Clear or Partly Cloudy	Dry	Dark-Street Lights On	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	North	Vehicle Stopped	Follow Too Closely	
Clear or Partly Cloudy	Dry	Daylight	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	North	South	South	West	Disregard Traffic Sign and Signals	
Raining	Wet	Dusk	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped at Signal or Stop Sign	South	North	South	Vehicle Stopped	Under Influence of Alcohol	
Overcast	Wet	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	North	South	Eating or Drinking	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	Vehicle Stopped	Vehicle Stopped	Inattention	
Overcast	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	Vehicle Stopped	Vehicle Stopped	Inattention	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing	North	South	North	South	Inattention	
Overcast	Wet	Daylight	From opposite direction - all others	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	None	
Overcast	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Stopped for Traffic	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	South	North	None	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Stopped for Traffic	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	North	South	None	
Raining	Wet	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Disregard Stop and Go Light	Inattention
Raining	Wet	Daylight	Tree or Stump (stationary)	Making Left Turn		West	North			Inattention	
Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	North	South	None	
Clear or Partly Cloudy	Dry	Daylight	Vehicle - Pedalcyclist	Making Right Turn		West	South			Other Contributing Circ Not Listed	
Raining	Wet	Dark-Street Lights Off	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	West	East	East	South	Other Contributing Circ Not Listed	
Clear or Partly Cloudy	Dry	Daylight	Same direction -- both turning right -- both moving -- sideswipe	Making Right Turn	Making Right Turn	East	North	East	North	Inattention	
Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Making Right Turn	Stopped at Signal or Stop Sign	West	South	Vehicle Stopped	Vehicle Stopped	Under Influence of Alcohol	Improper Turn/Merge
Overcast	Dry	Daylight	Entering at angle	Making Right Turn	Going Straight Ahead	North	West	East	West	Improper Turn/Merge	Inattention

MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
	None									Lane of Primary Trafficway	#########	107262.09
	None									Lane of Primary Trafficway	#########	107246
										Past the Outside Shoulder of Primary Trafficway	#########	107246.01
	None									Lane of Primary Trafficway	#########	107244.68
Exceeding Reas. Safe Speed										Past the Outside Shoulder of Primary Trafficway	#########	107447.65
	Other Contributing Circ Not Listed									Lane of Primary Trafficway	#########	107463.95
	None									Lane of Primary Trafficway	#########	107463.95
	None									Lane of Primary Trafficway	#########	107463.94
	None									Lane of Primary Trafficway	#########	107463.94
	None									Lane of Primary Trafficway	#########	107463.95
	None									Lane of Primary Trafficway	#########	107463.95
	None									Lane of Primary Trafficway	#########	107463.94
	None									Lane of Primary Trafficway	#########	107463.94
	None									Lane of Primary Trafficway	#########	107664.61
										Past the Outside Shoulder of Primary Trafficway	#########	107206.13
	None									Lane of Primary Trafficway	#########	107610.87
	None									Lane of Primary Trafficway	#########	107763.98
	None									Lane of Primary Trafficway	#########	107419.67
	Follow Too Closely									Lane of Primary Trafficway	#########	107357.55
										Past the Outside Shoulder of Primary Trafficway	#########	108783.65
	None									Lane of Primary Trafficway	#########	107664.04
	None									Lane of Primary Trafficway	#########	107301
	None									Lane of Primary Trafficway	#########	107546.94
	None									Lane of Primary Trafficway	#########	107244.69
	None									Lane of Primary Trafficway	#########	107246.01
	None									Lane of Primary Trafficway	#########	107246
	None									Lane of Primary Trafficway	#########	107244.69
	None									Lane of Primary Trafficway	#########	106040.18
	None									Lane of Primary Trafficway	#########	106043.19
	None									Lane of Primary Trafficway	1134715.4	106044.3
										Past the Outside Shoulder of Primary Trafficway	1134715.4	106044.3
	None									Lane of Primary Trafficway	#########	109835.36
	None									Lane of Primary Trafficway	#########	109748.15
	None									Lane of Primary Trafficway	#########	109777.29
	None									Lane of Primary Trafficway	#########	109748.14
	None									Lane of Primary Trafficway	#########	109748.15
	Follow Too Closely									Lane of Primary Trafficway	#########	107338.59
	None									Lane of Primary Trafficway	#########	106925.8
	None									Lane of Primary Trafficway	#########	106158.53
	Inattention									Lane of Primary Trafficway	#########	106087.97
	None									Lane of Primary Trafficway	#########	106201.88
	Exceeding Reas. Safe Speed									Lane of Primary Trafficway	#########	106001.97
	Follow Too Closely									Lane of Primary Trafficway	#########	106536.85
	None									Lane of Primary Trafficway	#########	105927.02
										Median of Primary Trafficway	1134783.6	109885.6
	Other Contributing Circ Not Listed									Lane of Primary Trafficway	1134784.2	109973.53
							None			Lane of Primary Trafficway	1134715.4	106044.31
	None									Lane of Primary Trafficway	#########	106043.61
	Inattention									Intersecting Trafficway	1134498.6	109786.52
	None									Intersecting Trafficway	#########	109749.48
Did Not Grant RW to Vehicle	None									Lane of Primary Trafficway	1134462.6	109787.42

Appendix C 2023 Existing Operations Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	72	40	51	63	61	964	69	67	956	17
v/c Ratio	0.01	0.09	0.06	0.05	0.07	0.43	0.76	0.14	0.47	0.75	0.04
Control Delay	16.1	11.7	15.7	18.6	1.7	61.4	45.0	2.9	62.1	44.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	11.7	15.7	18.6	1.7	61.4	45.0	2.9	62.1	44.4	0.1
Queue Length 50th (ft)	3	12	14	18	0	46	253	0	50	249	0
Queue Length 95th (ft)	14	48	38	54	11	89	281	16	95	276	0
Internal Link Dist (ft)		600		638			842			586	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	799	817	728	1026	881	166	1995	706	165	1976	669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.09	0.05	0.05	0.07	0.37	0.48	0.10	0.41	0.48	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	41	38	48	59	57	906	65	63	899	16
Future Volume (vph)	9	26	41	38	48	59	57	906	65	63	899	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1802	1655		1752	1900	1546	1805	4988	1615	1752	4940	1524
Flt Permitted	0.72	1.00		0.66	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1373	1655		1212	1900	1546	1805	4988	1615	1752	4940	1524
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	10	28	44	40	51	63	61	964	69	67	956	17
RTOR Reduction (vph)	0	24	0	0	0	31	0	0	51	0	0	13
Lane Group Flow (vph)	10	48	0	40	51	32	61	964	18	67	956	4
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	0%	0%	7%	3%	0%	3%	0%	4%	0%	3%	5%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	57.2	55.9		66.2	60.4	60.4	8.2	30.6	30.6	8.7	31.1	31.1
Effective Green, g (s)	57.2	55.9		66.2	60.4	60.4	8.2	30.6	30.6	8.7	31.1	31.1
Actuated g/C Ratio	0.48	0.47		0.55	0.50	0.50	0.07	0.26	0.26	0.07	0.26	0.26
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	659	770		694	956	778	123	1271	411	127	1280	394
v/s Ratio Prot	0.00	c0.03		c0.00	0.03		0.03	0.19		c0.04	c0.19	
v/s Ratio Perm	0.01			0.03		0.02			0.01			0.00
v/c Ratio	0.02	0.06		0.06	0.05	0.04	0.50	0.76	0.04	0.53	0.75	0.01
Uniform Delay, d1	16.5	17.6		12.4	15.2	15.1	53.9	41.3	33.7	53.7	40.8	33.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2		0.0	0.0	0.0	3.1	2.4	0.0	3.9	2.1	0.0
Delay (s)	16.5	17.8		12.5	15.2	15.1	57.0	43.6	33.7	57.6	43.0	33.0
Level of Service	B	B		B	B	B	E	D	C	E	D	C
Approach Delay (s)		17.6			14.5			43.8			43.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	9	8	139	15	19
Future Vol, veh/h	155	9	8	139	15	19
Conflicting Peds, #/hr	0	3	3	0	3	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	77	77	77	77	77	77
Heavy Vehicles, %	6	11	12	3	0	0
Mvmt Flow	201	12	10	181	19	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	414	210
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	204	-
Critical Hdwy	-	-	4.22	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.308	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1297	-	599	835
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	590	833
Mov Cap-2 Maneuver	-	-	-	-	590	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	825	-

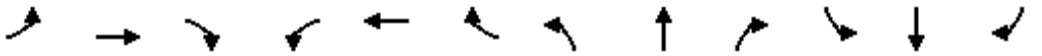
Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	705	-	-	1293	-
HCM Lane V/C Ratio	0.063	-	-	0.008	-
HCM Control Delay (s)	10.4	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	74	25	55	50	23	704	25	621
v/c Ratio	0.68	0.20	0.25	0.31	0.15	0.19	0.36	0.26	0.31
Control Delay	60.6	18.9	51.3	43.2	1.0	39.0	13.2	51.7	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	18.9	51.3	43.2	1.0	39.0	13.2	51.7	14.7
Queue Length 50th (ft)	79	20	16	35	0	15	90	16	72
Queue Length 95th (ft)	133	48	42	59	0	m23	159	42	237
Internal Link Dist (ft)		318		1016			1126		227
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	222	497	252	493	383	181	1957	156	1987
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.15	0.10	0.11	0.13	0.13	0.36	0.16	0.31

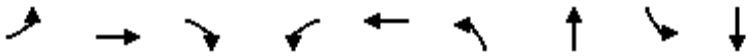
Intersection Summary

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 (vph)	117	36	32	23	51	46	21	624	24	23	505	66
Future Volume (vph)	117	36	32	23	51	46	21	624	24	23	505	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1765		1805	1827	1539	1805	3390		1736	3260	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1765		1805	1827	1539	1805	3390		1736	3260	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	39	35	25	55	50	23	678	26	25	549	72
RTOR Reduction (vph)	0	28	0	0	0	43	0	2	0	0	7	0
Lane Group Flow (vph)	127	46	0	25	55	7	23	702	0	25	614	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	5%	0%	0%	0%	4%	4%	0%	6%	0%	4%	9%	5%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	12.8	19.2		2.5	8.9	13.5	3.9	53.7		4.6	54.4	
Effective Green, g (s)	12.8	19.2		2.5	8.9	13.5	3.9	53.7		4.6	54.4	
Actuated g/C Ratio	0.13	0.19		0.02	0.09	0.14	0.04	0.54		0.05	0.54	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	220	338		45	162	207	70	1820		79	1773	
v/s Ratio Prot	c0.07	0.03		0.01	c0.03	0.00	0.01	c0.21		0.01	c0.19	
v/s Ratio Perm						0.00						
v/c Ratio	0.58	0.14		0.56	0.34	0.03	0.33	0.39		0.32	0.35	
Uniform Delay, d1	41.1	33.5		48.2	42.8	37.6	46.8	13.5		46.2	12.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.84	0.84		1.00	1.00	
Incremental Delay, d2	2.3	0.1		8.2	0.5	0.0	0.9	0.6		0.8	0.0	
Delay (s)	43.3	33.6		56.4	43.2	37.6	40.4	11.9		47.0	12.9	
Level of Service	D	C		E	D	D	D	B		D	B	
Approach Delay (s)		39.7			43.6			12.8			14.2	
Approach LOS		D			D			B			B	

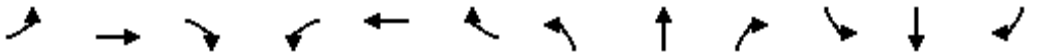
Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	111	149	147	221	404	689	95	606
v/c Ratio	0.69	0.41	0.26	0.75	0.73	0.77	0.46	0.70	0.50
Control Delay	61.7	40.2	3.0	66.0	45.1	52.1	20.4	70.3	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	40.2	3.0	66.0	45.1	52.1	20.4	70.3	25.0
Queue Length 50th (ft)	79	66	0	90	111	126	139	60	138
Queue Length 95th (ft)	110	80	11	127	127	#157	187	90	170
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	226	488	567	218	482	524	1502	167	1225
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.23	0.26	0.67	0.46	0.77	0.46	0.57	0.49

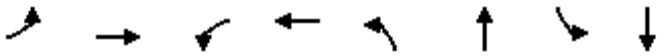
Intersection Summary

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 (vph)	95	82	110	109	90	73	299	344	166	70	311	138
Future Volume (vph)	95	82	110	109	90	73	299	344	166	70	311	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	1743	1508	1641	1617		3433	3152		1656	3168	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1703	1743	1508	1641	1617		3433	3152		1656	3168	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	128	111	149	147	122	99	404	465	224	95	420	186
RTOR Reduction (vph)	0	0	101	0	34	0	0	45	0	0	44	0
Lane Group Flow (vph)	128	111	48	147	187	0	404	644	0	95	562	0
Confl. Peds. (#/hr)	1		8	8		1	3		3	3		3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	6%	9%	6%	10%	4%	15%	2%	7%	10%	9%	10%	4%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	10.9	15.6	31.9	11.9	16.6		16.3	45.3		7.2	36.2	
Effective Green, g (s)	10.9	15.6	31.9	11.9	16.6		16.3	45.3		7.2	36.2	
Actuated g/C Ratio	0.11	0.16	0.32	0.12	0.17		0.16	0.45		0.07	0.36	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	185	271	481	195	268		559	1427		119	1146	
v/s Ratio Prot	c0.08	c0.06	0.02	0.09	c0.12		c0.12	0.20		c0.06	c0.18	
v/s Ratio Perm			0.02									
v/c Ratio	0.69	0.41	0.10	0.75	0.70		0.72	0.45		0.80	0.49	
Uniform Delay, d1	42.9	38.0	23.9	42.6	39.3		39.7	18.8		45.7	24.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.7	0.4	0.0	13.6	6.2		3.9	1.0		28.3	0.1	
Delay (s)	51.6	38.4	24.0	56.2	45.6		43.6	19.8		74.0	24.9	
Level of Service	D	D	C	E	D		D	B		E	C	
Approach Delay (s)		37.2			49.8			28.6			31.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	186	49	203	39	779	80	690
v/c Ratio	0.48	0.54	0.25	0.72	0.33	0.47	0.52	0.40
Control Delay	49.2	37.5	47.5	45.5	51.1	19.9	65.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	37.5	47.5	45.5	51.1	19.9	65.0	11.5
Queue Length 50th (ft)	42	96	15	97	24	166	54	86
Queue Length 95th (ft)	61	127	29	132	49	241	90	110
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	396	456	356	445	175	1667	183	1742
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	0.34	0.41	0.14	0.46	0.22	0.47	0.44	0.40

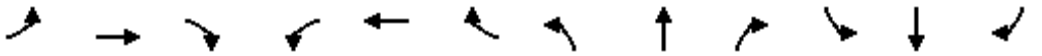
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	97	50	39	81	79	31	564	51	63	471	74
Future Volume (vph)	105	97	50	39	81	79	31	564	51	63	471	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3303	1748		3242	1710		1752	3294		1719	3166	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3303	1748		3242	1710		1752	3294		1719	3166	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	133	123	63	49	103	100	39	714	65	80	596	94
RTOR Reduction (vph)	0	20	0	0	39	0	0	5	0	0	9	0
Lane Group Flow (vph)	133	166	0	49	164	0	39	774	0	80	681	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Confl. Bikes (#/hr)			2			2			2			1
Heavy Vehicles (%)	6%	3%	2%	8%	1%	3%	3%	8%	8%	5%	12%	7%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	8.4	18.4		5.1	15.1		4.7	48.5		8.0	51.8	
Effective Green, g (s)	8.4	18.4		5.1	15.1		4.7	48.5		8.0	51.8	
Actuated g/C Ratio	0.08	0.18		0.05	0.15		0.05	0.48		0.08	0.52	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	277	321		165	258		82	1597		137	1639	
v/s Ratio Prot	c0.04	c0.09		0.02	c0.10		0.02	c0.23		c0.05	c0.22	
v/s Ratio Perm												
v/c Ratio	0.48	0.52		0.30	0.64		0.48	0.48		0.58	0.42	
Uniform Delay, d1	43.7	36.8		45.7	39.9		46.4	17.3		44.4	14.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.25	0.69	
Incremental Delay, d2	0.5	0.6		0.4	3.7		1.6	1.1		4.0	0.1	
Delay (s)	44.2	37.4		46.1	43.6		48.0	18.4		59.5	10.3	
Level of Service	D	D		D	D		D	B		E	B	
Approach Delay (s)		40.2			44.1			19.8			15.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	121	115	116	95	125	1436	47	153	1361	38
v/c Ratio	0.09	0.26	0.24	0.21	0.18	0.61	0.79	0.08	0.63	0.69	0.06
Control Delay	28.3	36.7	28.8	37.9	8.4	62.4	37.4	0.2	60.1	32.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	36.7	28.8	37.9	8.4	62.4	37.4	0.2	60.1	32.7	0.2
Queue Length 50th (ft)	20	66	58	69	0	94	360	0	113	317	0
Queue Length 95th (ft)	51	135	116	137	42	148	364	0	172	324	0
Internal Link Dist (ft)		642		766			1016			601	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	499	548	480	614	567	220	1973	667	247	2060	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.22	0.24	0.19	0.17	0.57	0.73	0.07	0.62	0.66	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	77	29	101	102	84	110	1264	41	135	1198	33
Future Volume (vph)	37	77	29	101	102	84	110	1264	41	135	1198	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1787		1803	1881	1530	1805	5036	1549	1787	5136	1580
Flt Permitted	0.68	1.00		0.58	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1296	1787		1093	1881	1530	1805	5036	1549	1787	5136	1580
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	42	88	33	115	116	95	125	1436	47	153	1361	38
RTOR Reduction (vph)	0	11	0	0	0	67	0	0	30	0	0	23
Lane Group Flow (vph)	42	110	0	115	116	28	125	1436	17	153	1361	15
Confl. Peds. (#/hr)			2	2			1		1	1		1
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	1%	3%	0%	1%	4%	0%	3%	2%	1%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	37.3	31.0		45.1	34.9	34.9	13.7	43.4	43.4	16.4	46.1	46.1
Effective Green, g (s)	37.3	31.0		45.1	34.9	34.9	13.7	43.4	43.4	16.4	46.1	46.1
Actuated g/C Ratio	0.31	0.26		0.38	0.29	0.29	0.11	0.36	0.36	0.14	0.38	0.38
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	429	461		471	547	444	206	1821	560	244	1973	606
v/s Ratio Prot	0.01	0.06		c0.02	0.06		0.07	c0.29		c0.09	c0.27	
v/s Ratio Perm	0.03			c0.07		0.02			0.01			0.01
v/c Ratio	0.10	0.24		0.24	0.21	0.06	0.61	0.79	0.03	0.63	0.69	0.02
Uniform Delay, d1	29.2	35.2		25.1	32.2	30.7	50.6	34.2	24.7	48.9	31.0	23.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.2		0.3	0.9	0.3	5.0	2.2	0.0	5.0	0.8	0.0
Delay (s)	29.3	36.4		25.4	33.0	31.0	55.6	36.4	24.7	53.9	31.8	23.0
Level of Service	C	D		C	C	C	E	D	C	D	C	C
Approach Delay (s)		34.6			29.7			37.5			33.7	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	230	13	21	211	11	12
Future Vol, veh/h	230	13	21	211	11	12
Conflicting Peds, #/hr	0	4	4	0	6	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	86	86	86	86	86	86
Heavy Vehicles, %	1	8	5	1	0	8
Mvmt Flow	267	15	24	245	13	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	578	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.15	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.372
Pot Cap-1 Maneuver	-	-	1259	-	481	746
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	757	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1254	-	466	743
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	579	-	-	1254	-
HCM Lane V/C Ratio	0.046	-	-	0.019	-
HCM Control Delay (s)	11.5	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

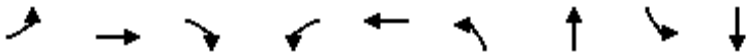
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	156	45	81	136	54	1071	57	1094
v/c Ratio	0.65	0.51	0.39	0.40	0.36	0.38	0.55	0.46	0.55
Control Delay	64.5	32.7	54.5	44.8	7.5	55.5	24.5	56.4	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	32.7	54.5	44.8	7.5	55.5	24.5	56.4	18.7
Queue Length 50th (ft)	63	68	28	51	3	27	277	36	233
Queue Length 95th (ft)	#159	115	63	79	37	m38	293	75	405
Internal Link Dist (ft)		206		1016			1126		238
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	160	471	162	507	437	160	1953	194	1973
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.33	0.28	0.16	0.31	0.34	0.55	0.29	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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 (vph)	93	74	68	41	74	124	49	948	26	52	885	110
Future Volume (vph)	93	74	68	41	74	124	49	948	26	52	885	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1754		1805	1881	1602	1736	3520		1770	3505	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1754		1805	1881	1602	1736	3520		1770	3505	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	102	81	75	45	81	136	54	1042	29	57	973	121
RTOR Reduction (vph)	0	37	0	0	0	108	0	1	0	0	7	0
Lane Group Flow (vph)	102	119	0	45	81	28	54	1070	0	57	1087	0
Confl. Peds. (#/hr)							3		4	4		3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	4%	2%	4%	2%	1%	1%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	8.8	15.2		4.4	10.8	17.8	7.3	53.4		7.0	53.1	
Effective Green, g (s)	8.8	15.2		4.4	10.8	17.8	7.3	53.4		7.0	53.1	
Actuated g/C Ratio	0.09	0.15		0.04	0.11	0.18	0.07	0.53		0.07	0.53	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	157	266		79	203	365	126	1879		123	1861	
v/s Ratio Prot	c0.06	c0.07		0.02	0.04	0.01	0.03	c0.30		0.03	c0.31	
v/s Ratio Perm						0.01						
v/c Ratio	0.65	0.45		0.57	0.40	0.08	0.43	0.57		0.46	0.58	
Uniform Delay, d1	44.1	38.6		46.9	41.6	34.3	44.4	15.6		44.7	15.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.16	1.38		1.00	1.00	
Incremental Delay, d2	6.8	0.4		5.5	0.5	0.0	0.6	0.9		1.0	0.3	
Delay (s)	50.9	39.0		52.4	42.0	34.3	52.2	22.4		45.7	16.2	
Level of Service	D	D		D	D	C	D	C		D	B	
Approach Delay (s)		43.7			39.8			23.8			17.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

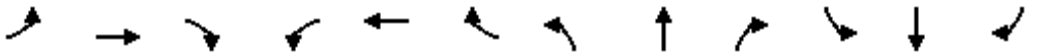


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	300	13	478	49	59	384	848	18	942
v/c Ratio	0.58	0.05	0.94	0.13	0.29	0.88	0.54	0.19	0.88
Control Delay	40.7	31.3	45.1	36.4	21.7	65.4	22.8	50.3	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	31.3	45.1	36.4	21.7	65.4	22.8	50.3	42.3
Queue Length 50th (ft)	165	8	~281	19	14	125	174	11	275
Queue Length 95th (ft)	#440	21	157	65	41	#210	293	33	#389
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	513	513	513	400	477	441	1557	180	1125
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.03	0.93	0.12	0.12	0.87	0.54	0.10	0.84

Intersection Summary

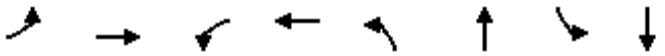
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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 (vph)	267	12	425	44	20	33	342	744	11	16	661	177
Future Volume (vph)	267	12	425	44	20	33	342	744	11	16	661	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1900	1583	1805	1665		3467	3530		1805	3417	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1900	1583	1805	1665		3467	3530		1805	3417	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	300	13	478	49	22	37	384	836	12	18	743	199
RTOR Reduction (vph)	0	0	126	0	34	0	0	1	0	0	26	0
Lane Group Flow (vph)	300	13	352	49	25	0	384	847	0	18	916	0
Confl. Peds. (#/hr)	8		6	6		8	9		9	9		9
Confl. Bikes (#/hr)						1			3			1
Heavy Vehicles (%)	1%	0%	1%	0%	0%	3%	1%	2%	0%	0%	2%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	28.8	18.0	33.7	19.8	9.0		15.7	40.0		2.2	26.5	
Effective Green, g (s)	28.8	18.0	33.7	19.8	9.0		15.7	40.0		2.2	26.5	
Actuated g/C Ratio	0.29	0.18	0.34	0.20	0.09		0.16	0.40		0.02	0.26	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	514	342	533	357	149		544	1412		39	905	
v/s Ratio Prot	c0.17	0.01	0.10	c0.03	0.02		c0.11	0.24		0.01	c0.27	
v/s Ratio Perm			0.12									
v/c Ratio	0.58	0.04	0.66	0.14	0.17		0.71	0.60		0.46	1.01	
Uniform Delay, d1	30.5	33.9	28.3	33.1	42.0		40.0	23.7		48.3	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.0	2.4	0.1	0.2		3.4	1.9		3.1	33.0	
Delay (s)	31.6	33.9	30.7	33.1	42.2		43.4	25.6		51.4	69.8	
Level of Service	C	C	C	C	D		D	C		D	E	
Approach Delay (s)		31.0			38.1			31.1			69.4	
Approach LOS		C			D			C			E	

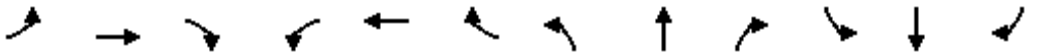
Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	239	113	354	101	996	143	1006
v/c Ratio	0.45	0.76	0.24	0.85	0.62	0.75	0.70	0.68
Control Delay	48.8	50.6	39.5	50.6	59.8	33.0	64.7	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	50.6	39.5	50.6	59.8	33.0	64.7	19.8
Queue Length 50th (ft)	40	132	32	187	62	291	67	290
Queue Length 95th (ft)	68	200	59	284	117	#458	#158	#277
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	450	462	486	465	186	1330	237	1489
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	0.28	0.52	0.23	0.76	0.54	0.75	0.60	0.68

Intersection Summary

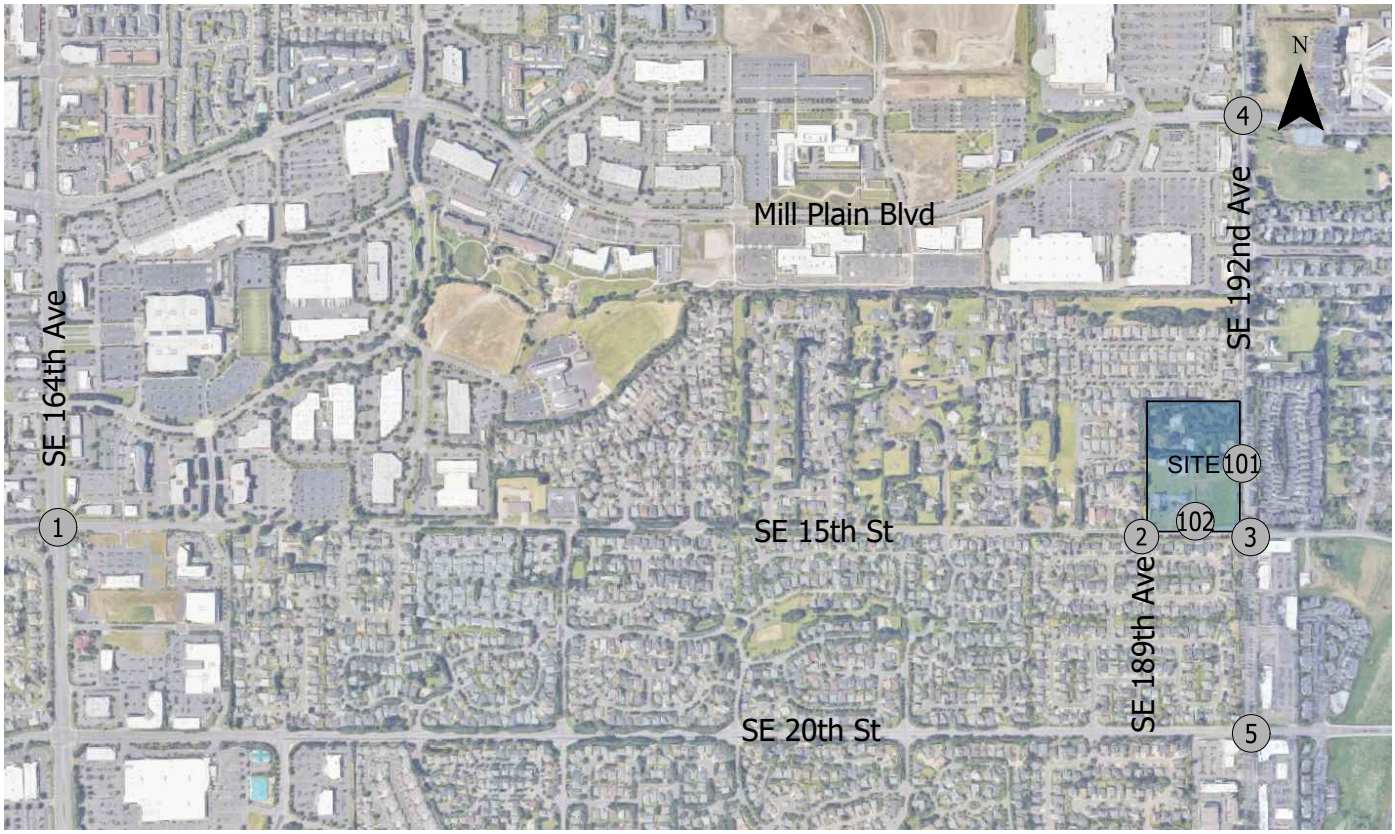
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

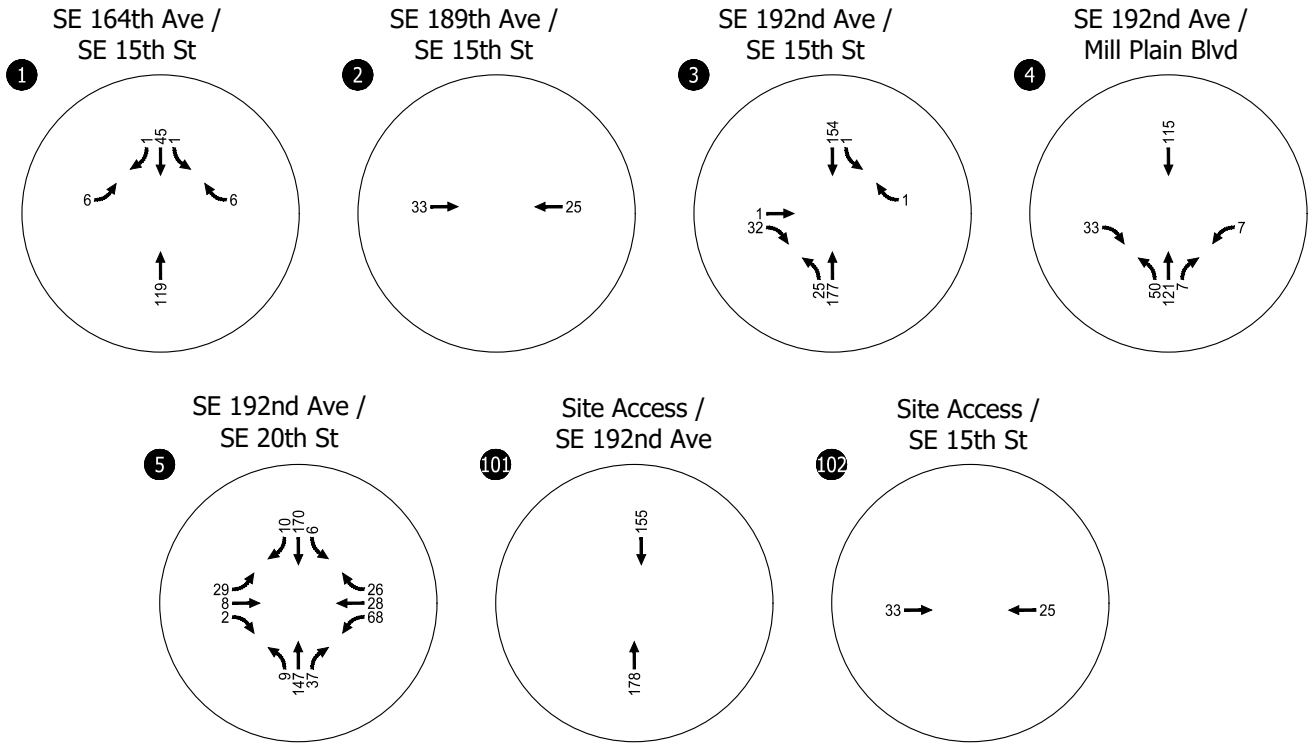


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	152	78	108	168	172	97	861	95	137	828	137
Future Volume (vph)	121	152	78	108	168	172	97	861	95	137	828	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.92		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1776		3502	1721		1805	3447		1787	3442	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	1776		3502	1721		1805	3447		1787	3442	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	126	158	81	112	175	179	101	897	99	143	862	143
RTOR Reduction (vph)	0	21	0	0	37	0	0	7	0	0	12	0
Lane Group Flow (vph)	126	218	0	113	317	0	101	989	0	143	994	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Confl. Bikes (#/hr)			1			4			5			2
Heavy Vehicles (%)	1%	0%	3%	0%	1%	1%	0%	3%	1%	1%	2%	4%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	8.0	16.6		13.6	22.2		7.9	38.3		11.5	41.9	
Effective Green, g (s)	8.0	16.6		13.6	22.2		7.9	38.3		11.5	41.9	
Actuated g/C Ratio	0.08	0.17		0.14	0.22		0.08	0.38		0.12	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	277	294		476	382		142	1320		205	1442	
v/s Ratio Prot	0.04	c0.12		0.03	c0.18		0.06	c0.29		c0.08	c0.29	
v/s Ratio Perm												
v/c Ratio	0.45	0.74		0.24	0.83		0.71	0.75		0.70	0.69	
Uniform Delay, d1	43.9	39.7		38.6	37.1		44.9	26.7		42.6	23.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.15	0.67	
Incremental Delay, d2	0.4	8.5		0.1	13.2		13.1	3.9		7.2	1.0	
Delay (s)	44.4	48.2		38.7	50.3		58.0	30.6		56.0	16.9	
Level of Service	D	D		D	D		E	C		E	B	
Approach Delay (s)		46.9			47.5			33.1			21.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

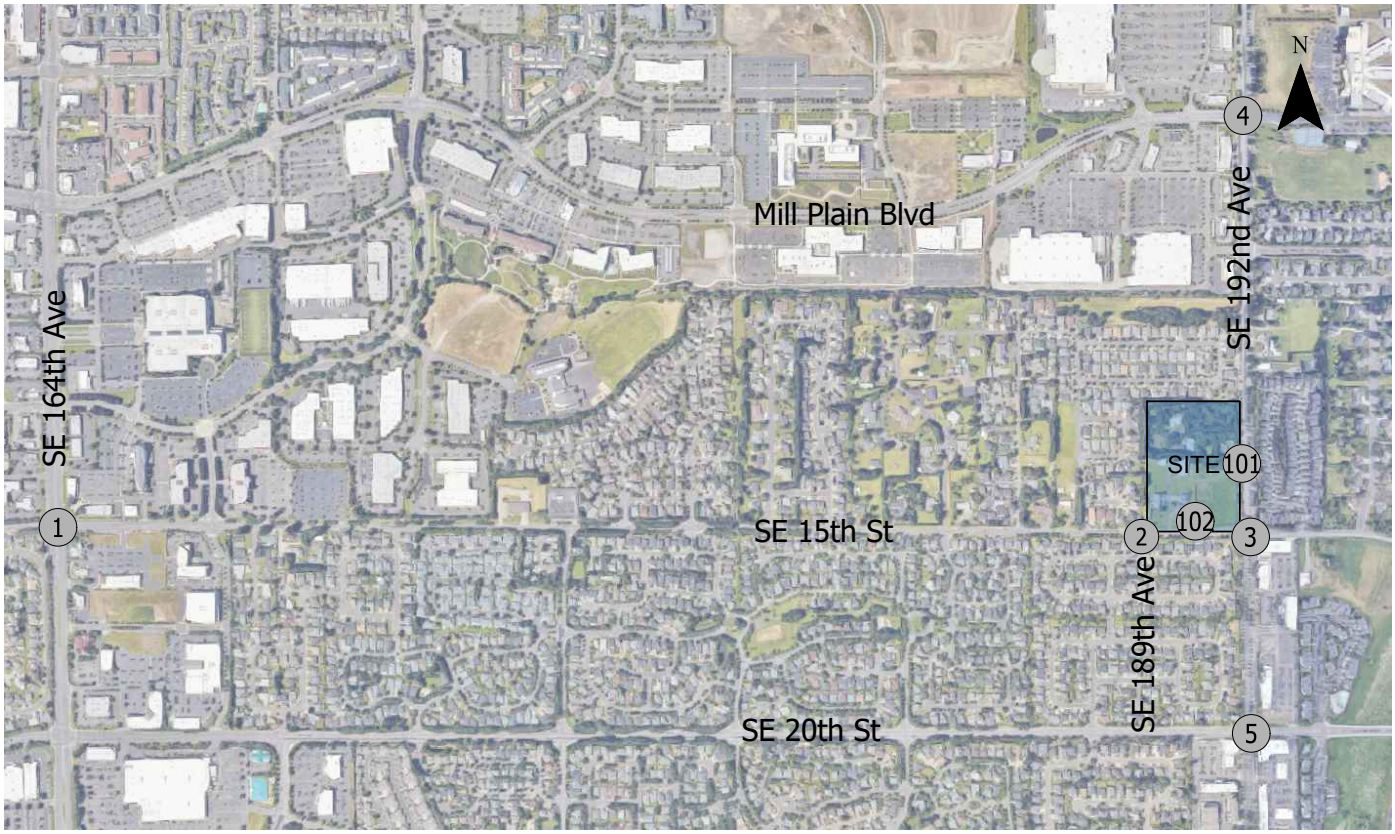
Appendix D In Process Trips

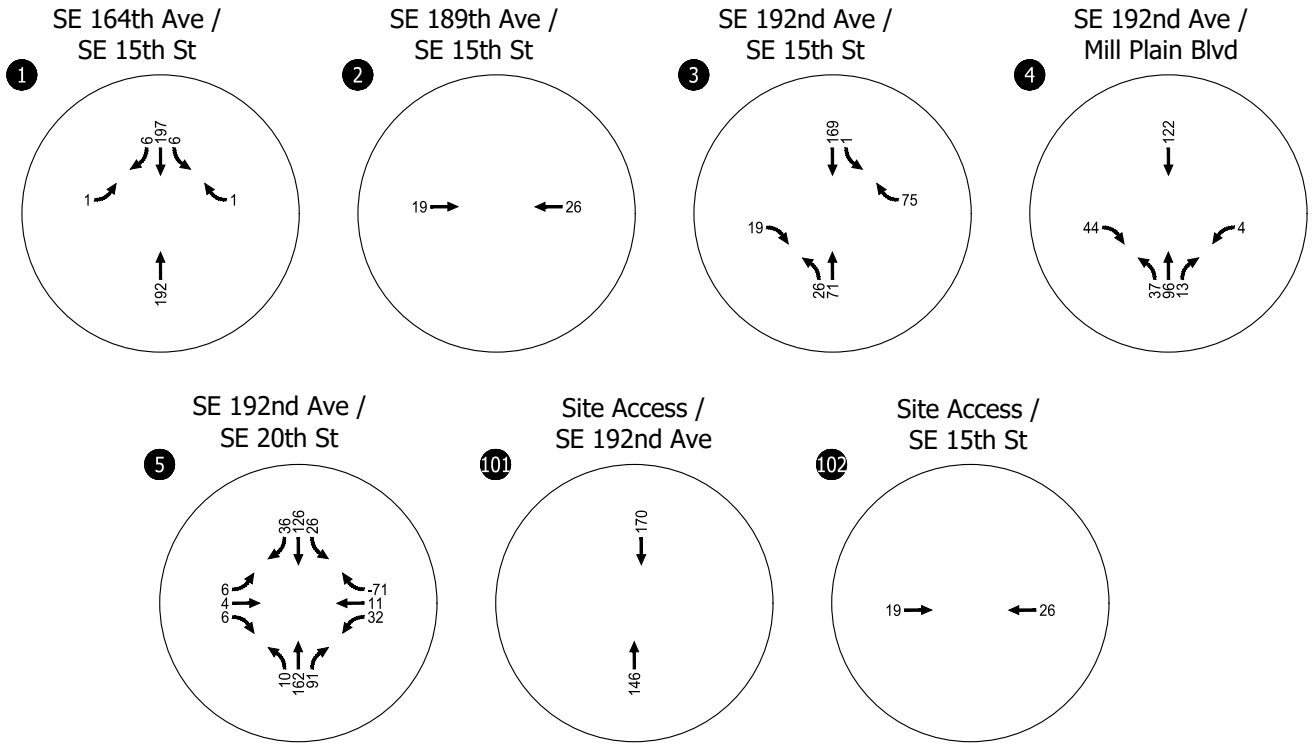




In-Process Trips
Weekday AM Peak Hour
Vancouver, WA

Figure
D-1





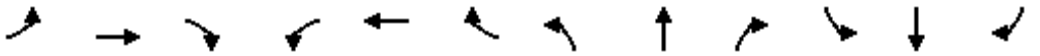
In-Process Trips
Weekday PM Peak Hour
Vancouver, WA

Figure
D-2

Appendix E 2027 Background Operations (Existing Zoning) Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	77	51	54	79	64	1150	76	74	1063	19
v/c Ratio	0.03	0.10	0.08	0.06	0.10	0.44	0.77	0.14	0.49	0.70	0.03
Control Delay	19.1	13.8	18.9	24.0	3.7	61.6	41.9	3.1	62.3	39.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	13.8	18.9	24.0	3.7	61.6	41.9	3.1	62.3	39.1	0.1
Queue Length 50th (ft)	6	14	20	21	0	48	297	0	56	265	0
Queue Length 95th (ft)	23	55	50	62	24	92	320	20	103	286	0
Internal Link Dist (ft)		600		638			842			586	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	729	756	674	903	787	167	2014	706	169	2014	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.10	0.08	0.06	0.10	0.38	0.57	0.11	0.44	0.53	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	28	44	48	51	74	60	1081	71	70	999	18
Future Volume (vph)	16	28	44	48	51	74	60	1081	71	70	999	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1802	1695		1752	1900	1546	1805	5036	1615	1752	5036	1568
Flt Permitted	0.72	1.00		0.66	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1369	1695		1219	1900	1546	1805	5036	1615	1752	5036	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	17	30	47	51	54	79	64	1150	76	74	1063	19
RTOR Reduction (vph)	0	27	0	0	0	44	0	0	53	0	0	13
Lane Group Flow (vph)	17	50	0	51	54	35	64	1150	23	74	1063	6
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	0%	0%	3%	3%	0%	3%	0%	3%	0%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	52.7	49.9		59.7	53.4	53.4	8.4	35.7	35.7	9.1	36.4	36.4
Effective Green, g (s)	52.7	49.9		59.7	53.4	53.4	8.4	35.7	35.7	9.1	36.4	36.4
Actuated g/C Ratio	0.44	0.42		0.50	0.44	0.44	0.07	0.30	0.30	0.08	0.30	0.30
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	611	704		634	845	687	126	1498	480	132	1527	475
v/s Ratio Prot	0.00	0.03		c0.00	0.03		0.04	c0.23		c0.04	0.21	
v/s Ratio Perm	0.01			c0.04		0.02			0.01			0.00
v/c Ratio	0.03	0.07		0.08	0.06	0.05	0.51	0.77	0.05	0.56	0.70	0.01
Uniform Delay, d1	19.1	21.1		15.7	19.0	18.9	53.8	38.4	30.0	53.5	36.9	29.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2		0.1	0.0	0.0	3.2	2.2	0.0	5.4	1.1	0.0
Delay (s)	19.1	21.3		15.7	19.0	18.9	57.0	40.6	30.0	58.9	38.0	29.2
Level of Service	B	C		B	B	B	E	D	C	E	D	C
Approach Delay (s)		20.9			18.1			40.8			39.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	10	8	186	16	20
Future Vol, veh/h	202	10	8	186	16	20
Conflicting Peds, #/hr	0	3	3	0	3	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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	262	13	10	242	21	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	278	0	537	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	265	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1279	-	508	772
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	784	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1275	-	500	770
Mov Cap-2 Maneuver	-	-	-	-	500	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	775	-

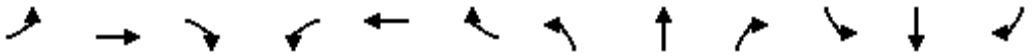
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	621	-	-	1275	-
HCM Lane V/C Ratio	0.075	-	-	0.008	-
HCM Control Delay (s)	11.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	150	118	26	59	54	53	939	27	830
v/c Ratio	0.72	0.31	0.26	0.40	0.17	0.39	0.46	0.28	0.43
Control Delay	60.5	16.0	51.4	50.0	1.2	44.1	14.4	52.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	16.0	51.4	50.0	1.2	44.1	14.4	52.0	16.5
Queue Length 50th (ft)	93	22	16	37	0	26	162	17	158
Queue Length 95th (ft)	151	66	43	71	0	m42	147	44	288
Internal Link Dist (ft)		318		1016			1126		227
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	350	464	100	175	320	151	2080	109	1995
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.25	0.26	0.34	0.17	0.35	0.45	0.25	0.42

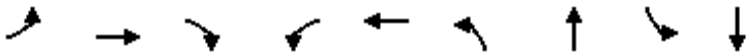
Intersection Summary

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 (vph)	138	40	69	24	54	50	49	839	25	25	693	71
Future Volume (vph)	138	40	69	24	54	50	49	839	25	25	693	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1719		1805	1845	1555	1805	3490		1752	3449	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1719		1805	1845	1555	1805	3490		1752	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	43	75	26	59	54	53	912	27	27	753	77
RTOR Reduction (vph)	0	61	0	0	0	48	0	2	0	0	7	0
Lane Group Flow (vph)	150	57	0	26	59	6	53	937	0	27	823	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	0%	0%	3%	3%	0%	3%	0%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	14.0	18.5		2.6	7.1	11.7	6.6	54.3		4.6	52.3	
Effective Green, g (s)	14.0	18.5		2.6	7.1	11.7	6.6	54.3		4.6	52.3	
Actuated g/C Ratio	0.14	0.18		0.03	0.07	0.12	0.07	0.54		0.05	0.52	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	245	318		46	130	181	119	1895		80	1803	
v/s Ratio Prot	c0.09	c0.03		0.01	c0.03	0.00	0.03	c0.27		0.02	c0.24	
v/s Ratio Perm						0.00						
v/c Ratio	0.61	0.18		0.57	0.45	0.03	0.45	0.49		0.34	0.46	
Uniform Delay, d1	40.4	34.3		48.1	44.6	39.1	44.9	14.3		46.2	14.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.87	0.92		1.00	1.00	
Incremental Delay, d2	3.2	0.1		9.1	0.9	0.0	0.7	0.7		0.9	0.1	
Delay (s)	43.6	34.4		57.3	45.5	39.2	39.9	13.8		47.1	15.0	
Level of Service	D	C		E	D	D	D	B		D	B	
Approach Delay (s)		39.6			45.2			15.2			16.0	
Approach LOS		D			D			B			B	

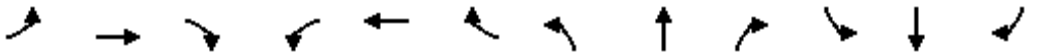
Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	136	118	205	166	234	504	915	100	802
v/c Ratio	0.70	0.40	0.34	0.79	0.73	0.85	0.59	0.70	0.67
Control Delay	61.7	39.3	6.4	69.6	44.9	57.4	24.3	69.1	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	39.3	6.4	69.6	44.9	57.4	24.3	69.1	30.5
Queue Length 50th (ft)	84	70	21	103	120	162	217	63	213
Queue Length 95th (ft)	116	84	29	139	135	#227	273	94	242
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	233	516	602	227	507	591	1561	176	1200
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.23	0.34	0.73	0.46	0.85	0.59	0.57	0.67

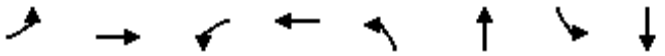
Intersection Summary

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 (vph)	101	87	152	123	96	77	373	494	183	74	448	146
Future Volume (vph)	101	87	152	123	96	77	373	494	183	74	448	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1552	1752	1711		3433	3338		1752	3362	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1552	1752	1711		3433	3338		1752	3362	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	136	118	205	166	130	104	504	668	247	100	605	197
RTOR Reduction (vph)	0	0	86	0	33	0	0	29	0	0	28	0
Lane Group Flow (vph)	136	118	119	166	201	0	504	886	0	100	774	0
Confl. Peds. (#/hr)	1		8	8		1	3		3	3		3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	11.1	16.0	34.2	11.9	16.8		18.2	44.9		7.2	33.9	
Effective Green, g (s)	11.1	16.0	34.2	11.9	16.8		18.2	44.9		7.2	33.9	
Actuated g/C Ratio	0.11	0.16	0.34	0.12	0.17		0.18	0.45		0.07	0.34	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	194	295	530	208	287		624	1498		126	1139	
v/s Ratio Prot	c0.08	c0.06	0.04	0.09	c0.12		c0.15	0.27		0.06	c0.23	
v/s Ratio Perm			0.04									
v/c Ratio	0.70	0.40	0.22	0.80	0.70		0.81	0.59		0.79	0.68	
Uniform Delay, d1	42.9	37.7	23.4	42.9	39.2		39.2	20.7		45.7	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	0.3	0.1	17.7	5.9		7.2	1.7		26.5	1.3	
Delay (s)	51.8	38.0	23.5	60.6	45.1		46.4	22.4		72.2	29.7	
Level of Service	D	D	C	E	D		D	C		E	C	
Approach Delay (s)		35.6			51.6			30.9			34.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	177	211	138	283	53	1062	94	967
v/c Ratio	0.55	0.60	0.48	0.82	0.41	0.67	0.60	0.60
Control Delay	49.5	38.8	49.0	50.9	52.9	26.8	73.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	38.8	49.0	50.9	52.9	26.8	73.9	17.7
Queue Length 50th (ft)	56	108	44	146	33	287	62	247
Queue Length 95th (ft)	76	145	63	187	61	346	98	206
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	408	455	374	445	175	1576	180	1621
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	0.43	0.46	0.37	0.64	0.30	0.67	0.52	0.60

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	111	55	109	114	110	42	748	91	74	675	89
Future Volume (vph)	140	111	55	109	114	110	42	748	91	74	675	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1750		3400	1711		1752	3438		1752	3433	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3400	1750		3400	1711		1752	3438		1752	3433	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	177	141	70	138	144	139	53	947	115	94	854	113
RTOR Reduction (vph)	0	19	0	0	38	0	0	8	0	0	9	0
Lane Group Flow (vph)	177	192	0	138	245	0	53	1054	0	94	958	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Confl. Bikes (#/hr)			2			2			2			1
Heavy Vehicles (%)	3%	3%	2%	3%	1%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	9.5	19.2		8.4	18.1		6.4	44.6		7.8	46.0	
Effective Green, g (s)	9.5	19.2		8.4	18.1		6.4	44.6		7.8	46.0	
Actuated g/C Ratio	0.10	0.19		0.08	0.18		0.06	0.45		0.08	0.46	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	323	336		285	309		112	1533		136	1579	
v/s Ratio Prot	c0.05	0.11		0.04	c0.14		0.03	c0.31		c0.05	0.28	
v/s Ratio Perm												
v/c Ratio	0.55	0.57		0.48	0.79		0.47	0.69		0.69	0.61	
Uniform Delay, d1	43.2	36.7		43.7	39.2		45.2	22.1		44.9	20.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.34	0.72	
Incremental Delay, d2	1.0	1.5		0.5	12.3		1.1	2.5		11.1	0.4	
Delay (s)	44.2	38.1		44.2	51.5		46.3	24.7		71.2	15.0	
Level of Service	D	D		D	D		D	C		E	B	
Approach Delay (s)		40.9			49.1			25.7			20.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	1027	786	4
Future Vol, veh/h	0	3	0	1027	786	4
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, %	0	0	0	3	3	0
Mvmt Flow	0	3	0	1116	854	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	429	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	580	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	580	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	580	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Control Delay (s)	-	11.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	229	171	3	18	13
Future Vol, veh/h	4	229	171	3	18	13
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, %	0	0	3	0	0	0
Mvmt Flow	4	249	186	3	20	14

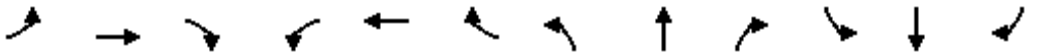
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	189	0	-	0	445	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	257	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1397	-	-	-	574	859
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1397	-	-	-	572	859
Mov Cap-2 Maneuver	-	-	-	-	572	-
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1397	-	-	-	665
HCM Lane V/C Ratio	0.003	-	-	-	0.051
HCM Control Delay (s)	7.6	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	128	127	123	107	133	1743	59	176	1669	47
v/c Ratio	0.13	0.38	0.35	0.30	0.25	0.62	0.83	0.08	0.62	0.72	0.06
Control Delay	33.4	44.1	36.0	45.6	10.2	61.9	35.4	1.1	56.8	28.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	44.1	36.0	45.6	10.2	61.9	35.4	1.1	56.8	28.5	0.1
Queue Length 50th (ft)	25	81	75	84	0	99	420	0	128	359	0
Queue Length 95th (ft)	55	140	128	146	48	156	479	6	193	421	0
Internal Link Dist (ft)		642		766			1016			601	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	400	497	365	549	527	226	2111	707	283	2331	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.26	0.35	0.22	0.20	0.59	0.83	0.08	0.62	0.72	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	82	31	112	108	94	117	1534	52	155	1469	41
Future Volume (vph)	40	82	31	112	108	94	117	1534	52	155	1469	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1787		1803	1881	1543	1805	5036	1549	1787	5136	1580
Flt Permitted	0.68	1.00		0.52	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1288	1787		985	1881	1543	1805	5036	1549	1787	5136	1580
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	45	93	35	127	123	107	133	1743	59	176	1669	47
RTOR Reduction (vph)	0	12	0	0	0	84	0	0	34	0	0	26
Lane Group Flow (vph)	45	116	0	127	123	23	133	1743	25	176	1669	21
Confl. Peds. (#/hr)			2	2			1		1	1		1
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	1%	3%	0%	1%	3%	0%	3%	2%	1%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	28.7	22.1		35.5	25.5	25.5	14.4	49.9	49.9	19.0	54.5	54.5
Effective Green, g (s)	28.7	22.1		35.5	25.5	25.5	14.4	49.9	49.9	19.0	54.5	54.5
Actuated g/C Ratio	0.24	0.18		0.30	0.21	0.21	0.12	0.42	0.42	0.16	0.45	0.45
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	336	329		359	399	327	216	2094	644	282	2332	717
v/s Ratio Prot	0.01	0.06		c0.03	0.07		0.07	c0.35		c0.10	0.32	
v/s Ratio Perm	0.02			c0.08		0.01			0.02			0.01
v/c Ratio	0.13	0.35		0.35	0.31	0.07	0.62	0.83	0.04	0.62	0.72	0.03
Uniform Delay, d1	35.6	42.7		32.2	39.8	37.8	50.2	31.3	20.8	47.2	26.5	18.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	2.9		0.6	2.0	0.4	5.1	2.9	0.0	4.3	0.9	0.0
Delay (s)	35.8	45.6		32.8	41.8	38.2	55.3	34.2	20.8	51.4	27.4	18.1
Level of Service	D	D		C	D	D	E	C	C	D	C	B
Approach Delay (s)		43.1			37.5			35.2			29.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	277	14	22	259	12	13
Future Vol, veh/h	277	14	22	259	12	13
Conflicting Peds, #/hr	0	4	4	0	6	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	86	86	86	86	86	86
Heavy Vehicles, %	1	3	3	1	0	3
Mvmt Flow	322	16	26	301	14	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	693	334
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	359	-
Critical Hdwy	-	-	4.13	-	6.4	6.23
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.327
Pot Cap-1 Maneuver	-	-	1211	-	412	706
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1206	-	397	703
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	688	-

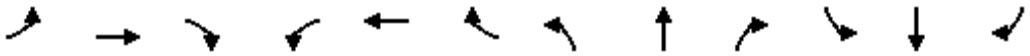
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	513	-	-	1206	-
HCM Lane V/C Ratio	0.057	-	-	0.021	-
HCM Control Delay (s)	12.4	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	189	48	88	227	93	1215	62	1352
v/c Ratio	0.69	0.77	0.47	0.61	0.60	0.65	0.60	0.49	0.66
Control Delay	63.1	50.7	61.0	62.5	15.0	44.1	16.9	57.3	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	50.7	61.0	62.5	15.0	44.1	16.9	57.3	18.8
Queue Length 50th (ft)	74	86	30	55	22	49	255	39	324
Queue Length 95th (ft)	130	154	#79	105	84	m49	m121	79	457
Internal Link Dist (ft)		206		1016			1126		238
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	232	337	103	172	421	176	2026	177	2057
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.56	0.47	0.51	0.54	0.53	0.60	0.35	0.66

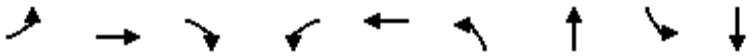
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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 (vph)	108	80	92	44	80	207	85	1077	28	56	1110	120
Future Volume (vph)	108	80	92	44	80	207	85	1077	28	56	1110	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1740		1805	1881	1604	1752	3522		1770	3513	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1740		1805	1881	1604	1752	3522		1770	3513	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	119	88	101	48	88	227	93	1184	31	62	1220	132
RTOR Reduction (vph)	0	44	0	0	0	159	0	2	0	0	7	0
Lane Group Flow (vph)	119	145	0	48	88	68	93	1213	0	62	1345	0
Confl. Peds. (#/hr)							3		4	4		3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	3%	2%	3%	2%	1%	1%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	9.7	11.7		4.7	6.7	13.8	7.2	56.5		7.1	56.4	
Effective Green, g (s)	9.7	11.7		4.7	6.7	13.8	7.2	56.5		7.1	56.4	
Actuated g/C Ratio	0.10	0.12		0.05	0.07	0.14	0.07	0.56		0.07	0.56	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	173	203		84	126	301	126	1989		125	1981	
v/s Ratio Prot	c0.07	c0.08		0.03	0.05	0.02	0.05	c0.34		0.04	c0.38	
v/s Ratio Perm						0.03						
v/c Ratio	0.69	0.71		0.57	0.70	0.22	0.74	0.61		0.50	0.68	
Uniform Delay, d1	43.7	42.5		46.7	45.7	38.3	45.5	14.4		44.7	15.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.82	1.03		1.00	1.00	
Incremental Delay, d2	8.7	9.5		5.7	12.8	0.1	6.7	0.5		1.1	0.7	
Delay (s)	52.4	52.0		52.4	58.4	38.5	44.1	15.4		45.9	16.1	
Level of Service	D	D		D	E	D	D	B		D	B	
Approach Delay (s)		52.2			45.2			17.5			17.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

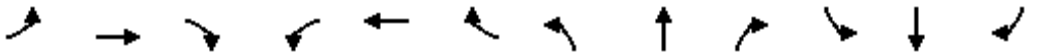


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	318	15	563	57	63	454	1029	19	1147
v/c Ratio	0.63	0.06	1.17	0.22	0.31	1.09	0.66	0.20	1.04
Control Delay	41.5	31.4	119.8	40.5	21.8	113.3	25.3	50.5	72.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	31.4	119.8	40.5	21.8	113.3	25.3	50.5	72.5
Queue Length 50th (ft)	172	9	~441	22	15	~169	238	12	~406
Queue Length 95th (ft)	#468	22	234	73	42	#263	376	35	#541
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	507	513	481	292	479	416	1563	180	1100
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.03	1.17	0.20	0.13	1.09	0.66	0.11	1.04

Intersection Summary

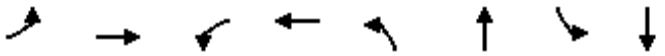
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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 (vph)	283	13	501	51	21	35	404	891	25	17	833	188
Future Volume (vph)	283	13	501	51	21	35	404	891	25	17	833	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1900	1580	1805	1668		3467	3522		1805	3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1900	1580	1805	1668		3467	3522		1805	3433	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	318	15	563	57	24	39	454	1001	28	19	936	211
RTOR Reduction (vph)	0	0	93	0	35	0	0	2	0	0	20	0
Lane Group Flow (vph)	318	15	470	57	28	0	454	1027	0	19	1127	0
Confl. Peds. (#/hr)	8		6	6		8	9		9	9		9
Confl. Bikes (#/hr)						1			3			1
Heavy Vehicles (%)	1%	0%	1%	0%	0%	3%	1%	2%	0%	0%	2%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	28.4	25.5	40.5	12.0	9.1		15.0	40.3		2.2	27.5	
Effective Green, g (s)	28.4	25.5	40.5	12.0	9.1		15.0	40.3		2.2	27.5	
Actuated g/C Ratio	0.28	0.26	0.40	0.12	0.09		0.15	0.40		0.02	0.28	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	507	484	639	216	151		520	1419		39	944	
v/s Ratio Prot	c0.18	0.01	c0.11	c0.03	0.02		c0.13	0.29		0.01	c0.33	
v/s Ratio Perm			0.19									
v/c Ratio	0.63	0.03	0.73	0.26	0.18		0.87	0.72		0.49	1.19	
Uniform Delay, d1	31.2	28.0	25.2	40.0	42.0		41.6	25.2		48.3	36.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.0	3.8	0.2	0.2		14.5	3.2		3.5	97.6	
Delay (s)	32.9	28.0	29.0	40.2	42.2		56.1	28.4		51.8	133.8	
Level of Service	C	C	C	D	D		E	C		D	F	
Approach Delay (s)		30.4			41.3			36.9			132.5	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	65.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	140	265	153	315	118	1327	178	1239
v/c Ratio	0.48	0.78	0.41	0.83	0.66	1.01	0.75	0.87
Control Delay	48.9	50.5	44.6	52.4	60.7	61.2	70.7	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	50.5	44.6	52.4	60.7	61.2	70.7	28.2
Queue Length 50th (ft)	44	147	47	176	73	~494	119	326
Queue Length 95th (ft)	73	217	78	259	#150	#702	m#211	#578
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	450	462	425	451	195	1309	251	1430
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	0.31	0.57	0.36	0.70	0.61	1.01	0.71	0.87

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.

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 (vph)	134	165	89	147	189	113	113	1082	192	171	1008	181
Future Volume (vph)	134	165	89	147	189	113	113	1082	192	171	1008	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1772		3502	1762		1805	3417		1787	3440	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	1772		3502	1762		1805	3417		1787	3440	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	140	172	93	153	197	118	118	1127	200	178	1050	189
RTOR Reduction (vph)	0	21	0	0	22	0	0	13	0	0	13	0
Lane Group Flow (vph)	140	244	0	153	293	0	118	1314	0	178	1226	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Confl. Bikes (#/hr)			1			4			5			2
Heavy Vehicles (%)	1%	0%	3%	0%	1%	1%	0%	3%	1%	1%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	8.4	18.0		10.8	20.4		10.0	37.9		13.3	41.2	
Effective Green, g (s)	8.4	18.0		10.8	20.4		10.0	37.9		13.3	41.2	
Actuated g/C Ratio	0.08	0.18		0.11	0.20		0.10	0.38		0.13	0.41	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	291	318		378	359		180	1295		237	1417	
v/s Ratio Prot	0.04	c0.14		0.04	c0.17		0.07	c0.38		c0.10	c0.36	
v/s Ratio Perm												
v/c Ratio	0.48	0.77		0.40	0.82		0.66	1.01		0.75	0.87	
Uniform Delay, d1	43.7	39.0		41.6	38.0		43.3	31.1		41.8	26.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.32	0.72	
Incremental Delay, d2	0.5	9.5		0.3	12.6		6.4	28.7		9.0	4.5	
Delay (s)	44.2	48.5		41.9	50.6		49.7	59.8		64.0	23.7	
Level of Service	D	D		D	D		D	E		E	C	
Approach Delay (s)		47.0			47.8			58.9			28.7	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	1391	1284	12
Future Vol, veh/h	0	2	0	1391	1284	12
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	0	2	0	1529	1411	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	712	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	379	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	379	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	379	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Control Delay (s)	-	14.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	268	273	11	11	9
Future Vol, veh/h	14	268	273	11	11	9
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	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	15	295	300	12	12	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	312	0	-	0	631	306
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	325	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1260	-	-	-	448	739
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1260	-	-	-	442	739
Mov Cap-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	737	-

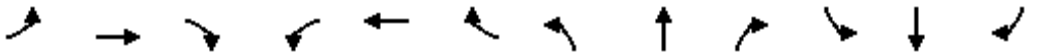
Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1260	-	-	-	540
HCM Lane V/C Ratio	0.012	-	-	-	0.041
HCM Control Delay (s)	7.9	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix F 2027 Total Operations (Proposed Zoning) Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	77	64	54	88	64	1150	80	77	1063	19
v/c Ratio	0.03	0.10	0.10	0.06	0.11	0.44	0.77	0.15	0.50	0.69	0.03
Control Delay	19.3	14.1	18.9	24.2	4.9	61.6	41.9	3.7	62.5	38.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	14.1	18.9	24.2	4.9	61.6	41.9	3.7	62.5	38.9	0.1
Queue Length 50th (ft)	6	14	25	21	0	48	297	0	58	264	0
Queue Length 95th (ft)	23	56	60	62	31	92	320	23	105	285	0
Internal Link Dist (ft)		600		638			842			586	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	721	747	667	900	785	167	2014	706	171	2014	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.10	0.10	0.06	0.11	0.38	0.57	0.11	0.45	0.53	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	28	44	60	51	83	60	1081	75	72	999	18
Future Volume (vph)	16	28	44	60	51	83	60	1081	75	72	999	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1802	1695		1752	1900	1546	1805	5036	1615	1752	5036	1568
Flt Permitted	0.72	1.00		0.65	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1369	1695		1206	1900	1546	1805	5036	1615	1752	5036	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	17	30	47	64	54	88	64	1150	80	77	1063	19
RTOR Reduction (vph)	0	28	0	0	0	49	0	0	56	0	0	13
Lane Group Flow (vph)	17	49	0	64	54	39	64	1150	24	77	1063	6
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	0%	0%	3%	3%	0%	3%	0%	3%	0%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	52.0	49.2		60.0	53.2	53.2	8.4	35.7	35.7	9.3	36.6	36.6
Effective Green, g (s)	52.0	49.2		60.0	53.2	53.2	8.4	35.7	35.7	9.3	36.6	36.6
Actuated g/C Ratio	0.43	0.41		0.50	0.44	0.44	0.07	0.30	0.30	0.08	0.31	0.31
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	603	694		633	842	685	126	1498	480	135	1535	478
v/s Ratio Prot	0.00	0.03		c0.01	0.03		0.04	c0.23		c0.04	0.21	
v/s Ratio Perm	0.01			c0.04		0.03			0.01			0.00
v/c Ratio	0.03	0.07		0.10	0.06	0.06	0.51	0.77	0.05	0.57	0.69	0.01
Uniform Delay, d1	19.5	21.5		15.6	19.1	19.1	53.8	38.4	30.1	53.4	36.7	29.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2		0.1	0.0	0.0	3.2	2.2	0.0	5.7	1.1	0.0
Delay (s)	19.5	21.7		15.7	19.1	19.1	57.0	40.6	30.1	59.1	37.8	29.1
Level of Service	B	C		B	B	B	E	D	C	E	D	C
Approach Delay (s)		21.3			18.1			40.7			39.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	208	10	8	207	16	20
Future Vol, veh/h	208	10	8	207	16	20
Conflicting Peds, #/hr	0	3	3	0	3	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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	270	13	10	269	21	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	572	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1270	-	485	764
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	762	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1266	-	478	762
Mov Cap-2 Maneuver	-	-	-	-	478	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	753	-

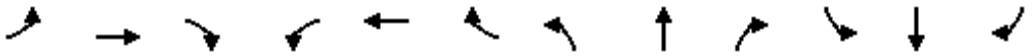
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	603	-	-	1266	-
HCM Lane V/C Ratio	0.078	-	-	0.008	-
HCM Control Delay (s)	11.5	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	124	26	60	54	57	939	27	837
v/c Ratio	0.75	0.31	0.26	0.41	0.17	0.42	0.47	0.28	0.44
Control Delay	60.3	15.3	51.4	50.8	1.2	44.4	14.6	52.2	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	15.3	51.4	50.8	1.2	44.4	14.6	52.2	17.3
Queue Length 50th (ft)	108	22	16	38	0	28	165	17	166
Queue Length 95th (ft)	169	67	43	72	0	m46	140	44	295
Internal Link Dist (ft)		318		1016			1126		227
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	350	474	100	171	318	150	2042	108	1958
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.26	0.26	0.35	0.17	0.38	0.46	0.25	0.43

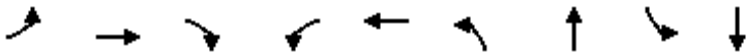
Intersection Summary

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 (vph)	160	41	73	24	55	50	52	839	25	25	698	72
Future Volume (vph)	160	41	73	24	55	50	52	839	25	25	698	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1718		1805	1845	1556	1805	3490		1752	3449	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1718		1805	1845	1556	1805	3490		1752	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	45	79	26	60	54	57	912	27	27	759	78
RTOR Reduction (vph)	0	63	0	0	0	48	0	2	0	0	7	0
Lane Group Flow (vph)	174	61	0	26	60	6	57	937	0	27	830	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	0%	0%	3%	3%	0%	3%	0%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	15.4	19.7		2.6	6.9	11.5	6.6	53.1		4.6	51.1	
Effective Green, g (s)	15.4	19.7		2.6	6.9	11.5	6.6	53.1		4.6	51.1	
Actuated g/C Ratio	0.15	0.20		0.03	0.07	0.12	0.07	0.53		0.05	0.51	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	269	338		46	127	178	119	1853		80	1762	
v/s Ratio Prot	c0.10	c0.04		0.01	c0.03	0.00	0.03	c0.27		0.02	c0.24	
v/s Ratio Perm						0.00						
v/c Ratio	0.65	0.18		0.57	0.47	0.03	0.48	0.51		0.34	0.47	
Uniform Delay, d1	39.7	33.4		48.1	44.8	39.3	45.0	15.0		46.2	15.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.85	0.89		1.00	1.00	
Incremental Delay, d2	4.0	0.1		9.1	1.0	0.0	0.8	0.8		0.9	0.1	
Delay (s)	43.7	33.5		57.3	45.8	39.3	39.3	14.1		47.1	15.8	
Level of Service	D	C		E	D	D	D	B		D	B	
Approach Delay (s)		39.5			45.4			15.5			16.8	
Approach LOS		D			D			B			B	

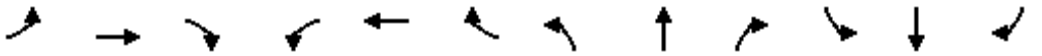
Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	136	118	209	166	234	516	932	100	808
v/c Ratio	0.70	0.40	0.35	0.79	0.73	0.88	0.60	0.70	0.67
Control Delay	61.7	39.3	6.7	69.6	44.9	60.1	24.6	69.1	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	39.3	6.7	69.6	44.9	60.1	24.6	69.1	30.6
Queue Length 50th (ft)	84	70	22	103	120	167	223	63	214
Queue Length 95th (ft)	116	84	30	139	135	#235	280	94	244
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	233	516	601	227	507	587	1561	176	1204
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.23	0.35	0.73	0.46	0.88	0.60	0.57	0.67

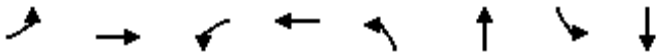
Intersection Summary

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 (vph)	101	87	155	123	96	77	382	507	183	74	452	146
Future Volume (vph)	101	87	155	123	96	77	382	507	183	74	452	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1552	1752	1711		3433	3341		1752	3363	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1552	1752	1711		3433	3341		1752	3363	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	136	118	209	166	130	104	516	685	247	100	611	197
RTOR Reduction (vph)	0	0	86	0	33	0	0	28	0	0	28	0
Lane Group Flow (vph)	136	118	123	166	201	0	516	904	0	100	780	0
Confl. Peds. (#/hr)	1		8	8		1	3		3	3		3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	11.1	16.0	34.1	11.9	16.8		18.1	44.9		7.2	34.0	
Effective Green, g (s)	11.1	16.0	34.1	11.9	16.8		18.1	44.9		7.2	34.0	
Actuated g/C Ratio	0.11	0.16	0.34	0.12	0.17		0.18	0.45		0.07	0.34	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	194	295	529	208	287		621	1500		126	1143	
v/s Ratio Prot	c0.08	c0.06	0.04	0.09	c0.12		c0.15	0.27		0.06	c0.23	
v/s Ratio Perm			0.04									
v/c Ratio	0.70	0.40	0.23	0.80	0.70		0.83	0.60		0.79	0.68	
Uniform Delay, d1	42.9	37.7	23.6	42.9	39.2		39.5	20.8		45.7	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	0.3	0.1	17.7	5.9		8.9	1.8		26.5	1.4	
Delay (s)	51.8	38.0	23.7	60.6	45.1		48.3	22.6		72.2	29.7	
Level of Service	D	D	C	E	D		D	C		E	C	
Approach Delay (s)		35.6			51.6			31.8			34.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	177	211	138	285	53	1064	95	978
v/c Ratio	0.55	0.59	0.48	0.82	0.41	0.68	0.61	0.60
Control Delay	49.5	38.7	49.0	51.1	52.9	27.0	73.1	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	38.7	49.0	51.1	52.9	27.0	73.1	18.3
Queue Length 50th (ft)	56	108	44	148	33	288	64	252
Queue Length 95th (ft)	76	145	63	189	61	347	99	225
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	408	455	374	445	175	1572	180	1619
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	0.43	0.46	0.37	0.64	0.30	0.68	0.53	0.60

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	111	55	109	114	111	42	750	91	75	683	89
Future Volume (vph)	140	111	55	109	114	111	42	750	91	75	683	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1750		3400	1710		1752	3438		1752	3434	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3400	1750		3400	1710		1752	3438		1752	3434	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	177	141	70	138	144	141	53	949	115	95	865	113
RTOR Reduction (vph)	0	19	0	0	38	0	0	8	0	0	8	0
Lane Group Flow (vph)	177	192	0	138	247	0	53	1056	0	95	970	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Confl. Bikes (#/hr)			2			2			2			1
Heavy Vehicles (%)	3%	3%	2%	3%	1%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	9.5	19.3		8.4	18.2		6.4	44.4		7.9	45.9	
Effective Green, g (s)	9.5	19.3		8.4	18.2		6.4	44.4		7.9	45.9	
Actuated g/C Ratio	0.10	0.19		0.08	0.18		0.06	0.44		0.08	0.46	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	323	337		285	311		112	1526		138	1576	
v/s Ratio Prot	c0.05	0.11		0.04	c0.14		0.03	c0.31		c0.05	0.28	
v/s Ratio Perm												
v/c Ratio	0.55	0.57		0.48	0.80		0.47	0.69		0.69	0.62	
Uniform Delay, d1	43.2	36.6		43.7	39.1		45.2	22.3		44.9	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.32	0.74	
Incremental Delay, d2	1.0	1.3		0.5	12.3		1.1	2.6		10.4	0.5	
Delay (s)	44.2	37.9		44.2	51.4		46.3	24.9		69.6	15.5	
Level of Service	D	D		D	D		D	C		E	B	
Approach Delay (s)		40.8			49.1			25.9			20.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	0	1049	787	10
Future Vol, veh/h	0	8	0	1049	787	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, %	0	0	0	3	3	0
Mvmt Flow	0	9	0	1140	855	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	433	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	576	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	576	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	576	-	-
HCM Lane V/C Ratio	-	0.015	-	-
HCM Control Delay (s)	-	11.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	229	171	8	45	34
Future Vol, veh/h	10	229	171	8	45	34
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, %	0	0	3	0	0	0
Mvmt Flow	11	249	186	9	49	37

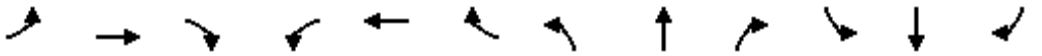
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	195	0	-	0	462	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1390	-	-	-	562	856
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	557	856
Mov Cap-2 Maneuver	-	-	-	-	557	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	779	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1390	-	-	-	656
HCM Lane V/C Ratio	0.008	-	-	-	0.131
HCM Control Delay (s)	7.6	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	128	136	123	113	133	1743	73	188	1669	47
v/c Ratio	0.13	0.41	0.40	0.32	0.28	0.62	0.84	0.10	0.60	0.69	0.06
Control Delay	34.0	45.8	37.8	46.8	10.3	61.9	35.8	2.2	54.3	27.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	45.8	37.8	46.8	10.3	61.9	35.8	2.2	54.3	27.1	0.1
Queue Length 50th (ft)	26	83	83	86	0	99	414	0	136	345	0
Queue Length 95th (ft)	55	140	135	146	50	156	486	15	204	421	0
Internal Link Dist (ft)		642		766			1016			601	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	379	487	343	536	521	226	2102	704	311	2403	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.26	0.40	0.23	0.22	0.59	0.83	0.10	0.60	0.69	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	82	31	120	108	99	117	1534	64	165	1469	41
Future Volume (vph)	40	82	31	120	108	99	117	1534	64	165	1469	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1787		1803	1881	1542	1805	5036	1549	1787	5136	1580
Flt Permitted	0.68	1.00		0.49	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1288	1787		939	1881	1542	1805	5036	1549	1787	5136	1580
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	45	93	35	136	123	112	133	1743	73	188	1669	47
RTOR Reduction (vph)	0	12	0	0	0	91	0	0	43	0	0	25
Lane Group Flow (vph)	45	116	0	136	123	22	133	1743	30	188	1669	22
Confl. Peds. (#/hr)			2	2			1		1	1		1
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	1%	3%	0%	1%	3%	0%	3%	2%	1%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	26.7	20.1		34.1	23.8	23.8	14.4	49.7	49.7	20.9	56.2	56.2
Effective Green, g (s)	26.7	20.1		34.1	23.8	23.8	14.4	49.7	49.7	20.9	56.2	56.2
Actuated g/C Ratio	0.22	0.17		0.28	0.20	0.20	0.12	0.41	0.41	0.17	0.47	0.47
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	315	299		340	373	305	216	2085	641	311	2405	739
v/s Ratio Prot	0.01	0.06		c0.03	0.07		0.07	c0.35		c0.11	c0.32	
v/s Ratio Perm	0.02			c0.08		0.01			0.02			0.01
v/c Ratio	0.14	0.39		0.40	0.33	0.07	0.62	0.84	0.05	0.60	0.69	0.03
Uniform Delay, d1	37.2	44.5		33.4	41.3	39.1	50.2	31.5	21.0	45.7	25.1	17.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	3.7		0.8	2.4	0.5	5.1	2.9	0.0	3.3	0.7	0.0
Delay (s)	37.4	48.2		34.2	43.6	39.6	55.3	34.4	21.0	49.0	25.8	17.2
Level of Service	D	D		C	D	D	E	C	C	D	C	B
Approach Delay (s)		45.4			39.0			35.4			27.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	299	14	22	272	12	13
Future Vol, veh/h	299	14	22	272	12	13
Conflicting Peds, #/hr	0	4	4	0	6	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	86	86	86	86	86	86
Heavy Vehicles, %	1	3	3	1	0	3
Mvmt Flow	348	16	26	316	14	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	368	0	734	360
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	374	-
Critical Hdwy	-	-	4.13	-	6.4	6.23
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.327
Pot Cap-1 Maneuver	-	-	1185	-	390	682
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	700	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1180	-	376	679
Mov Cap-2 Maneuver	-	-	-	-	376	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	677	-

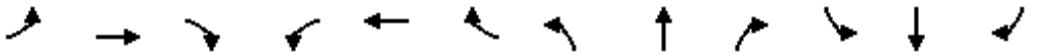
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	490	-	-	1180	-
HCM Lane V/C Ratio	0.059	-	-	0.022	-
HCM Control Delay (s)	12.8	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	193	48	90	227	103	1215	62	1360
v/c Ratio	0.73	0.74	0.49	0.62	0.60	0.61	0.61	0.49	0.71
Control Delay	65.3	46.8	63.7	62.9	15.0	40.0	16.0	57.3	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	46.8	63.7	62.9	15.0	40.0	16.0	57.3	21.0
Queue Length 50th (ft)	83	88	30	56	22	53	236	39	339
Queue Length 95th (ft)	143	156	#79	108	84	m54	m120	79	462
Internal Link Dist (ft)		206		1016			1126		238
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	232	337	97	172	422	179	2005	177	1929
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.57	0.49	0.52	0.54	0.58	0.61	0.35	0.71

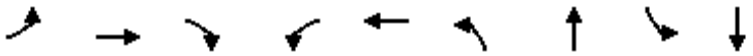
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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 (vph)	121	81	95	44	82	207	94	1077	28	56	1113	125
Future Volume (vph)	121	81	95	44	82	207	94	1077	28	56	1113	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1738		1805	1881	1604	1752	3522		1770	3511	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1738		1805	1881	1604	1752	3522		1770	3511	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	133	89	104	48	90	227	103	1184	31	62	1223	137
RTOR Reduction (vph)	0	45	0	0	0	159	0	2	0	0	7	0
Lane Group Flow (vph)	133	148	0	48	90	68	103	1213	0	62	1353	0
Confl. Peds. (#/hr)							3		4	4		3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	3%	2%	3%	2%	1%	1%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	10.3	12.6		4.4	6.7	13.8	9.6	55.9		7.1	53.4	
Effective Green, g (s)	10.3	12.6		4.4	6.7	13.8	9.6	55.9		7.1	53.4	
Actuated g/C Ratio	0.10	0.13		0.04	0.07	0.14	0.10	0.56		0.07	0.53	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	184	218		79	126	301	168	1968		125	1874	
v/s Ratio Prot	c0.07	c0.09		0.03	0.05	0.02	0.06	c0.34		0.04	c0.39	
v/s Ratio Perm						0.03						
v/c Ratio	0.72	0.68		0.61	0.71	0.22	0.61	0.62		0.50	0.72	
Uniform Delay, d1	43.5	41.8		47.0	45.7	38.3	43.4	14.8		44.7	17.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.78	0.95		1.00	1.00	
Incremental Delay, d2	11.2	6.8		8.7	14.7	0.1	1.6	0.5		1.1	1.2	
Delay (s)	54.7	48.6		55.7	60.5	38.5	35.5	14.6		45.9	18.9	
Level of Service	D	D		E	E	D	D	B		D	B	
Approach Delay (s)		51.1			46.2			16.2			20.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

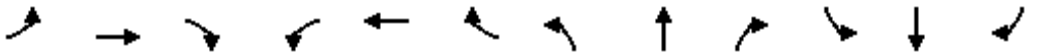


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	318	15	574	57	63	460	1038	19	1162
v/c Ratio	0.63	0.06	1.20	0.22	0.31	1.11	0.66	0.20	1.06
Control Delay	41.5	31.4	129.9	40.5	21.8	117.8	25.4	50.5	76.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	31.4	129.9	40.5	21.8	117.8	25.4	50.5	76.5
Queue Length 50th (ft)	172	9	~458	22	15	~173	241	12	~417
Queue Length 95th (ft)	#468	22	#261	73	42	#268	380	35	#552
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	507	513	480	292	479	416	1563	180	1101
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.03	1.20	0.20	0.13	1.11	0.66	0.11	1.06

Intersection Summary

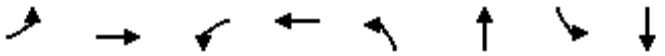
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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 (vph)	283	13	511	51	21	35	409	899	25	17	846	188
Future Volume (vph)	283	13	511	51	21	35	409	899	25	17	846	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1900	1580	1805	1668		3467	3523		1805	3434	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1900	1580	1805	1668		3467	3523		1805	3434	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	318	15	574	57	24	39	460	1010	28	19	951	211
RTOR Reduction (vph)	0	0	93	0	35	0	0	2	0	0	20	0
Lane Group Flow (vph)	318	15	481	57	28	0	460	1036	0	19	1142	0
Confl. Peds. (#/hr)	8		6	6		8	9		9	9		9
Confl. Bikes (#/hr)						1			3			1
Heavy Vehicles (%)	1%	0%	1%	0%	0%	3%	1%	2%	0%	0%	2%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	28.4	25.5	40.5	12.0	9.1		15.0	40.3		2.2	27.5	
Effective Green, g (s)	28.4	25.5	40.5	12.0	9.1		15.0	40.3		2.2	27.5	
Actuated g/C Ratio	0.28	0.26	0.40	0.12	0.09		0.15	0.40		0.02	0.28	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	507	484	639	216	151		520	1419		39	944	
v/s Ratio Prot	c0.18	0.01	c0.11	c0.03	0.02		c0.13	0.29		0.01	c0.33	
v/s Ratio Perm			0.19									
v/c Ratio	0.63	0.03	0.75	0.26	0.18		0.88	0.73		0.49	1.21	
Uniform Delay, d1	31.2	28.0	25.5	40.0	42.0		41.7	25.3		48.3	36.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.0	4.5	0.2	0.2		15.9	3.3		3.5	104.5	
Delay (s)	32.9	28.0	29.9	40.2	42.2		57.6	28.6		51.8	140.8	
Level of Service	C	C	C	D	D		E	C		D	F	
Approach Delay (s)		31.0			41.3			37.5			139.3	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	68.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



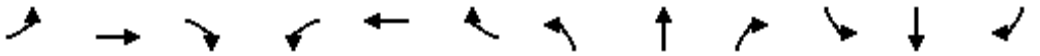
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	140	265	153	316	118	1335	179	1244
v/c Ratio	0.48	0.78	0.41	0.83	0.66	1.02	0.76	0.87
Control Delay	48.9	50.5	44.6	52.3	60.7	63.2	69.4	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	50.5	44.6	52.3	60.7	63.2	69.4	28.8
Queue Length 50th (ft)	44	147	47	176	73	~501	120	196
Queue Length 95th (ft)	73	217	78	259	#150	#708	m#191	#583
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	450	462	425	452	195	1308	252	1430
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	0.31	0.57	0.36	0.70	0.61	1.02	0.71	0.87

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.

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 (vph)	134	165	89	147	189	114	113	1090	192	172	1013	181
Future Volume (vph)	134	165	89	147	189	114	113	1090	192	172	1013	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1772		3502	1761		1805	3418		1787	3441	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	1772		3502	1761		1805	3418		1787	3441	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	140	172	93	153	197	119	118	1135	200	179	1055	189
RTOR Reduction (vph)	0	21	0	0	23	0	0	12	0	0	13	0
Lane Group Flow (vph)	140	244	0	153	293	0	118	1323	0	179	1231	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Confl. Bikes (#/hr)			1			4			5			2
Heavy Vehicles (%)	1%	0%	3%	0%	1%	1%	0%	3%	1%	1%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	8.4	18.0		10.8	20.4		10.0	37.9		13.3	41.2	
Effective Green, g (s)	8.4	18.0		10.8	20.4		10.0	37.9		13.3	41.2	
Actuated g/C Ratio	0.08	0.18		0.11	0.20		0.10	0.38		0.13	0.41	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	291	318		378	359		180	1295		237	1417	
v/s Ratio Prot	0.04	c0.14		0.04	c0.17		0.07	c0.39		c0.10	c0.36	
v/s Ratio Perm												
v/c Ratio	0.48	0.77		0.40	0.82		0.66	1.02		0.76	0.87	
Uniform Delay, d1	43.7	39.0		41.6	38.0		43.3	31.1		41.8	26.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.30	0.74	
Incremental Delay, d2	0.5	9.5		0.3	12.7		6.4	30.5		8.7	4.3	
Delay (s)	44.2	48.5		41.9	50.7		49.7	61.6		63.1	24.3	
Level of Service	D	D		D	D		D	E		E	C	
Approach Delay (s)		47.0			47.8			60.6			29.2	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	0	1404	1289	30
Future Vol, veh/h	0	5	0	1404	1289	30
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	0	5	0	1543	1416	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	725	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	372	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	372	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	372	-	-
HCM Lane V/C Ratio	-	0.015	-	-
HCM Control Delay (s)	-	14.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	268	273	27	28	22
Future Vol, veh/h	36	268	273	27	28	22
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	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	40	295	300	30	31	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	330	0	-	0	690	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1241	-	-	-	414	730
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1241	-	-	-	398	730
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	699	-

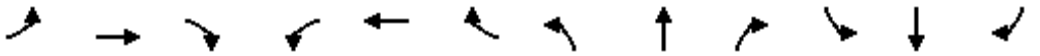
Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1241	-	-	-	498
HCM Lane V/C Ratio	0.032	-	-	-	0.11
HCM Control Delay (s)	8	0	-	-	13.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Appendix G 2032 Background Operations (Existing Zoning) Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	79	52	55	81	66	1176	78	77	1088	19
v/c Ratio	0.03	0.11	0.08	0.06	0.10	0.46	0.76	0.14	0.50	0.69	0.03
Control Delay	19.8	14.2	19.7	24.7	4.0	61.7	41.0	3.3	62.5	38.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	14.2	19.7	24.7	4.0	61.7	41.0	3.3	62.5	38.3	0.1
Queue Length 50th (ft)	7	15	21	22	0	50	300	0	58	268	0
Queue Length 95th (ft)	23	57	51	64	26	94	326	21	105	291	0
Internal Link Dist (ft)		600		638			842			586	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	713	740	658	884	773	168	2014	706	171	2014	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.11	0.08	0.06	0.10	0.39	0.58	0.11	0.45	0.54	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	29	45	49	52	76	62	1105	73	72	1023	18
Future Volume (vph)	16	29	45	49	52	76	62	1105	73	72	1023	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1802	1696		1752	1900	1546	1805	5036	1615	1752	5036	1568
Flt Permitted	0.72	1.00		0.66	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1368	1696		1212	1900	1546	1805	5036	1615	1752	5036	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	17	31	48	52	55	81	66	1176	78	77	1088	19
RTOR Reduction (vph)	0	29	0	0	0	46	0	0	54	0	0	13
Lane Group Flow (vph)	17	50	0	52	55	35	66	1176	24	77	1088	6
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	0%	0%	3%	3%	0%	3%	0%	3%	0%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	51.4	48.6		58.6	52.2	52.2	8.5	36.7	36.7	9.3	37.5	37.5
Effective Green, g (s)	51.4	48.6		58.6	52.2	52.2	8.5	36.7	36.7	9.3	37.5	37.5
Actuated g/C Ratio	0.43	0.41		0.49	0.44	0.44	0.07	0.31	0.31	0.08	0.31	0.31
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	596	686		620	826	672	127	1540	493	135	1573	490
v/s Ratio Prot	0.00	0.03		c0.00	0.03		0.04	c0.23		c0.04	0.22	
v/s Ratio Perm	0.01			c0.04		0.02			0.01			0.00
v/c Ratio	0.03	0.07		0.08	0.07	0.05	0.52	0.76	0.05	0.57	0.69	0.01
Uniform Delay, d1	19.8	21.9		16.2	19.7	19.6	53.8	37.7	29.3	53.4	36.2	28.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2		0.1	0.0	0.0	3.6	2.1	0.0	5.7	1.1	0.0
Delay (s)	19.8	22.1		16.3	19.7	19.6	57.3	39.8	29.4	59.1	37.3	28.5
Level of Service	B	C		B	B	B	E	D	C	E	D	C
Approach Delay (s)		21.7			18.7			40.1			38.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	10	8	190	16	21
Future Vol, veh/h	206	10	8	190	16	21
Conflicting Peds, #/hr	0	3	3	0	3	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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	268	13	10	247	21	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	284	0	548	278
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	270	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1273	-	501	766
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1269	-	493	764
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	771	-

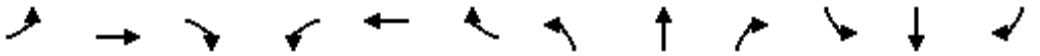
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	617	-	-	1269	-
HCM Lane V/C Ratio	0.078	-	-	0.008	-
HCM Control Delay (s)	11.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	153	121	27	60	55	54	958	28	847
v/c Ratio	0.72	0.35	0.27	0.41	0.18	0.39	0.47	0.28	0.44
Control Delay	60.5	17.5	51.6	50.6	1.2	43.9	14.5	52.2	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	17.5	51.6	50.6	1.2	43.9	14.5	52.2	16.6
Queue Length 50th (ft)	95	26	17	38	0	27	171	18	165
Queue Length 95th (ft)	154	68	44	72	0	m42	144	45	294
Internal Link Dist (ft)		318		1016			1126		227
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	350	461	100	172	319	152	2073	109	1987
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.26	0.27	0.35	0.17	0.36	0.46	0.26	0.43

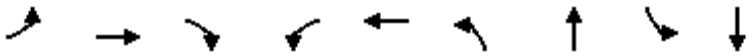
Intersection Summary

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 (vph)	141	41	70	25	55	51	50	856	26	26	707	73
Future Volume (vph)	141	41	70	25	55	51	50	856	26	26	707	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1721		1805	1845	1556	1805	3490		1752	3449	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1721		1805	1845	1556	1805	3490		1752	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	45	76	27	60	55	54	930	28	28	768	79
RTOR Reduction (vph)	0	63	0	0	0	49	0	2	0	0	7	0
Lane Group Flow (vph)	153	58	0	27	60	6	54	956	0	28	840	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	0%	0%	3%	3%	0%	3%	0%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	13.1	16.5		3.6	7.0	11.7	6.7	55.2		4.7	53.2	
Effective Green, g (s)	13.1	16.5		3.6	7.0	11.7	6.7	55.2		4.7	53.2	
Actuated g/C Ratio	0.13	0.16		0.04	0.07	0.12	0.07	0.55		0.05	0.53	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	229	283		64	129	182	120	1926		82	1834	
v/s Ratio Prot	c0.09	c0.03		0.01	c0.03	0.00	0.03	c0.27		0.02	c0.24	
v/s Ratio Perm						0.00						
v/c Ratio	0.67	0.20		0.42	0.47	0.04	0.45	0.50		0.34	0.46	
Uniform Delay, d1	41.4	36.1		47.2	44.7	39.1	44.9	13.8		46.2	14.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.87	0.91		1.00	1.00	
Incremental Delay, d2	5.6	0.1		1.6	1.0	0.0	0.7	0.7		0.9	0.1	
Delay (s)	47.0	36.2		48.8	45.7	39.2	39.7	13.3		47.1	14.5	
Level of Service	D	D		D	D	D	D	B		D	B	
Approach Delay (s)		42.2			43.8			14.7			15.6	
Approach LOS		D			D			B			B	

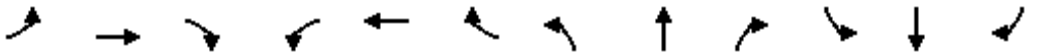
Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	143	118	214	166	234	526	933	103	823
v/c Ratio	0.71	0.39	0.36	0.79	0.73	0.92	0.63	0.71	0.68
Control Delay	62.0	38.8	6.9	69.6	44.9	65.7	25.8	69.6	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	38.8	6.9	69.6	44.9	65.7	25.8	69.6	30.8
Queue Length 50th (ft)	89	69	24	103	120	172	226	65	219
Queue Length 95th (ft)	121	84	32	139	135	#240	279	96	248
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	235	516	600	227	507	573	1478	177	1205
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.23	0.36	0.73	0.46	0.92	0.63	0.58	0.68

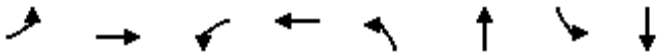
Intersection Summary

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



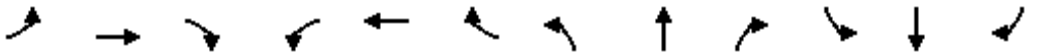
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	87	158	123	96	77	389	503	187	76	456	153
Future Volume (vph)	106	87	158	123	96	77	389	503	187	76	456	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1551	1752	1711		3433	3338		1752	3359	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1551	1752	1711		3433	3338		1752	3359	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	143	118	214	166	130	104	526	680	253	103	616	207
RTOR Reduction (vph)	0	0	88	0	33	0	0	31	0	0	29	0
Lane Group Flow (vph)	143	118	126	166	201	0	526	902	0	103	794	0
Confl. Peds. (#/hr)	1		8	8		1	3		3	3		3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	11.4	16.3	33.0	11.9	16.8		16.7	43.5		8.3	35.1	
Effective Green, g (s)	11.4	16.3	33.0	11.9	16.8		16.7	43.5		8.3	35.1	
Actuated g/C Ratio	0.11	0.16	0.33	0.12	0.17		0.17	0.44		0.08	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	199	300	511	208	287		573	1452		145	1179	
v/s Ratio Prot	c0.08	c0.06	0.04	0.09	c0.12		c0.15	0.27		0.06	c0.24	
v/s Ratio Perm			0.04									
v/c Ratio	0.72	0.39	0.25	0.80	0.70		0.92	0.62		0.71	0.67	
Uniform Delay, d1	42.8	37.4	24.4	42.9	39.2		41.0	21.9		44.7	27.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.9	0.3	0.1	17.7	5.9		19.3	2.0		12.8	1.2	
Delay (s)	52.6	37.7	24.5	60.6	45.1		60.3	23.9		57.4	28.8	
Level of Service	D	D	C	E	D		E	C		E	C	
Approach Delay (s)		36.3			51.6			37.0			32.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	215	139	289	54	1082	96	986
v/c Ratio	0.56	0.60	0.48	0.82	0.41	0.69	0.61	0.61
Control Delay	49.6	38.7	49.1	51.5	52.9	27.6	74.3	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	38.7	49.1	51.5	52.9	27.6	74.3	18.3
Queue Length 50th (ft)	57	111	44	150	33	298	64	256
Queue Length 95th (ft)	78	148	63	192	62	355	101	215
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	408	455	374	445	175	1562	180	1609
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	0.44	0.47	0.37	0.65	0.31	0.69	0.53	0.61

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	114	56	110	116	112	43	763	92	76	688	91
Future Volume (vph)	143	114	56	110	116	112	43	763	92	76	688	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1751		3400	1711		1752	3439		1752	3433	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3400	1751		3400	1711		1752	3439		1752	3433	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	181	144	71	139	147	142	54	966	116	96	871	115
RTOR Reduction (vph)	0	19	0	0	38	0	0	8	0	0	9	0
Lane Group Flow (vph)	181	196	0	139	251	0	54	1074	0	96	977	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Confl. Bikes (#/hr)			2			2			2			1
Heavy Vehicles (%)	3%	3%	2%	3%	1%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	9.6	19.5		8.4	18.3		6.5	44.2		7.9	45.6	
Effective Green, g (s)	9.6	19.5		8.4	18.3		6.5	44.2		7.9	45.6	
Actuated g/C Ratio	0.10	0.20		0.08	0.18		0.06	0.44		0.08	0.46	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	326	341		285	313		113	1520		138	1565	
v/s Ratio Prot	c0.05	0.11		0.04	c0.15		0.03	c0.31		c0.05	0.28	
v/s Ratio Perm												
v/c Ratio	0.56	0.57		0.49	0.80		0.48	0.71		0.70	0.62	
Uniform Delay, d1	43.2	36.5		43.7	39.1		45.1	22.6		44.9	20.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.34	0.72	
Incremental Delay, d2	1.2	1.5		0.5	13.1		1.2	2.8		11.2	0.5	
Delay (s)	44.3	37.9		44.2	52.2		46.3	25.4		71.2	15.5	
Level of Service	D	D		D	D		D	C		E	B	
Approach Delay (s)		40.9			49.6			26.4			20.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	1048	802	4
Future Vol, veh/h	0	3	0	1048	802	4
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, %	0	0	0	3	3	0
Mvmt Flow	0	3	0	1139	872	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	438	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	572	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	572	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	572	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Control Delay (s)	-	11.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	234	175	3	18	13
Future Vol, veh/h	4	234	175	3	18	13
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, %	0	0	3	0	0	0
Mvmt Flow	4	254	190	3	20	14

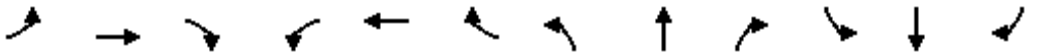
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	193	0	-	0	454	192
Stage 1	-	-	-	-	192	-
Stage 2	-	-	-	-	262	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1392	-	-	-	568	855
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1392	-	-	-	566	855
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	786	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1392	-	-	-	659
HCM Lane V/C Ratio	0.003	-	-	-	0.051
HCM Control Delay (s)	7.6	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	131	131	126	109	136	1782	60	181	1706	48
v/c Ratio	0.14	0.41	0.39	0.32	0.27	0.62	0.84	0.08	0.62	0.72	0.06
Control Delay	34.0	45.3	37.4	46.9	10.3	61.9	35.4	1.2	55.7	27.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	45.3	37.4	46.9	10.3	61.9	35.4	1.2	55.7	27.8	0.1
Queue Length 50th (ft)	28	85	80	89	0	101	420	0	131	354	0
Queue Length 95th (ft)	57	143	131	149	49	158	500	6	197	438	0
Internal Link Dist (ft)		642		766			1016			601	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	382	488	344	539	520	229	2126	712	294	2385	787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.27	0.38	0.23	0.21	0.59	0.84	0.08	0.62	0.72	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	84	32	115	111	96	120	1568	53	159	1501	42
Future Volume (vph)	41	84	32	115	111	96	120	1568	53	159	1501	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1786		1803	1881	1542	1805	5036	1549	1787	5136	1580
Flt Permitted	0.68	1.00		0.50	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1285	1786		947	1881	1542	1805	5036	1549	1787	5136	1580
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	47	95	36	131	126	109	136	1782	60	181	1706	48
RTOR Reduction (vph)	0	13	0	0	0	87	0	0	35	0	0	26
Lane Group Flow (vph)	47	118	0	131	126	22	136	1782	25	181	1706	22
Confl. Peds. (#/hr)			2	2			1		1	1		1
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	1%	3%	0%	1%	3%	0%	3%	2%	1%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	27.3	20.6		34.1	24.0	24.0	14.6	50.5	50.5	19.8	55.7	55.7
Effective Green, g (s)	27.3	20.6		34.1	24.0	24.0	14.6	50.5	50.5	19.8	55.7	55.7
Actuated g/C Ratio	0.23	0.17		0.28	0.20	0.20	0.12	0.42	0.42	0.17	0.46	0.46
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	321	306		341	376	308	219	2119	651	294	2383	733
v/s Ratio Prot	0.01	0.07		c0.03	0.07		0.08	c0.35		c0.10	0.33	
v/s Ratio Perm	0.03			c0.08		0.01			0.02			0.01
v/c Ratio	0.15	0.38		0.38	0.34	0.07	0.62	0.84	0.04	0.62	0.72	0.03
Uniform Delay, d1	36.8	44.1		33.3	41.2	39.0	50.1	31.2	20.5	46.6	25.8	17.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	3.6		0.7	2.4	0.4	5.4	3.1	0.0	3.8	0.9	0.0
Delay (s)	37.0	47.7		34.1	43.6	39.4	55.5	34.2	20.5	50.4	26.7	17.5
Level of Service	D	D		C	D	D	E	C	C	D	C	B
Approach Delay (s)		44.9			38.9			35.3			28.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	14	23	265	12	13
Future Vol, veh/h	283	14	23	265	12	13
Conflicting Peds, #/hr	0	4	4	0	6	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	86	86	86	86	86	86
Heavy Vehicles, %	1	3	3	1	0	3
Mvmt Flow	329	16	27	308	14	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	349	0	709	341
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	368	-
Critical Hdwy	-	-	4.13	-	6.4	6.23
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.327
Pot Cap-1 Maneuver	-	-	1204	-	404	699
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1199	-	389	696
Mov Cap-2 Maneuver	-	-	-	-	389	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	681	-

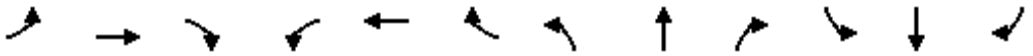
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	505	-	-	1199	-
HCM Lane V/C Ratio	0.058	-	-	0.022	-
HCM Control Delay (s)	12.6	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	121	193	49	90	231	95	1243	63	1381
v/c Ratio	0.69	0.77	0.49	0.62	0.60	0.66	0.62	0.50	0.67
Control Delay	63.2	50.6	62.7	62.9	15.5	42.1	17.0	57.4	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	50.6	62.7	62.9	15.5	42.1	17.0	57.4	19.4
Queue Length 50th (ft)	76	89	31	56	24	49	252	40	338
Queue Length 95th (ft)	132	157	#81	108	88	m48	m121	80	473
Internal Link Dist (ft)		206		1016			1126		238
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	232	337	101	172	422	177	2018	177	2052
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.57	0.49	0.52	0.55	0.54	0.62	0.36	0.67

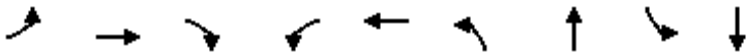
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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 (vph)	110	82	94	45	82	210	86	1102	29	57	1134	123
Future Volume (vph)	110	82	94	45	82	210	86	1102	29	57	1134	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1740		1805	1881	1604	1752	3522		1770	3513	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1740		1805	1881	1604	1752	3522		1770	3513	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	121	90	103	49	90	231	95	1211	32	63	1246	135
RTOR Reduction (vph)	0	44	0	0	0	159	0	2	0	0	7	0
Lane Group Flow (vph)	121	149	0	49	90	72	95	1241	0	63	1374	0
Confl. Peds. (#/hr)							3		4	4		3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	3%	2%	3%	2%	1%	1%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	9.8	11.9		4.6	6.7	13.9	7.3	56.3		7.2	56.2	
Effective Green, g (s)	9.8	11.9		4.6	6.7	13.9	7.3	56.3		7.2	56.2	
Actuated g/C Ratio	0.10	0.12		0.05	0.07	0.14	0.07	0.56		0.07	0.56	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	175	207		83	126	303	127	1982		127	1974	
v/s Ratio Prot	c0.07	c0.09		0.03	0.05	0.02	0.05	c0.35		0.04	c0.39	
v/s Ratio Perm						0.03						
v/c Ratio	0.69	0.72		0.59	0.71	0.24	0.75	0.63		0.50	0.70	
Uniform Delay, d1	43.6	42.4		46.8	45.7	38.3	45.4	14.7		44.7	15.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.81	1.02		1.00	1.00	
Incremental Delay, d2	9.1	9.5		7.3	14.7	0.1	5.9	0.4		1.1	0.9	
Delay (s)	52.8	52.0		54.1	60.5	38.5	42.6	15.5		45.8	16.6	
Level of Service	D	D		D	E	D	D	B		D	B	
Approach Delay (s)		52.3			45.9			17.4			17.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

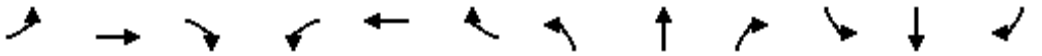


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	334	15	589	57	63	475	1052	19	1178
v/c Ratio	0.65	0.06	1.21	0.22	0.31	1.14	0.68	0.20	1.09
Control Delay	41.6	31.0	137.6	40.3	21.8	129.6	26.2	50.5	87.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	31.0	137.6	40.3	21.8	129.6	26.2	50.5	87.6
Queue Length 50th (ft)	179	9	~478	21	15	~183	251	12	~440
Queue Length 95th (ft)	#490	22	#312	73	42	#279	387	35	#564
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	516	517	485	296	479	416	1545	180	1083
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.03	1.21	0.19	0.13	1.14	0.68	0.11	1.09

Intersection Summary

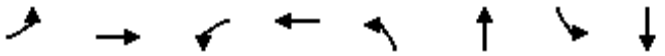
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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 (vph)	297	13	524	51	21	35	423	911	25	17	851	198
Future Volume (vph)	297	13	524	51	21	35	423	911	25	17	851	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1900	1580	1805	1668		3467	3523		1805	3430	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1900	1580	1805	1668		3467	3523		1805	3430	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	334	15	589	57	24	39	475	1024	28	19	956	222
RTOR Reduction (vph)	0	0	92	0	35	0	0	2	0	0	21	0
Lane Group Flow (vph)	334	15	497	57	28	0	475	1050	0	19	1157	0
Confl. Peds. (#/hr)	8		6	6		8	9		9	9		9
Confl. Bikes (#/hr)						1			3			1
Heavy Vehicles (%)	1%	0%	1%	0%	0%	3%	1%	2%	0%	0%	2%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	28.9	25.8	40.8	12.2	9.1		15.0	39.8		2.2	27.0	
Effective Green, g (s)	28.9	25.8	40.8	12.2	9.1		15.0	39.8		2.2	27.0	
Actuated g/C Ratio	0.29	0.26	0.41	0.12	0.09		0.15	0.40		0.02	0.27	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	516	490	644	220	151		520	1402		39	926	
v/s Ratio Prot	c0.19	0.01	c0.12	c0.03	0.02		c0.14	0.30		0.01	c0.34	
v/s Ratio Perm			0.20									
v/c Ratio	0.65	0.03	0.77	0.26	0.18		0.91	0.75		0.49	1.25	
Uniform Delay, d1	31.1	27.7	25.6	39.8	42.0		41.9	25.8		48.3	36.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.0	5.2	0.2	0.2		20.2	3.7		3.5	121.2	
Delay (s)	33.2	27.8	30.8	40.0	42.2		62.0	29.5		51.8	157.7	
Level of Service	C	C	C	D	D		E	C		D	F	
Approach Delay (s)		31.6			41.2			39.6			156.0	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	74.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



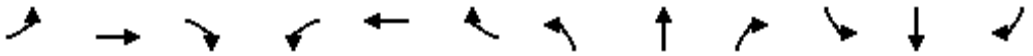
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	143	271	156	324	121	1354	182	1266
v/c Ratio	0.49	0.79	0.40	0.83	0.66	1.05	0.76	0.90
Control Delay	48.9	51.0	44.3	52.5	61.5	72.0	71.0	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	51.0	44.3	52.5	61.5	72.0	71.0	31.3
Queue Length 50th (ft)	45	151	47	181	74	~526	122	324
Queue Length 95th (ft)	74	222	79	268	#156	#722	m#213	#598
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	450	462	426	453	195	1289	250	1409
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	0.32	0.59	0.37	0.72	0.62	1.05	0.73	0.90

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.

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 (vph)	137	169	91	150	193	118	116	1105	195	175	1030	185
Future Volume (vph)	137	169	91	150	193	118	116	1105	195	175	1030	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1772		3502	1760		1805	3417		1787	3440	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	1772		3502	1760		1805	3417		1787	3440	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	143	176	95	156	201	123	121	1151	203	182	1073	193
RTOR Reduction (vph)	0	21	0	0	23	0	0	13	0	0	13	0
Lane Group Flow (vph)	143	250	0	156	301	0	121	1341	0	182	1253	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Confl. Bikes (#/hr)			1			4			5			2
Heavy Vehicles (%)	1%	0%	3%	0%	1%	1%	0%	3%	1%	1%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	8.5	18.2		11.1	20.8		10.1	37.4		13.3	40.6	
Effective Green, g (s)	8.5	18.2		11.1	20.8		10.1	37.4		13.3	40.6	
Actuated g/C Ratio	0.08	0.18		0.11	0.21		0.10	0.37		0.13	0.41	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	294	322		388	366		182	1277		237	1396	
v/s Ratio Prot	0.04	c0.14		0.04	c0.17		0.07	c0.39		c0.10	c0.36	
v/s Ratio Perm												
v/c Ratio	0.49	0.78		0.40	0.82		0.66	1.05		0.77	0.90	
Uniform Delay, d1	43.7	39.0		41.4	37.8		43.3	31.3		41.9	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.31	0.74	
Incremental Delay, d2	0.5	10.2		0.2	13.2		6.9	39.6		9.9	6.1	
Delay (s)	44.1	49.1		41.6	51.1		50.2	70.9		64.7	26.8	
Level of Service	D	D		D	D		D	E		E	C	
Approach Delay (s)		47.4			48.0			69.2			31.5	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	49.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	1422	1312	12
Future Vol, veh/h	0	2	0	1422	1312	12
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	0	2	0	1563	1442	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	728	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	370	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	370	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	370	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Control Delay (s)	-	14.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	274	279	11	11	9
Future Vol, veh/h	14	274	279	11	11	9
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	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	15	301	307	12	12	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	319	0	-	0	644	313
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1252	-	-	-	440	732
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	732	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1252	-	-	-	434	732
Mov Cap-2 Maneuver	-	-	-	-	434	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	732	-

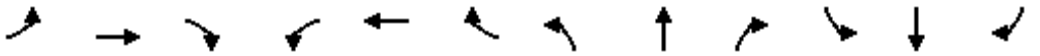
Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	531
HCM Lane V/C Ratio	0.012	-	-	-	0.041
HCM Control Delay (s)	7.9	0	-	-	12.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix H Total Operations (Proposed Zoning) Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	79	65	55	90	66	1176	82	79	1088	19
v/c Ratio	0.03	0.11	0.10	0.06	0.12	0.46	0.76	0.15	0.51	0.69	0.03
Control Delay	20.2	14.6	19.7	25.0	5.3	61.7	40.8	3.8	62.6	38.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	14.6	19.7	25.0	5.3	61.7	40.8	3.8	62.6	38.0	0.1
Queue Length 50th (ft)	7	15	26	22	0	50	300	0	59	268	0
Queue Length 95th (ft)	23	58	62	64	33	94	323	24	107	289	0
Internal Link Dist (ft)		600		638			842			586	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	705	732	651	880	770	168	2014	706	172	2014	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.11	0.10	0.06	0.12	0.39	0.58	0.12	0.46	0.54	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	29	45	61	52	85	62	1105	77	74	1023	18
Future Volume (vph)	16	29	45	61	52	85	62	1105	77	74	1023	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1802	1696		1752	1900	1546	1805	5036	1615	1752	5036	1568
Flt Permitted	0.72	1.00		0.65	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1368	1696		1199	1900	1546	1805	5036	1615	1752	5036	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	17	31	48	65	55	90	66	1176	82	79	1088	19
RTOR Reduction (vph)	0	29	0	0	0	51	0	0	57	0	0	13
Lane Group Flow (vph)	17	50	0	65	55	39	66	1176	25	79	1088	6
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	0%	0%	3%	3%	0%	3%	0%	3%	0%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	50.7	47.9		58.9	52.0	52.0	8.5	36.8	36.8	9.4	37.7	37.7
Effective Green, g (s)	50.7	47.9		58.9	52.0	52.0	8.5	36.8	36.8	9.4	37.7	37.7
Actuated g/C Ratio	0.42	0.40		0.49	0.43	0.43	0.07	0.31	0.31	0.08	0.31	0.31
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	588	676		620	823	669	127	1544	495	137	1582	492
v/s Ratio Prot	0.00	0.03		c0.01	0.03		0.04	c0.23		c0.05	0.22	
v/s Ratio Perm	0.01			c0.05		0.03			0.02			0.00
v/c Ratio	0.03	0.07		0.10	0.07	0.06	0.52	0.76	0.05	0.58	0.69	0.01
Uniform Delay, d1	20.2	22.3		16.2	19.8	19.8	53.8	37.6	29.3	53.4	36.0	28.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.2		0.1	0.0	0.0	3.6	2.0	0.0	5.8	1.0	0.0
Delay (s)	20.2	22.5		16.3	19.9	19.8	57.3	39.7	29.3	59.1	37.0	28.3
Level of Service	C	C		B	B	B	E	D	C	E	D	C
Approach Delay (s)		22.1			18.7			39.9			38.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	10	8	211	16	21
Future Vol, veh/h	212	10	8	211	16	21
Conflicting Peds, #/hr	0	3	3	0	3	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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	275	13	10	274	21	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	291	0	582	285
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1265	-	479	759
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1261	-	472	757
Mov Cap-2 Maneuver	-	-	-	-	472	-
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	749	-

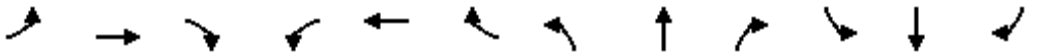
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	600	-	-	1261	-
HCM Lane V/C Ratio	0.08	-	-	0.008	-
HCM Control Delay (s)	11.5	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	177	126	27	61	55	58	958	28	854
v/c Ratio	0.75	0.34	0.27	0.43	0.18	0.42	0.48	0.29	0.45
Control Delay	60.5	16.5	51.6	51.8	1.3	44.1	14.6	52.7	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	16.5	51.6	51.8	1.3	44.1	14.6	52.7	17.4
Queue Length 50th (ft)	110	26	17	38	0	29	173	18	172
Queue Length 95th (ft)	171	68	44	74	0	m45	134	45	300
Internal Link Dist (ft)		318		1016			1126		227
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	350	466	100	169	315	152	2037	108	1952
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.27	0.27	0.36	0.17	0.38	0.47	0.26	0.44

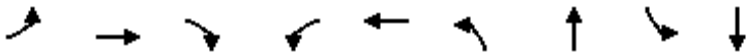
Intersection Summary

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 (vph)	163	42	74	25	56	51	53	856	26	26	712	74
Future Volume (vph)	163	42	74	25	56	51	53	856	26	26	712	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1719		1805	1845	1556	1805	3490		1752	3449	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1719		1805	1845	1556	1805	3490		1752	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	46	80	27	61	55	58	930	28	28	774	80
RTOR Reduction (vph)	0	66	0	0	0	49	0	2	0	0	7	0
Lane Group Flow (vph)	177	60	0	27	61	6	58	956	0	28	847	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	0%	0%	3%	3%	0%	3%	0%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	14.5	17.7		3.6	6.8	11.4	6.7	54.1		4.6	52.0	
Effective Green, g (s)	14.5	17.7		3.6	6.8	11.4	6.7	54.1		4.6	52.0	
Actuated g/C Ratio	0.14	0.18		0.04	0.07	0.11	0.07	0.54		0.05	0.52	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	254	304		64	125	177	120	1888		80	1793	
v/s Ratio Prot	c0.10	c0.03		0.01	c0.03	0.00	0.03	c0.27		0.02	c0.25	
v/s Ratio Perm						0.00						
v/c Ratio	0.70	0.20		0.42	0.49	0.04	0.48	0.51		0.35	0.47	
Uniform Delay, d1	40.7	35.1		47.2	44.9	39.4	45.0	14.5		46.3	15.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.85	0.88		1.00	1.00	
Incremental Delay, d2	6.6	0.1		1.6	1.1	0.0	0.8	0.7		1.0	0.1	
Delay (s)	47.2	35.2		48.8	46.0	39.4	39.1	13.5		47.2	15.3	
Level of Service	D	D		D	D	D	D	B		D	B	
Approach Delay (s)		42.2			44.0			15.0			16.4	
Approach LOS		D			D			B			B	

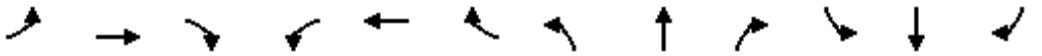
Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	143	118	218	166	234	538	950	103	829
v/c Ratio	0.71	0.39	0.37	0.79	0.73	0.95	0.64	0.71	0.68
Control Delay	62.0	38.8	7.1	69.6	44.9	71.0	26.2	69.6	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	38.8	7.1	69.6	44.9	71.0	26.2	69.6	30.8
Queue Length 50th (ft)	89	69	25	103	120	177	233	65	221
Queue Length 95th (ft)	121	84	33	139	135	#248	286	96	251
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	235	516	597	227	507	567	1478	177	1211
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.23	0.37	0.73	0.46	0.95	0.64	0.58	0.68

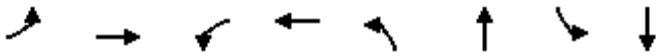
Intersection Summary

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 (vph)	106	87	161	123	96	77	398	516	187	76	460	153
Future Volume (vph)	106	87	161	123	96	77	398	516	187	76	460	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1551	1752	1711		3433	3341		1752	3360	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1551	1752	1711		3433	3341		1752	3360	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	143	118	218	166	130	104	538	697	253	103	622	207
RTOR Reduction (vph)	0	0	88	0	33	0	0	29	0	0	29	0
Lane Group Flow (vph)	143	118	130	166	201	0	538	921	0	103	800	0
Confl. Peds. (#/hr)	1		8	8		1	3		3	3		3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	11.4	16.3	32.8	11.9	16.8		16.5	43.5		8.3	35.3	
Effective Green, g (s)	11.4	16.3	32.8	11.9	16.8		16.5	43.5		8.3	35.3	
Actuated g/C Ratio	0.11	0.16	0.33	0.12	0.17		0.16	0.44		0.08	0.35	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	199	300	508	208	287		566	1453		145	1186	
v/s Ratio Prot	c0.08	c0.06	0.04	0.09	c0.12		c0.16	0.28		0.06	c0.24	
v/s Ratio Perm			0.04									
v/c Ratio	0.72	0.39	0.26	0.80	0.70		0.95	0.63		0.71	0.67	
Uniform Delay, d1	42.8	37.4	24.6	42.9	39.2		41.3	22.0		44.7	27.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.9	0.3	0.1	17.7	5.9		25.8	2.1		12.8	1.2	
Delay (s)	52.6	37.7	24.7	60.6	45.1		67.1	24.1		57.4	28.7	
Level of Service	D	D	C	E	D		E	C		E	C	
Approach Delay (s)		36.3			51.6			39.7			31.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	215	139	290	54	1084	97	996
v/c Ratio	0.56	0.60	0.48	0.82	0.41	0.70	0.61	0.62
Control Delay	49.6	38.6	49.1	51.4	52.9	27.7	73.4	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	38.6	49.1	51.4	52.9	27.7	73.4	18.8
Queue Length 50th (ft)	57	111	44	151	33	300	66	260
Queue Length 95th (ft)	78	148	63	193	62	356	101	234
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	408	455	374	445	175	1558	181	1605
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	0.44	0.47	0.37	0.65	0.31	0.70	0.54	0.62

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	114	56	110	116	113	43	765	92	77	696	91
Future Volume (vph)	143	114	56	110	116	113	43	765	92	77	696	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1751		3400	1711		1752	3439		1752	3434	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3400	1751		3400	1711		1752	3439		1752	3434	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	181	144	71	139	147	143	54	968	116	97	881	115
RTOR Reduction (vph)	0	19	0	0	38	0	0	8	0	0	8	0
Lane Group Flow (vph)	181	196	0	139	252	0	54	1076	0	97	988	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Confl. Bikes (#/hr)			2			2			2			1
Heavy Vehicles (%)	3%	3%	2%	3%	1%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	9.6	19.6		8.4	18.4		6.5	44.1		7.9	45.5	
Effective Green, g (s)	9.6	19.6		8.4	18.4		6.5	44.1		7.9	45.5	
Actuated g/C Ratio	0.10	0.20		0.08	0.18		0.06	0.44		0.08	0.46	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	326	343		285	314		113	1516		138	1562	
v/s Ratio Prot	c0.05	0.11		0.04	c0.15		0.03	c0.31		c0.06	0.29	
v/s Ratio Perm												
v/c Ratio	0.56	0.57		0.49	0.80		0.48	0.71		0.70	0.63	
Uniform Delay, d1	43.2	36.4		43.7	39.1		45.1	22.7		44.9	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.32	0.74	
Incremental Delay, d2	1.2	1.4		0.5	13.1		1.2	2.8		11.9	0.6	
Delay (s)	44.3	37.8		44.2	52.2		46.3	25.6		71.1	16.0	
Level of Service	D	D		D	D		D	C		E	B	
Approach Delay (s)		40.8			49.6			26.6			20.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	0	1070	803	10
Future Vol, veh/h	0	8	0	1070	803	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, %	0	0	0	3	3	0
Mvmt Flow	0	9	0	1163	873	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	442	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	569	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	569	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	569	-	-
HCM Lane V/C Ratio	-	0.015	-	-
HCM Control Delay (s)	-	11.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	234	175	8	45	34
Future Vol, veh/h	10	234	175	8	45	34
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, %	0	0	3	0	0	0
Mvmt Flow	11	254	190	9	49	37

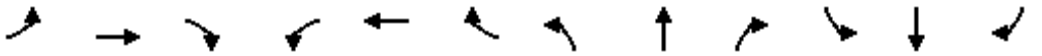
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	199	0	-	0	471	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	276	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1385	-	-	-	555	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1385	-	-	-	550	851
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1385	-	-	-	649
HCM Lane V/C Ratio	0.008	-	-	-	0.132
HCM Control Delay (s)	7.6	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	131	140	126	115	136	1782	74	192	1706	48
v/c Ratio	0.14	0.44	0.43	0.34	0.29	0.62	0.85	0.10	0.60	0.70	0.06
Control Delay	34.5	46.5	39.2	47.9	10.3	61.9	36.0	2.3	53.6	26.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	46.5	39.2	47.9	10.3	61.9	36.0	2.3	53.6	26.7	0.1
Queue Length 50th (ft)	28	85	88	90	0	101	418	0	139	345	0
Queue Length 95th (ft)	57	143	138	149	50	158	506	16	207	438	0
Internal Link Dist (ft)		642		766			1016			601	
Turn Bay Length (ft)	100		250		325	150		150	230		230
Base Capacity (vph)	368	488	326	527	516	229	2113	708	320	2444	804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.27	0.43	0.24	0.22	0.59	0.84	0.10	0.60	0.70	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	84	32	123	111	101	120	1568	65	169	1501	42
Future Volume (vph)	41	84	32	123	111	101	120	1568	65	169	1501	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1786		1803	1881	1542	1805	5036	1549	1787	5136	1580
Flt Permitted	0.68	1.00		0.49	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1285	1786		927	1881	1542	1805	5036	1549	1787	5136	1580
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	47	95	36	140	126	115	136	1782	74	192	1706	48
RTOR Reduction (vph)	0	13	0	0	0	93	0	0	43	0	0	25
Lane Group Flow (vph)	47	118	0	140	126	22	136	1782	31	192	1706	23
Confl. Peds. (#/hr)			2	2			1		1	1		1
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	1%	3%	0%	1%	3%	0%	3%	2%	1%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6			4			8
Actuated Green, G (s)	26.0	19.3		32.6	22.6	22.6	14.6	50.2	50.2	21.5	57.1	57.1
Effective Green, g (s)	26.0	19.3		32.6	22.6	22.6	14.6	50.2	50.2	21.5	57.1	57.1
Actuated g/C Ratio	0.22	0.16		0.27	0.19	0.19	0.12	0.42	0.42	0.18	0.48	0.48
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	307	287		324	354	290	219	2106	647	320	2443	751
v/s Ratio Prot	0.01	0.07		c0.04	0.07		0.08	c0.35		c0.11	c0.33	
v/s Ratio Perm	0.02			c0.08		0.01			0.02			0.01
v/c Ratio	0.15	0.41		0.43	0.36	0.07	0.62	0.85	0.05	0.60	0.70	0.03
Uniform Delay, d1	37.8	45.2		34.7	42.4	40.1	50.1	31.4	20.7	45.3	24.7	16.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	4.3		0.9	2.8	0.5	5.4	3.2	0.0	3.0	0.7	0.0
Delay (s)	38.0	49.5		35.6	45.2	40.6	55.5	34.6	20.7	48.3	25.4	16.7
Level of Service	D	D		D	D	D	E	C	C	D	C	B
Approach Delay (s)		46.5			40.3			35.5			27.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	305	14	23	278	12	13
Future Vol, veh/h	305	14	23	278	12	13
Conflicting Peds, #/hr	0	4	4	0	6	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	86	86	86	86	86	86
Heavy Vehicles, %	1	3	3	1	0	3
Mvmt Flow	355	16	27	323	14	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	375	0	750	367
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	-	-	4.13	-	6.4	6.23
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.327
Pot Cap-1 Maneuver	-	-	1178	-	382	676
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1174	-	367	673
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	670	-

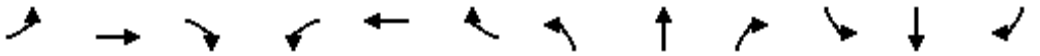
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	481	-	-	1174	-
HCM Lane V/C Ratio	0.06	-	-	0.023	-
HCM Control Delay (s)	13	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	135	198	49	92	231	104	1243	63	1390
v/c Ratio	0.73	0.75	0.52	0.64	0.61	0.66	0.62	0.50	0.72
Control Delay	65.3	47.9	65.9	65.1	15.7	40.3	16.0	57.4	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	47.9	65.9	65.1	15.7	40.3	16.0	57.4	21.0
Queue Length 50th (ft)	84	91	31	58	24	54	220	40	353
Queue Length 95th (ft)	145	161	#81	109	88	m54	m116	80	477
Internal Link Dist (ft)		206		1016			1126		238
Turn Bay Length (ft)	115		110		110	150		475	
Base Capacity (vph)	232	337	95	169	420	177	2003	177	1943
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.59	0.52	0.54	0.55	0.59	0.62	0.36	0.72

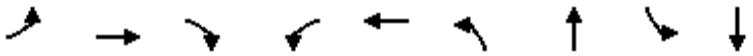
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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 (vph)	123	83	97	45	84	210	95	1102	29	57	1137	128
Future Volume (vph)	123	83	97	45	84	210	95	1102	29	57	1137	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1738		1805	1881	1604	1752	3522		1770	3511	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1738		1805	1881	1604	1752	3522		1770	3511	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	135	91	107	49	92	231	104	1211	32	63	1249	141
RTOR Reduction (vph)	0	45	0	0	0	159	0	2	0	0	8	0
Lane Group Flow (vph)	135	153	0	49	92	72	104	1241	0	63	1382	0
Confl. Peds. (#/hr)							3		4	4		3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	3%	2%	3%	2%	1%	1%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	3	7	4		3	8	
Permitted Phases						6						
Actuated Green, G (s)	10.4	12.7		4.3	6.6	13.8	9.0	55.8		7.2	54.0	
Effective Green, g (s)	10.4	12.7		4.3	6.6	13.8	9.0	55.8		7.2	54.0	
Actuated g/C Ratio	0.10	0.13		0.04	0.07	0.14	0.09	0.56		0.07	0.54	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	185	220		77	124	301	157	1965		127	1895	
v/s Ratio Prot	c0.08	c0.09		0.03	0.05	0.02	0.06	c0.35		0.04	c0.39	
v/s Ratio Perm						0.03						
v/c Ratio	0.73	0.70		0.64	0.74	0.24	0.66	0.63		0.50	0.73	
Uniform Delay, d1	43.4	41.8		47.1	45.9	38.4	44.0	15.1		44.7	17.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.75	0.94		1.00	1.00	
Incremental Delay, d2	11.5	7.5		12.0	18.7	0.1	2.6	0.5		1.1	1.2	
Delay (s)	55.0	49.4		59.1	64.6	38.6	35.6	14.7		45.8	18.7	
Level of Service	D	D		E	E	D	D	B		D	B	
Approach Delay (s)		51.6			47.7			16.4			19.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

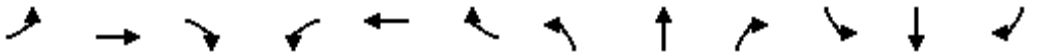


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	334	15	600	57	63	481	1061	19	1193
v/c Ratio	0.65	0.06	1.24	0.22	0.31	1.16	0.69	0.20	1.10
Control Delay	41.6	31.0	147.7	40.3	21.8	134.6	26.4	50.5	92.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	31.0	147.7	40.3	21.8	134.6	26.4	50.5	92.5
Queue Length 50th (ft)	179	9	~494	21	15	~187	254	12	~451
Queue Length 95th (ft)	#490	22	#311	73	42	#283	392	35	#574
Internal Link Dist (ft)		628			391		457		709
Turn Bay Length (ft)	240		130			205		150	
Base Capacity (vph)	516	517	484	296	479	416	1545	180	1083
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.03	1.24	0.19	0.13	1.16	0.69	0.11	1.10

Intersection Summary

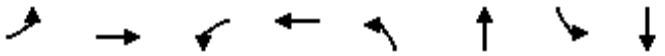
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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 (vph)	297	13	534	51	21	35	428	919	25	17	864	198
Future Volume (vph)	297	13	534	51	21	35	428	919	25	17	864	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1900	1580	1805	1668		3467	3523		1805	3431	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1900	1580	1805	1668		3467	3523		1805	3431	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	334	15	600	57	24	39	481	1033	28	19	971	222
RTOR Reduction (vph)	0	0	92	0	35	0	0	2	0	0	21	0
Lane Group Flow (vph)	334	15	508	57	28	0	481	1059	0	19	1172	0
Confl. Peds. (#/hr)	8		6	6		8	9		9	9		9
Confl. Bikes (#/hr)						1			3			1
Heavy Vehicles (%)	1%	0%	1%	0%	0%	3%	1%	2%	0%	0%	2%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	28.9	25.8	40.8	12.2	9.1		15.0	39.8		2.2	27.0	
Effective Green, g (s)	28.9	25.8	40.8	12.2	9.1		15.0	39.8		2.2	27.0	
Actuated g/C Ratio	0.29	0.26	0.41	0.12	0.09		0.15	0.40		0.02	0.27	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	1.5	0.5	2.0	2.0		0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	516	490	644	220	151		520	1402		39	926	
v/s Ratio Prot	c0.19	0.01	c0.12	c0.03	0.02		c0.14	0.30		0.01	c0.34	
v/s Ratio Perm			0.20									
v/c Ratio	0.65	0.03	0.79	0.26	0.18		0.93	0.76		0.49	1.27	
Uniform Delay, d1	31.1	27.7	25.8	39.8	42.0		41.9	25.9		48.3	36.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.0	5.9	0.2	0.2		22.1	3.8		3.5	128.1	
Delay (s)	33.2	27.8	31.8	40.0	42.2		64.0	29.7		51.8	164.6	
Level of Service	C	C	C	D	D		E	C		D	F	
Approach Delay (s)		32.2			41.2			40.4			162.8	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	77.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



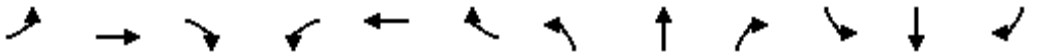
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	143	271	156	325	121	1362	183	1271
v/c Ratio	0.49	0.79	0.40	0.83	0.67	1.06	0.77	0.90
Control Delay	48.9	51.0	44.2	52.5	61.6	74.7	69.9	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	51.0	44.2	52.5	61.6	74.7	69.9	31.4
Queue Length 50th (ft)	45	151	47	181	74	~535	122	206
Queue Length 95th (ft)	74	222	79	269	#156	#727	m#198	#604
Internal Link Dist (ft)		1997		3145		1320		1126
Turn Bay Length (ft)	100		150		335		410	
Base Capacity (vph)	450	462	427	453	195	1287	250	1408
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	0.32	0.59	0.37	0.72	0.62	1.06	0.73	0.90

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.

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 (vph)	137	169	91	150	193	119	116	1113	195	176	1035	185
Future Volume (vph)	137	169	91	150	193	119	116	1113	195	176	1035	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	0.97	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1772		3502	1760		1805	3418		1787	3441	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3467	1772		3502	1760		1805	3418		1787	3441	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	143	176	95	156	201	124	121	1159	203	183	1078	193
RTOR Reduction (vph)	0	21	0	0	23	0	0	13	0	0	13	0
Lane Group Flow (vph)	143	250	0	156	302	0	121	1349	0	183	1258	0
Confl. Peds. (#/hr)	3		1	1		3	1		5	5		1
Confl. Bikes (#/hr)			1			4			5			2
Heavy Vehicles (%)	1%	0%	3%	0%	1%	1%	0%	3%	1%	1%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	8.5	18.2		11.2	20.9		10.1	37.2		13.4	40.5	
Effective Green, g (s)	8.5	18.2		11.2	20.9		10.1	37.2		13.4	40.5	
Actuated g/C Ratio	0.08	0.18		0.11	0.21		0.10	0.37		0.13	0.40	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	294	322		392	367		182	1271		239	1393	
v/s Ratio Prot	0.04	c0.14		0.04	c0.17		0.07	c0.39		c0.10	c0.37	
v/s Ratio Perm												
v/c Ratio	0.49	0.78		0.40	0.82		0.66	1.06		0.77	0.90	
Uniform Delay, d1	43.7	39.0		41.3	37.8		43.3	31.4		41.8	27.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.30	0.75	
Incremental Delay, d2	0.5	10.2		0.2	13.2		6.9	43.4		9.2	6.3	
Delay (s)	44.1	49.1		41.5	51.0		50.2	74.8		63.4	27.1	
Level of Service	D	D		D	D		D	E		E	C	
Approach Delay (s)		47.4			47.9			72.8			31.7	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	0	1435	1317	30
Future Vol, veh/h	0	5	0	1435	1317	30
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	0	5	0	1577	1447	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	740	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	364	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	364	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	364	-	-
HCM Lane V/C Ratio	-	0.015	-	-
HCM Control Delay (s)	-	15	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	274	279	27	28	22
Future Vol, veh/h	36	274	279	27	28	22
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	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	40	301	307	30	31	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	337	0	-	0	703	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1234	-	-	-	407	724
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1234	-	-	-	391	724
Mov Cap-2 Maneuver	-	-	-	-	391	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1234	-	-	-	490
HCM Lane V/C Ratio	0.032	-	-	-	0.112
HCM Control Delay (s)	8	0	-	-	13.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Appendix I WSDOT Turn Lane Criteria

Exhibit 1310-7 Left-Turn Storage Guidelines: Two-Lane, Unsignalized

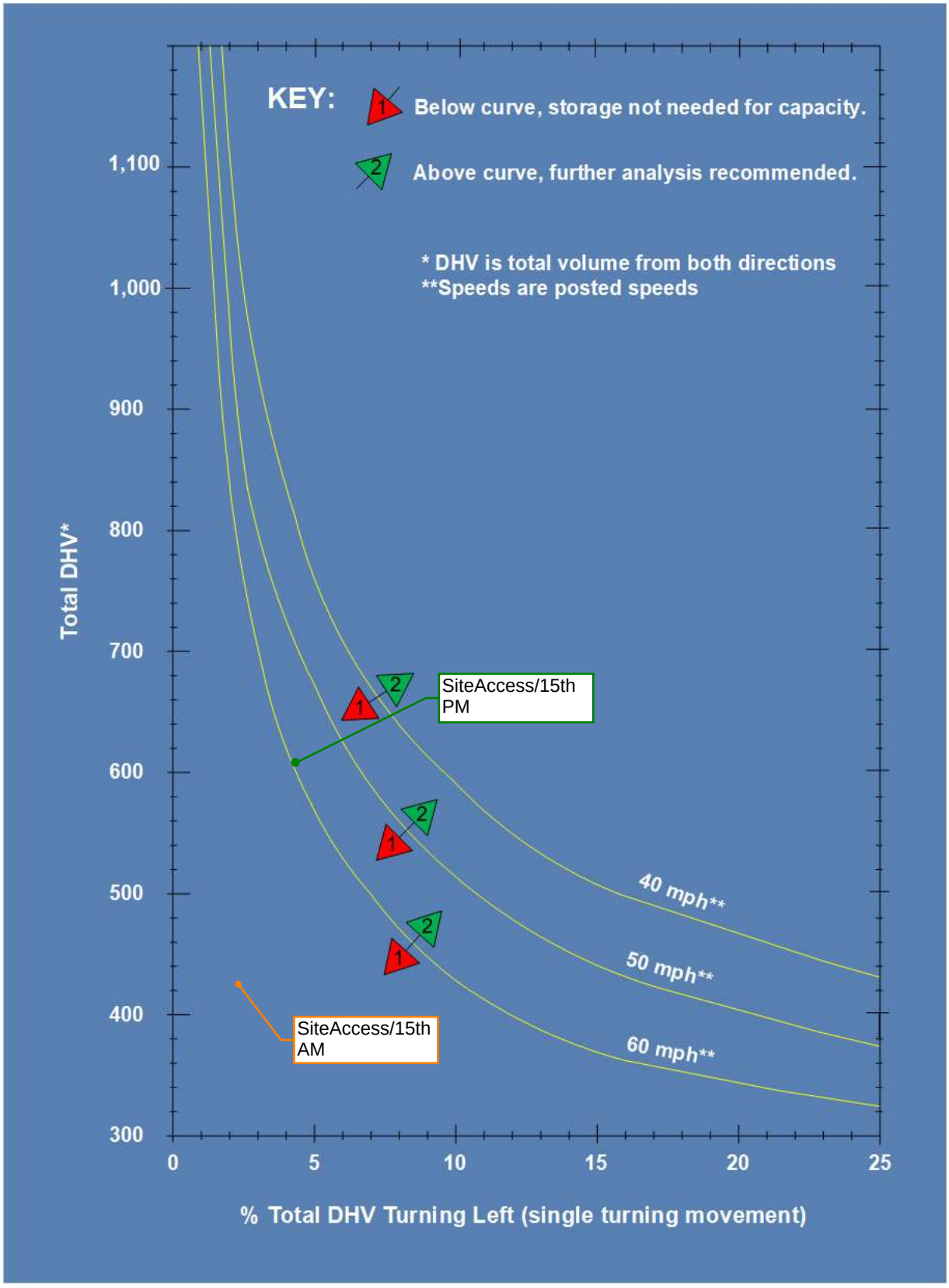
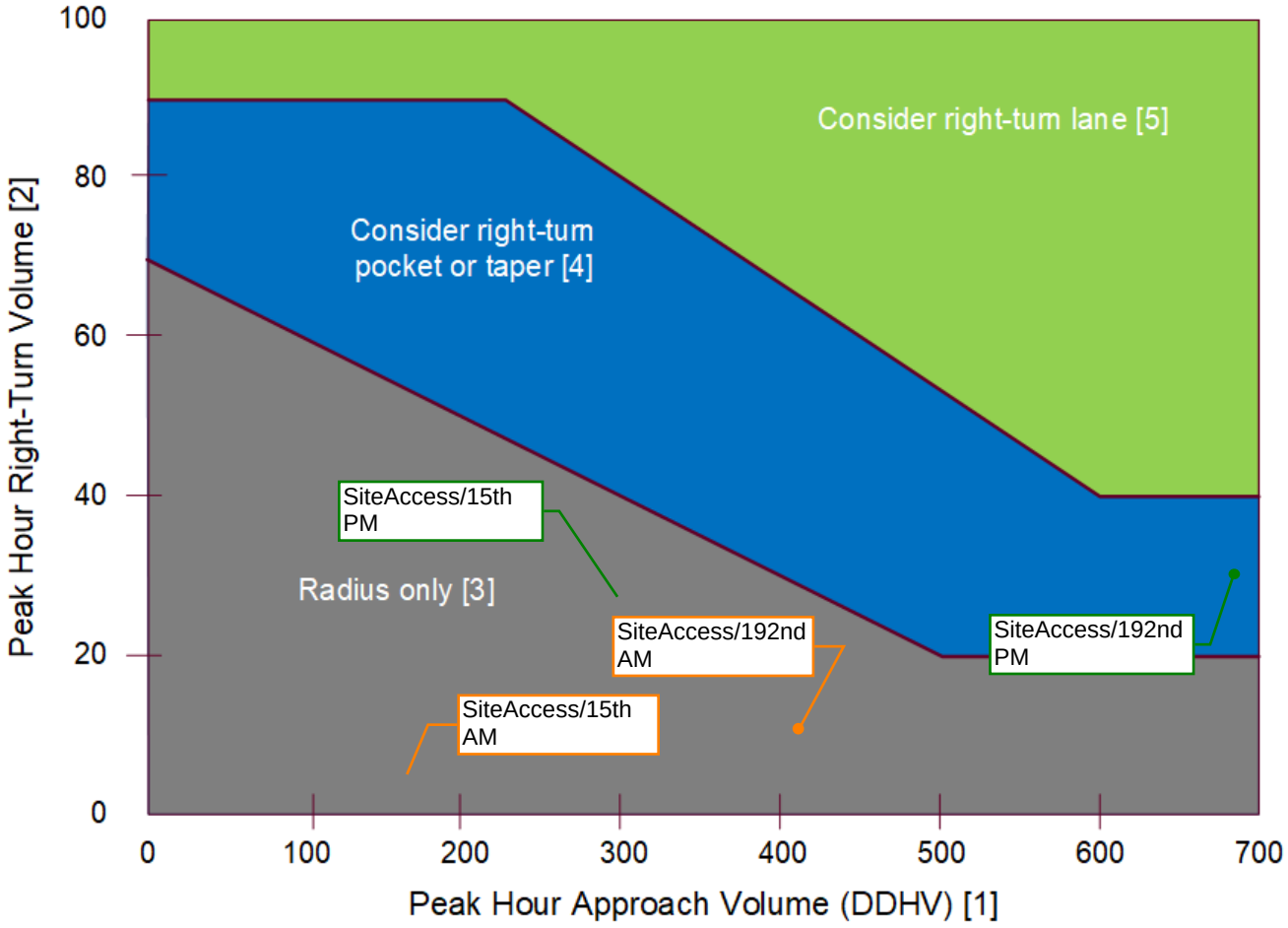


Exhibit 1310-19 Right-Turn Lane Guidelines



Notes:

[1] For two-lane highways, use the peak hour DDHV (through + right-turn). For multilane, highways (posted speed 45 mph or above), use the right-lane peak hour approach volume (through + right-turn).

[2] When all three of the following conditions are met, reduce the right-turn DDHV by 20:
- The posted speed is 45 mph or below
- The right-turn volume is greater than 40 VPH
- The peak hour approach volume (DDHV) is less than 300 VPH

[3] For right-turn corner design, see Exhibit 1310-6.

[4] For right-turn pocket or taper design, see Exhibit 1310-20.

[5] For right-turn lane design, see Exhibit 1310-21.