South Sound Commerce Center

Tumwater, WA

Transportation Impact Analysis

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FINDINGS/CONCLUSIONS

This traffic impact analysis (TIA) has been prepared for the South Sound Commerce Center project located in the City of Tumwater, WA. The TIA was completed based on scoping review comments received via email from City of Tumwater staff through coordination with both Thurston County and WSDOT.

Project Proposal. The proposed South Sound Commerce Center site is located on the west side of Center Street SW south of 78th Avenue SW. The current project proposal includes the development of one (1) building totaling up to 480,000 square feet (SF) of industrial use on a site that is currently vacant.

Vehicular access is proposed at two (2) locations: two (2) new full access (allowing all turning movements) driveways on Center Street SW.

Trip Generation. The proposed project is estimated to generate 1,524 new weekday daily trips with 208 new trips (159 in, 49 out) occurring during the AM peak hour and 246 new trips (74 in, 172 out) occurring during the PM peak hour.

Intersection Level of Service (LOS). The LOS analyses documented in this report were assessed during the weekday AM and PM peak hours at 12 off-site intersections. Based on the results of the analysis, each of the off-site study intersections are anticipated to operate at acceptable levels during the weekday AM and PM peak hours with the following exceptions:

Intersections Located on City of Tumwater Strategy Corridors:

The following intersection is anticipated to operate at LOS F without or with the proposed project during the weekday AM peak hour but is located on a City of Tumwater Strategy Corridor and is therefore exempt from LOS standards:

4. Linderson Way SW/Center St SW/Tumwater Blvd SW

Intersections with Future Planned Improvements:

The following intersections are anticipated to operate at LOS F without or with the proposed project during the AM or PM peak hours and include future planned improvements that are expected to result in acceptable LOS. Mitigation at the following two intersections will be payment of a SEPA mitigation fee developed by the City of Tumwater at the I-5/Tumwater Blvd interchange:

1. I-5 SB Ramps/Tumwater Blvd
2. I-5 NB Ramps/Tumwater Blvd

Site Access Evaluation. Based on the results of the analysis, the individual movements entering and exiting the site at each of the proposed stop-controlled site access locations on Center Street SW are expected to operate at acceptable levels (LOS D or better) with minimal queuing during both the weekday AM and PM peak hours with the proposed project.

Mitigation. The following measures have been identified to mitigate the transportation impacts of the proposed project.

City of Tumwater Transportation Impact Fees

Transportation mitigation required by the City of Tumwater is payment of a transportation impact fee. As of the date of this study, the adopted City of Tumwater 2022 impact fee schedule identifies a fee of $4.33 per square foot (SF) for manufacturing use and $1.97 per SF for warehousing use. Based on an assumed even mix of manufacturing and warehousing, the estimated transportation impact fee is $1,512,000 ($4.33 x 240,000 SF manufacturing + $1.97 x 240,000 SF warehousing). Final transportation impact fees will be determined by the City of Tumwater prior to development approval.

I-5/Tumwater Blvd Interchange

The City of Tumwater has developed a SEPA mitigation fee for developments to mitigate their impacts at the I-5/Tumwater Blvd interchange by paying a per trip fee to fund future improvements at the interchange. As documented in the City's Preliminary Site Plan Review Letter (dated October 21, 2021), the fee assessed is $4,219 per new AM peak hour trip. The estimated SEPA mitigation fee is $438,776 ($4,219 X 104 new AM peak hour trips impacting the interchange).

Thurston County Pro-Rata Mitigation

The County requests transportation mitigation for new development in adjacent cities that impact County-planned transportation improvements identified in the County 6-year TIP. There is one (1) County-planned transportation project that will be impacted by traffic generated by the proposed project (Project #61325 – Littlerock Rd Bridge and 113th Intersection). A pro-rata transportation mitigation cost of $471 has been identified to help fund this project.

INTRODUCTION

This transportation impact analysis (TIA) documents traffic impacts associated with the South Sound Commerce Center project. The site is located on the west side of Center Street SW south of 78th Avenue SW in the City of Tumwater. A site vicinity map is provided in Figure 1.

Project Description

Buildout of the proposed South Sound Commerce Center project would include the development of one (1) building totaling up to 480,000 square feet (SF) of industrial use on a site that is currently vacant. Because the tenant for this building has not been identified, an even mix of manufacturing and warehousing was assumed for the purposes of this analysis.

Vehicular access is proposed at two (2) locations: two (2) new full access (allowing all turning movements) driveways on Center Street SW.

For the purposes of this analysis, buildout is assumed to be 2023. A preliminary site plan is shown in Figure 2.

Traffic Scoping & Study Area

The scope of work for this TIA was established in coordination with City of Tumwater, Thurston County, and the Washington State Department of Transportation (WSDOT). The following 12 off-site study intersections were identified for evaluation for project buildout:

1. I-5 SB Ramps/Tumwater Blvd SW (AM and PM peak hours)
2. I-5 NB Ramps/Tumwater Blvd SW (AM and PM peak hours)
3. Harper Street SW/Tumwater Blvd SW (AM and PM peak hours)
4. Linderson Way SW/Center St SW/Tumwater Blvd SW (AM and PM peak hours)
5. Tumwater Blvd SW/New Market St SW (AM and PM peak hours)
6. Tumwater Blvd SE/Capitol Blvd SE (AM and PM peak hours)
7. 75th Ave SW/Center Street SW (PM peak hour only)
8. 76th Ave SW/Center Street SW (PM peak hour only)
9. 78th Ave SW/Center Street SW (PM peak hour only)
10. 83rd Ave SW/Center Street SW (AM and PM peak hours)
11. Tumwater Blvd SE/Henderson Blvd SE (AM and PM peak hours)
12. Yelm Hwy SE/Henderson Blvd SE (PM peak hour only)

Project Approach

To analyze the traffic impacts of the project, the following tasks were undertaken:

- Assessment of existing conditions through field reconnaissance and review of existing planning documents.
- Estimation of weekday vehicular AM peak hour, PM peak hour, and daily trips generated by the development.

- Evaluation of weekday AM and PM peak hour level of service (LOS) at 12 off-site study intersections.
- Review of City of Tumwater, Thurston County, and WSDOT planning documents to evaluate future road improvement plans in the project study area.
- Evaluation of anticipated weekday AM and PM peak hour operations at each of the proposed site access locations, including LOS and queuing.
- Estimated transportation impact fees to City of Tumwater and Thurston County.

Primary Data and Information Sources

- Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition, 2021.
- *Highway Capacity Manual (HCM 6th Edition)*, 2016.
- 2021 weekday AM and PM peak hour traffic counts, All Traffic Data (ATD).
- I-5 Ramps at Tumwater Boulevard – Intersection Alternatives Analysis (SCJ), 2021.
- City of Tumwater *2021-2026 Six Year Transportation Improvement Program (TIP)*.
- City of Tumwater *2020-2025 Capital Facilities Plan (CFP)*.
- Thurston County *2022-2027 Six Year TIP*.
- WSDOT *2022-2025 Statewide Transportation Improvement Program (STIP)*.
- City of Tumwater *2036 Transportation Master Plan*.

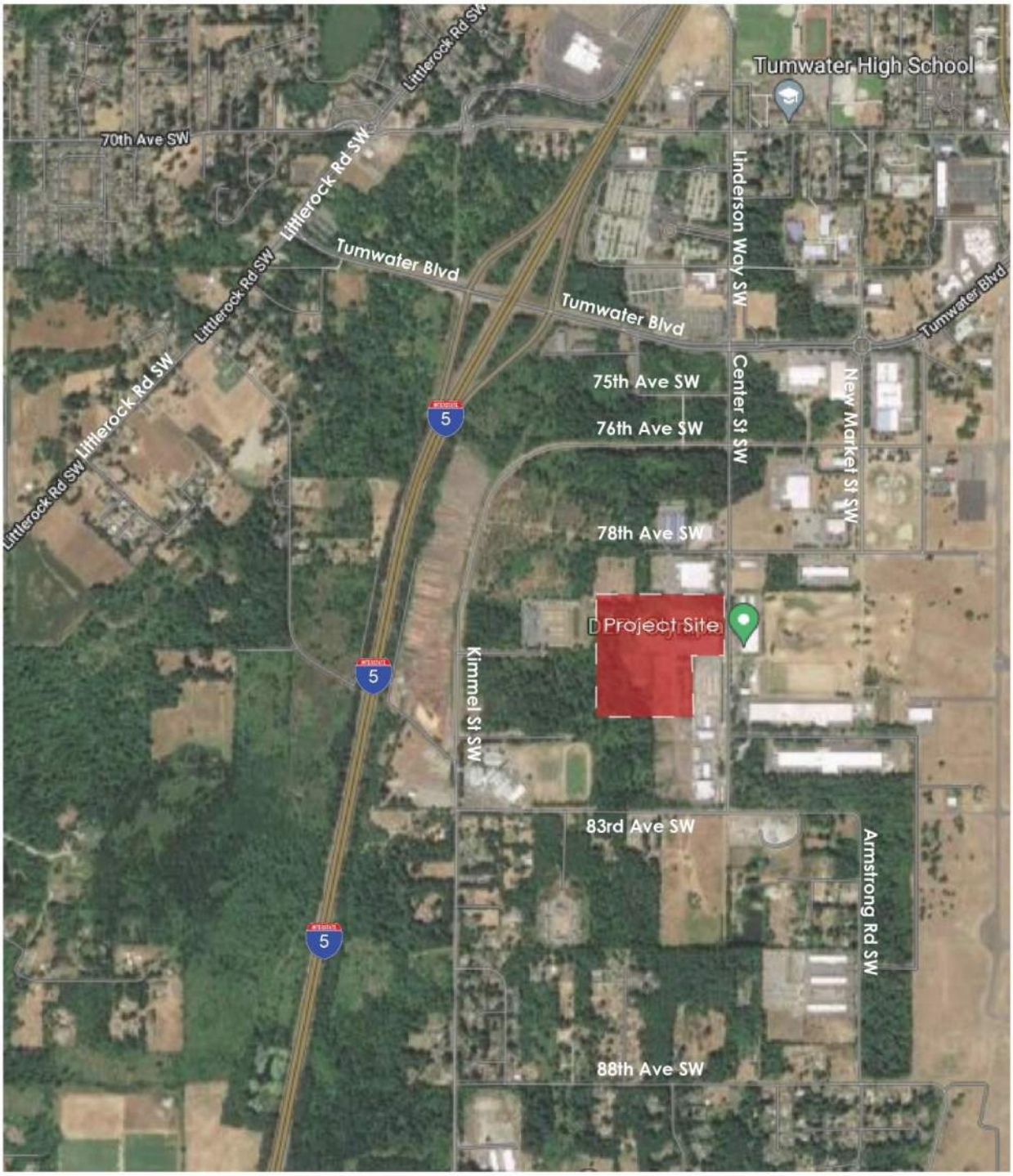


Figure 1: Project Site Vicinity

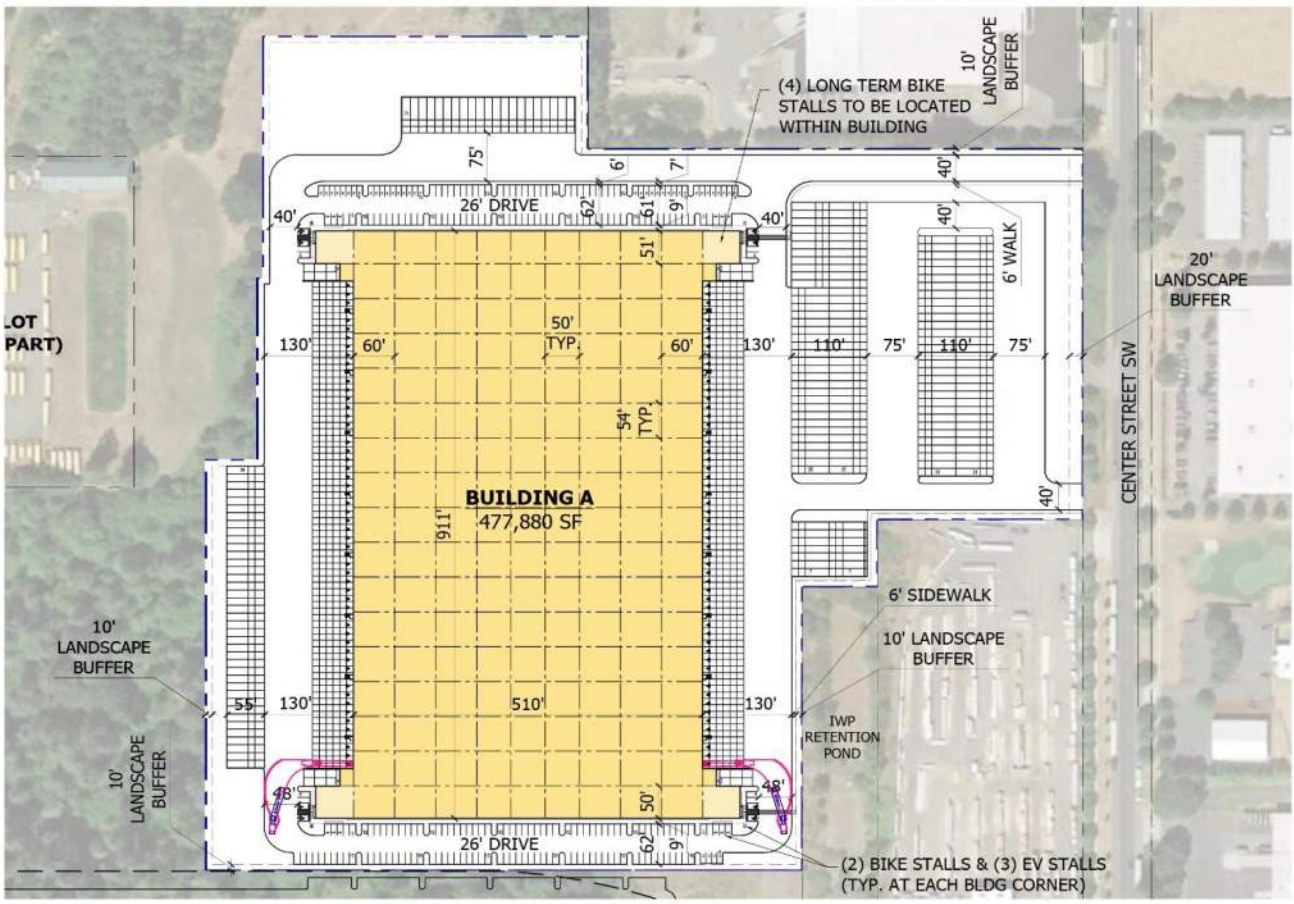


Figure 2: Preliminary Site Plan

EXISTING CONDITIONS

This section describes existing transportation system conditions in the study area. Existing conditions described include an inventory of existing roadways, public transportation services, non-motorized transportation facilities, existing traffic volumes, and intersection levels of service (LOS).

Roadway Network

The existing street characteristics in the vicinity of the site are described below in Table 1.

Table 1
Existing Roadway Network Summary – Project Site Vicinity

Roadway	Orientation	Classification	Speed Limit	Number of Travel Lanes	Street Parking	Sidewalks	Bicycle Facilities
Center Street SW	North-South	Collector	35 mph	2	None	None	Paved Shoulders
Tumwater Blvd SW	East-West	Arterial	35 mph	4	None	Both Sides	Both Sides

Transit Service

Transit service to and from the project vicinity is provided by Intercity Transit. The closest bus stop is located on Linderson Way SW north of Tumwater Blvd. The bus stops provide access to Intercity Transit routes 12 and 13 which provide service between Tumwater (west and east) and the Olympia Transit Center throughout the day with approximately 30-minute headways.

Non-motorized Transportation Facilities

Non-motorized transportation facilities in the project vicinity include paved shoulders on Center Street SW. Crosswalks with pedestrian push buttons are provided on all legs at the Center Street SW/Tumwater Blvd signalized intersection. Pedestrian activity is minimal in the project vicinity.

Traffic Volumes

Existing weekday AM and PM peak hour traffic volumes at the 12 off-site study intersections were based on counts conducted by All Traffic Data in 2021. Note that the traffic volumes collected in 2021 were adjusted to account for the ongoing COVID-19 pandemic based on a comparison to available historic traffic counts, consistent with the methodology documented in the *I-5 Ramps at Tumwater Boulevard – Intersection Alternatives Analysis* prepared by SCJ Alliance dated January 18, 2021. The AM peak hour represents the highest one-hour time period between 7:00 and 9:00 AM. The PM peak hour represents the highest one-hour time period between 4:00 and 6:00 PM. Figures 3-4 illustrate the estimated 2021 existing weekday AM and PM peak hour traffic volumes at the study intersections. Appendix A includes the existing AM and PM peak hour traffic count sheets.

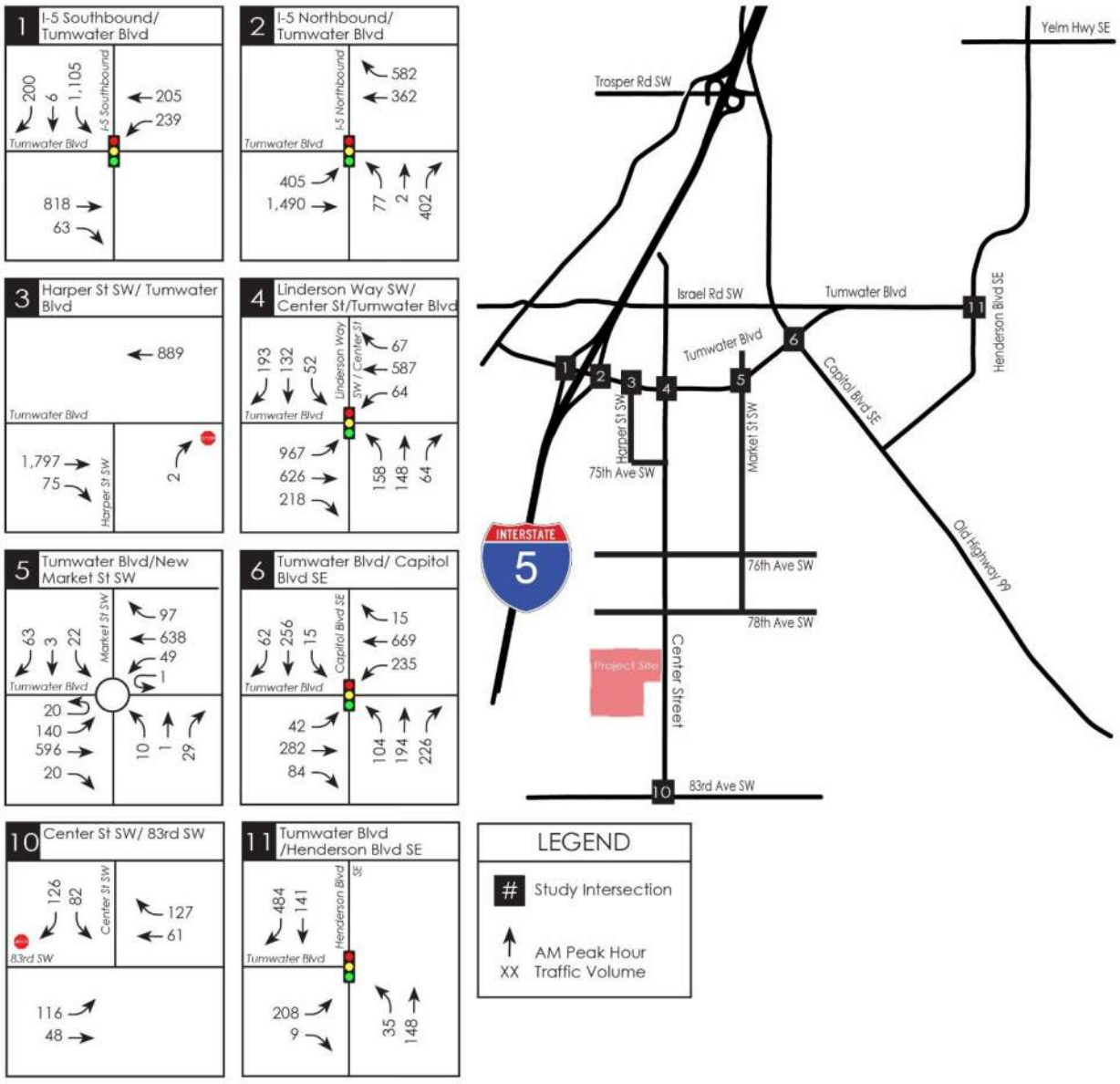


Figure 3: 2021 AM Peak Hour Existing Weekday Peak Hour Traffic Volumes

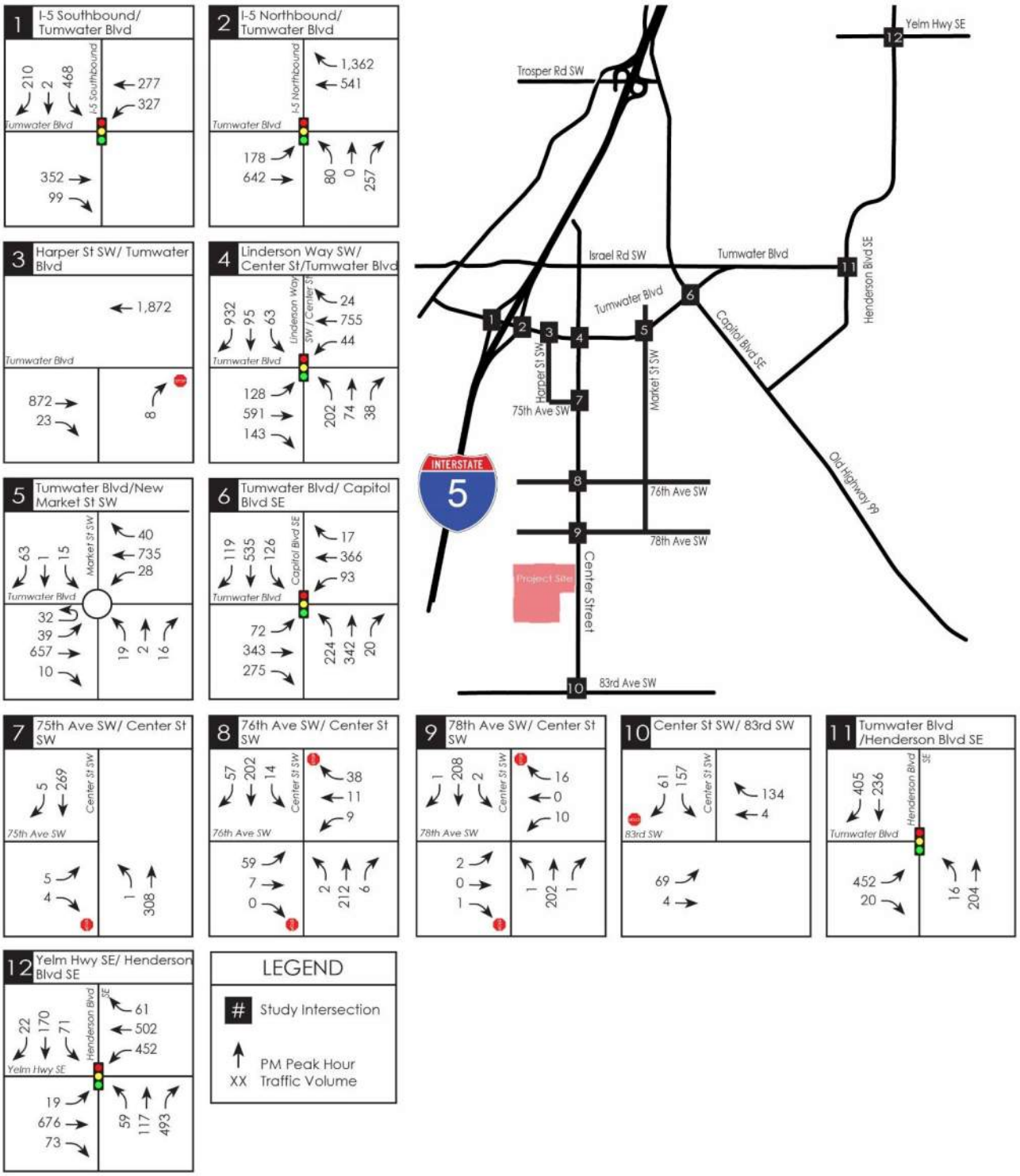


Figure 4: 2021 PM Peak Hour Existing Weekday Peak Hour Traffic Volumes

Intersection Levels of Service

LOS generally refers to the degree of congestion on a roadway or intersection. It is a measure of vehicle operating speed, travel time, travel delays, and driving comfort. A letter scale from A to F generally describes intersection LOS. At signalized intersections, LOS A represents free-flow conditions (motorists experience little or no delays), and LOS F represents forced-flow conditions where motorists experience an average delay in excess of 80 seconds per vehicle.

The LOS reported for signalized intersections represents the average control delay (sec/veh) and can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only).

The LOS reported at stop-controlled intersections is based on the average control delay and can be reported for each controlled minor approach, controlled minor lane group, and controlled major-street movement (and for the overall intersection at all-way stop controlled intersections. Additional v/c ratio criteria apply to lane group or movement LOS only). Table 2 outlines the current HCM (6th Edition) LOS criteria for signalized and stop-controlled intersections based on these methodologies.

Table 2
LOS Criteria for Signalized and Stop-Controlled Intersections[1]

SIGNALIZED INTERSECTIONS			UNSIGNALIZED INTERSECTIONS		
	LOS by Volume-to Capacity (V/C) Ratio[2]			LOS by Volume-to Capacity (V/C) Ratio[3]	
Control Delay (sec/veh)	≤ 1.0	> 1.0	Control Delay (sec/veh)	≤ 1.0	> 1.0
≤ 10	A	F	≤ 10	A	F
> 10 to ≤ 20	B	F	> 10 to ≤ 15	B	F
> 20 to ≤ 35	C	F	> 15 to ≤ 25	C	F
> 35 to ≤ 55	D	F	> 25 to ≤ 35	D	F
> 55 to ≤ 80	E	F	> 35 to ≤ 50	E	F
> 80	F	F	> 50	F	F

[1] Source: Highway Capacity Manual (6th Edition), Transportation Research Board, 2016.
[2] For approach-based and intersection-wide assessments at signals, LOS is defined solely by control delay.
[3] For two-way stop controlled intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole at two-way stop controlled intersections. For approach-based and intersection-wide assessments at all-way stop controlled intersections, LOS is solely defined by control delay.

Level of service calculations for the 12 off-site study intersections were based on methodology and procedures outlined in the current HCM (6th Edition) using Synchro 10 (signals and stop-controlled intersections) and Sidra (roundabouts) traffic analysis software. Existing signal timing was provided by the City of Tumwater and WSDOT. The existing LOS results are summarized in Table 3. Detailed LOS summary worksheets are provided in Appendix B.

The City of Tumwater, Thurston County, and WSDOT intersection LOS standard is LOS D. Note that intersections located on City of Tumwater *Strategy Corridors* are exempt from LOS standards. Per the City of Tumwater's *Comprehensive Transportation Plan*, vehicle delay is not the overriding consideration on the defined Strategy Corridors. The City will work with developers to enhance multimodal mobility where practical and may choose to permit development even if it exceeds LOS thresholds because that development supports broader City objectives about growth and urban

form. Extra emphasis is placed on the operational efficiency and completeness of the multimodal network.

Table 3
2021 Existing Weekday Peak Hour LOS Summary

Study Intersection / Movement	AM Peak Hour LOS	AM Peak Hour Delay (sec)	PM Peak Hour LOS	PM Peak Hour Delay (sec)
Signalized Intersections:				
1. I-5 SB Ramps/Tumwater Blvd SW	E	57.4	C	21.7
4. Linderson Way SW/Center St/Tumwater Blvd SW[1]	F	93.2	C	25.0
6. Capitol Blvd SE/Tumwater Blvd SW[1]	C	29.0	C	28.2
11. Henderson Blvd SE/Tumwater Blvd SE[1]	C	20.1	C	28.6
12. Henderson Blvd SE/Yelm Hwy SE	-	-	C	26.6
Two-Way Stop Controlled Intersections:				
2. I-5 NB Ramps/Tumwater Blvd SE				
Northbound Left-Turn	F	> 300	F	> 300
Northbound Right-Turn	F	217.3	C	16.1
Eastbound Left-Turn	A	10.0	A	9.7
3. Harper Street SW/Tumwater Blvd SW[1]				
Northbound Right-Turn	C	23.1	B	12.0
7. Center Street SW/75th Avenue SW				
Northbound Left-Turn	-	-	A	7.8
Eastbound Approach	-	-	B	12.3
8. Center Street SW/76th Avenue SW				
Northbound Left-Turn	-	-	A	8.4
Eastbound Approach	-	-	C	15.3
Westbound Approach	-	-	B	11.6
Southbound Left-Turn	-	-	A	8.4
9. Center Street SW/78th Avenue SW				
Northbound Left-Turn	-	-	A	7.7
Eastbound Approach	-	-	B	11.6
Westbound Approach	-	-	A	10.8
Southbound Left-Turn	-	-	A	7.7
10. Center Street SW/83rd Avenue SW				
Eastbound Left-Turn	A	8.4	A	7.8
Southbound Approach	C	17.8	B	12.7
Roundabout Intersections:				
5. New Market St SW/Tumwater Blvd SW[1]	A	5.0	A	4.2

Note:
1. Intersection located on City of Tumwater Strategy Corridor.

As shown in Table 3, each of the study intersections currently operate at LOS D or better during the weekday AM and PM peak hours with the following exceptions:

- The I-5 SB Ramps/Tumwater Blvd SW intersection (#1) currently operates at LOS E during the weekday AM peak hour.
- The northbound approach at the I-5 NB Ramps/Tumwater Blvd SW intersection (#2) currently operates at LOS F during both the weekday AM and PM peak hours.

- The Linderson Way SW/Center St/Tumwater Blvd SW (#4) currently operates at LOS F during the weekday AM peak hour.

Collision History & Safety Performance

Crash history at the study intersections were analyzed for the five-year period from 2016 to 2020. Crash data was provided by WSDOT. Summaries of the total and yearly average crashes during this period are provided in Table 4. Summaries of crashes by type over the five-year period are provided in Table 5.

Table 4
Crash Data Summary by Year, January 1, 2016 to December 31, 2020

Intersection	2016	2017	2018	2019	2020	Five-Year Total Crashes	Average Annual Crash Frequency
Intersections							
1. I-5 SB/Tumwater Blvd	12	9	8	6	4	39	7.80
2. I-5 NB/Tumwater Blvd	2	8	2	2	1	15	3.00
3. Harper St SW/Tumwater Blvd	1	0	3	1	0	5	1.00
4. Center St/Tumwater Blvd	2	4	2	3	3	14	2.80
5. Market St SW/Tumwater Blvd	3	3	4	5	3	18	3.60
6. Capitol Blvd SE/Tumwater Blvd	5	4	8	5	1	23	4.60
7. Center St/75th Ave SW	0	0	0	0	0	0	0.00
8. Center St/76th Ave SW	3	3	1	3	0	10	2.00
9. Center St/78th Ave SW	0	0	0	1	0	1	0.20
10. Center St/83rd Ave SW	2	1	2	1	0	6	1.20
11. Henderson Blvd SE/Tumwater Blvd	1	6	0	5	4	16	3.20
12. Henderson Blvd SE/Yelm Hwy SE	11	6	10	9	12	48	9.60

Source: WSDOT Crash Data.

Table 5
Crash Data Summary by Type, January 1, 2016 to December 31, 2020

Intersection	Crash Type								
	Angle (T)	Angle (Left/Right)	Rear End	Head-on	Ped/Bike	Parked Veh/Fixed Object	Other	Sideswipe	Five-Year Total Crashes
Intersections									
1. I-5 SB/Tumwater Blvd	12	5	10	0	1	1	3	7	39
2. I-5 NB/Tumwater Blvd	0	1	4	0	0	9	1	0	15
3. Harper St SW/Tumwater Blvd	0	0	3	0	0	1	0	1	5
4. Center St/Tumwater Blvd	4	2	6	0	0	1	1	0	14
5. Market St SW/Tumwater Blvd	1	0	5	0	0	8	1	3	18
6. Capitol Blvd SE/Tumwater Blvd	2	1	13	0	0	0	0	7	23
7. Center St/75th Ave SW	0	0	0	0	0	0	0	0	0
8. Center St/76th Ave SW	2	2	1	0	0	0	0	0	10
9. Center St/78th Ave SW	1	0	0	0	0	0	0	0	1
10. Center St/83rd Ave SW	4	0	0	0	0	1	1	0	6
11. Henderson Blvd SE/Tumwater Blvd	2	1	9	0	0	4	0	0	16
12. Henderson Blvd SE/Yelm Hwy SE	5	15	20	1	1	2	1	3	48

Source: WSDOT Crash Data.

WSDOT Safety Performance

For each of the two (2) study intersections under WSDOT jurisdiction, a quantitative safety analysis of existing conditions was completed. The following study intersections were included in this analysis:

1. I-5 SB Ramps/Tumwater Blvd
2. I-5 NB Ramps/Tumwater Blvd

Safety performance calculations for the two study intersections were based on methodology and procedures outlined in the *Highway Safety Manual (1st Edition)* using spreadsheet tools provided by the Federal Highway Administration (FHWA). These spreadsheets utilize statistical safety performance functions (SPFs) to evaluate the safety performance of intersections and road segments based on the geometric features, traffic volumes, and context of the site. The spreadsheets yield predicted, observed, and expected crash rates which can be used to gauge the safety performance of a site.

- Predicted average crash frequency is the calculated rate based on the geometric design, traffic control features, and traffic volume of a site.

- Observed crash frequency is the observed average crash rate based on historical crash data at the site.
- The expected crash frequency is calculated using Empirical-Bayesian statistical methodologies to combine the observed and predicted crash rates for a site.

The predicted, observed, and expected safety performance of the study intersections under existing conditions is summarized in Table 6. The safety analysis worksheets used in this exercise are included in Appendix C.

Table 6
Summary of Existing Conditions Safety Analysis

	Annual Crash Rates		
Study Intersection/Segment	Predicted	Observed	Expected
Intersections			
1) I-5 SB Ramps/Tumwater Blvd			
Fatal & Injury	0.8	2.2	1.2
Property Damage Only	1.4	5.6	3.5
Total	2.2	7.8	4.7
2) I-5 NB Ramps/Tumwater Blvd			
Fatal & Injury	0.8	0.6	0.7
Property Damage Only	2.0	2.4	2.1
Total	2.8	3.0	2.8

1) I-5 SB Ramps/Tumwater Blvd

Under existing conditions, the observed crash rate is higher than the predicted crash rate at the I-5 SB Ramps/Tumwater Blvd intersection.

2) I-5 NB Ramps/Tumwater Blvd

Under existing conditions, the observed crash rate is higher than the predicted crash rate at the I-5 NB Ramps/Tumwater Blvd intersection.

The City of Tumwater and WSDOT's plan to install roundabouts at these intersections is anticipated to improve their safety performance. In particular, the rate of fatal and injury crashes is expected to be substantially reduced. The anticipated reduction in crash rate can be quantified using Crash Modification Factors (CMFs) taken from WSDOT's CMF Shortlist. CMFs are crash rate adjustment factors that allow the user to quantify the impact of a given improvement on safety performance. CMFs can be used to approximate the anticipated change in crash rates caused by the implementation of an improvement such as converting a two-way stop controlled (TWSC) intersection into a roundabout (RAB). These adjustments are applied by multiplying an annual average crash rate by the appropriate CMF for a given improvement. The conversion of the existing I-5 SB Ramps/Tumwater Blvd intersection from a signal to a multilane roundabout is anticipated to reduce the average annual rate of fatal and injury crashes by 66% (CMF = 0.34). At the I-5 NB Ramps/Tumwater Blvd intersection, installing a multilane roundabout in place of the existing two-way stop-controlled intersection is anticipated to reduce the average annual rate of fatal and injury crashes by 68% (CMF = 0.32).

FUTURE CONDITIONS

The following section of the report describes the traffic impacts of the proposed project on the surrounding arterial network and identified study intersections in the project study area.

The analysis of traffic impacts includes project trip generation, distribution and assignment of project trips, and LOS evaluation at study intersections and the proposed site access locations. The analysis was conducted during the weekday AM and PM peak hours.

Project Trip Generation

The trip generation estimates for the proposed South Sound Commerce Center project (One building totaling up to 480,000 SF) were based on methodology documented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual,* 11th Edition. Because the tenant for this building has not been identified, an even mix of land use code (LUC) 140 (Manufacturing) and 150 (Warehousing) was assumed to estimate trip generation for the site.

Table 7 summarizes the new weekday daily, AM peak hour, and PM peak hour trip generation estimates associated with the proposed project. Detailed trip generation estimates are provided in Appendix D.

Table 7
Trip Generation Summary

Weekday	New Trips Generated (PASSENGER VEHICLES)			New Trips Generated (TRUCKS)			Total New Trips Generated (ALL VEHICLES)		
Time Period	In	Out	Total	In	Out	Total	In	Out	Total
Daily	636	636	1,272	126	126	252	762	762	1,524
AM Peak Hour	152	44	196	7	5	12	159	49	208
PM Peak Hour	67	165	232	7	7	14	74	172	246

Project Trip Distribution and Assignment

The distribution of project-generated traffic to the adjacent road network was based on a custom industrial model distribution provided by the Thurston Reginal Planning Council (TRPC). A copy of the TRPC model distribution output is included in Appendix E.

The TRPC modeling was used to assign the new weekday AM peak hour (159 inbound and 49 outbound) and PM peak hour (74 inbound and 172 outbound) trips generated by the proposed project to the adjacent street network.

The resulting assignment of the new weekday AM and PM peak hour project trips through the study intersections and site access driveways, separated by passenger vehicle trips and truck trips, are shown in Figures 5-6.

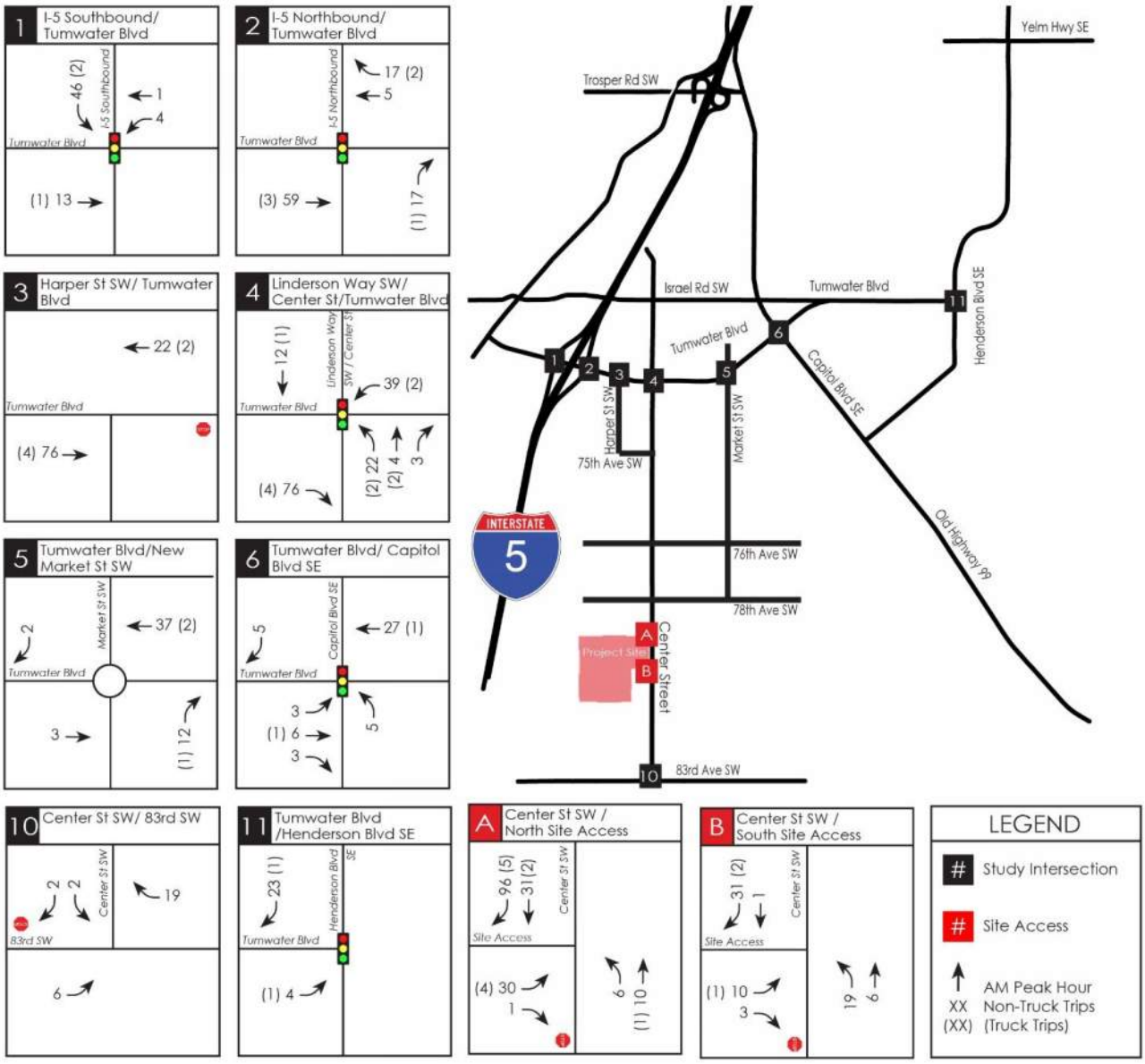


Figure 5: Weekday AM Peak Hour Project Trip Assignment

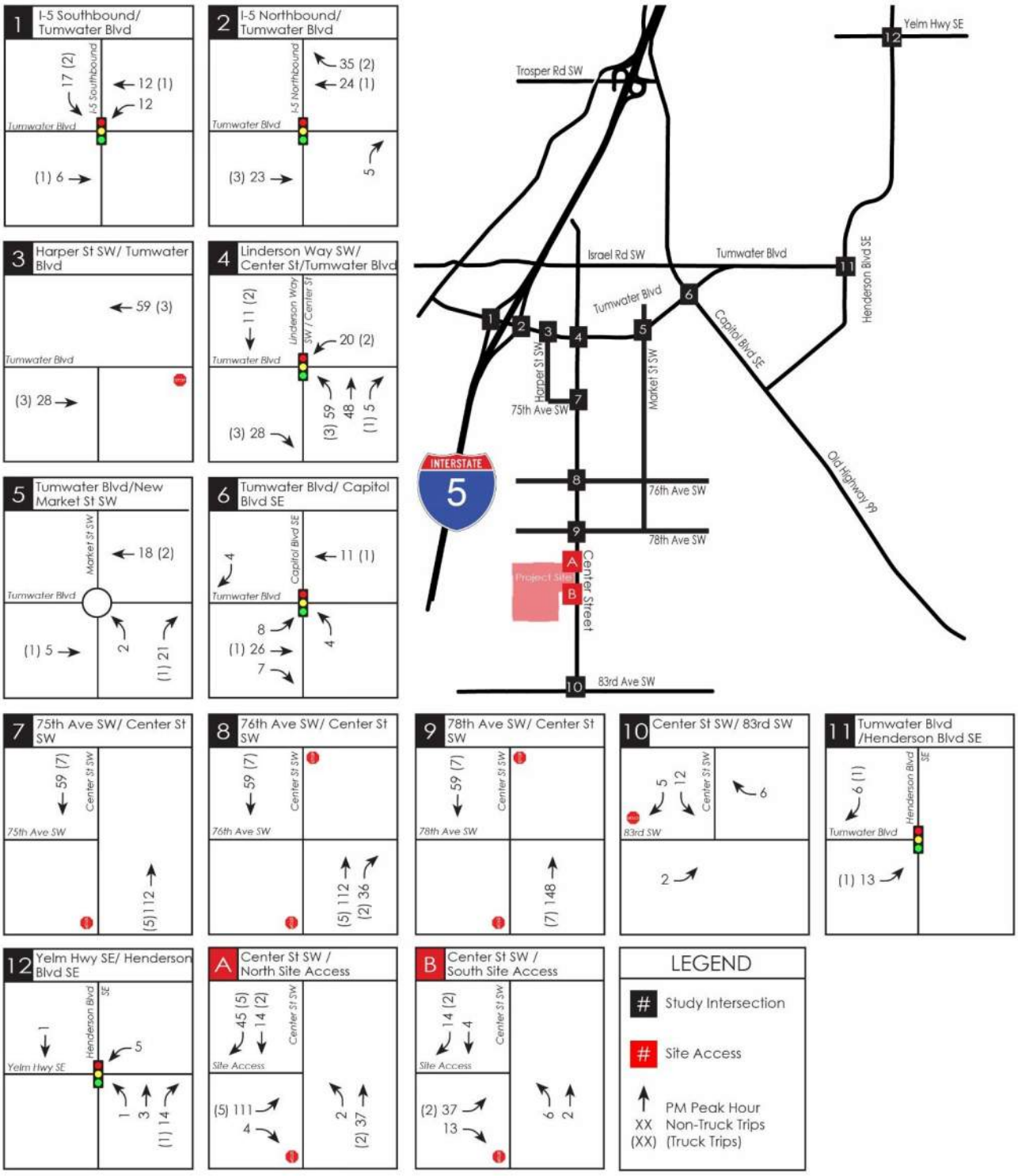


Figure 6: Weekday PM Peak Hour Project Trip Assignment

Future Traffic Volumes

Future year 2023 No Action (without project) weekday AM and PM peak hour traffic volumes were estimated by applying a 4.0 percent annual growth rate to the existing traffic counts based on direction from the City of Tumwater.

The resulting future 2023 No Action (without project) weekday AM and PM peak hour traffic volumes at the study intersections are shown in Figures 7-8. The future With Project traffic volumes were determined by adding the trip assignment from the proposed development (shown in Figures 5-6) to the future No Action (without project) traffic volumes (shown in Figures 7-8). The future 2023 With Project traffic volumes are shown in Figures 9-10.

Future Planned Improvements

This section documents the known transportation improvements in the study area. Based on review of the City of Tumwater *2020-2025 Capital Facilities Plan (CFP)*, City of Tumwater *2021-2026 Transportation Improvement Program (TIP)*, Thurston County *2022-2027 TIP*, and WSDOT *2022-2025 Statewide Transportation Improvement Program (STIP)*, there are no planned improvements in the project study area.

Note that the City of Tumwater and WSDOT have long term plans for two new roundabouts at the I-5/Tumwater Blvd interchange. To help fund these future improvements, the City is collecting a SEPA mitigation fee from new developments in the amount of $4,219 per new AM peak hour trip impacting the interchange.

Intersection LOS Analysis

Future intersection LOS analyses were evaluated at the 12 off-site study intersections for future 2023 conditions with and without the proposed project. Study intersections were identified through coordination with City of Tumwater staff. The signal timing data used at the signalized study intersection was based on data provided by the City of Tumwater. The roadway network assumed in the future LOS analyses was based on existing intersection geometry.

The City of Tumwater, Thurston County, and WSDOT intersection LOS standard is LOS D. Note that intersections located on City of Tumwater *Strategy Corridors* are exempt from LOS standards. Per the City of Tumwater's *Comprehensive Transportation Plan*, vehicle delay is not the overriding consideration on the defined Strategy Corridors. The City will work with developers to enhance multimodal mobility where practical and may choose to permit development even if it exceeds LOS thresholds because that development supports broader city objectives about growth and urban form. Extra emphasis is placed on operational efficiency and completeness of the multimodal network.

The LOS results are summarized in Tables 8-9 and detailed LOS worksheets are provided in Appendix C.

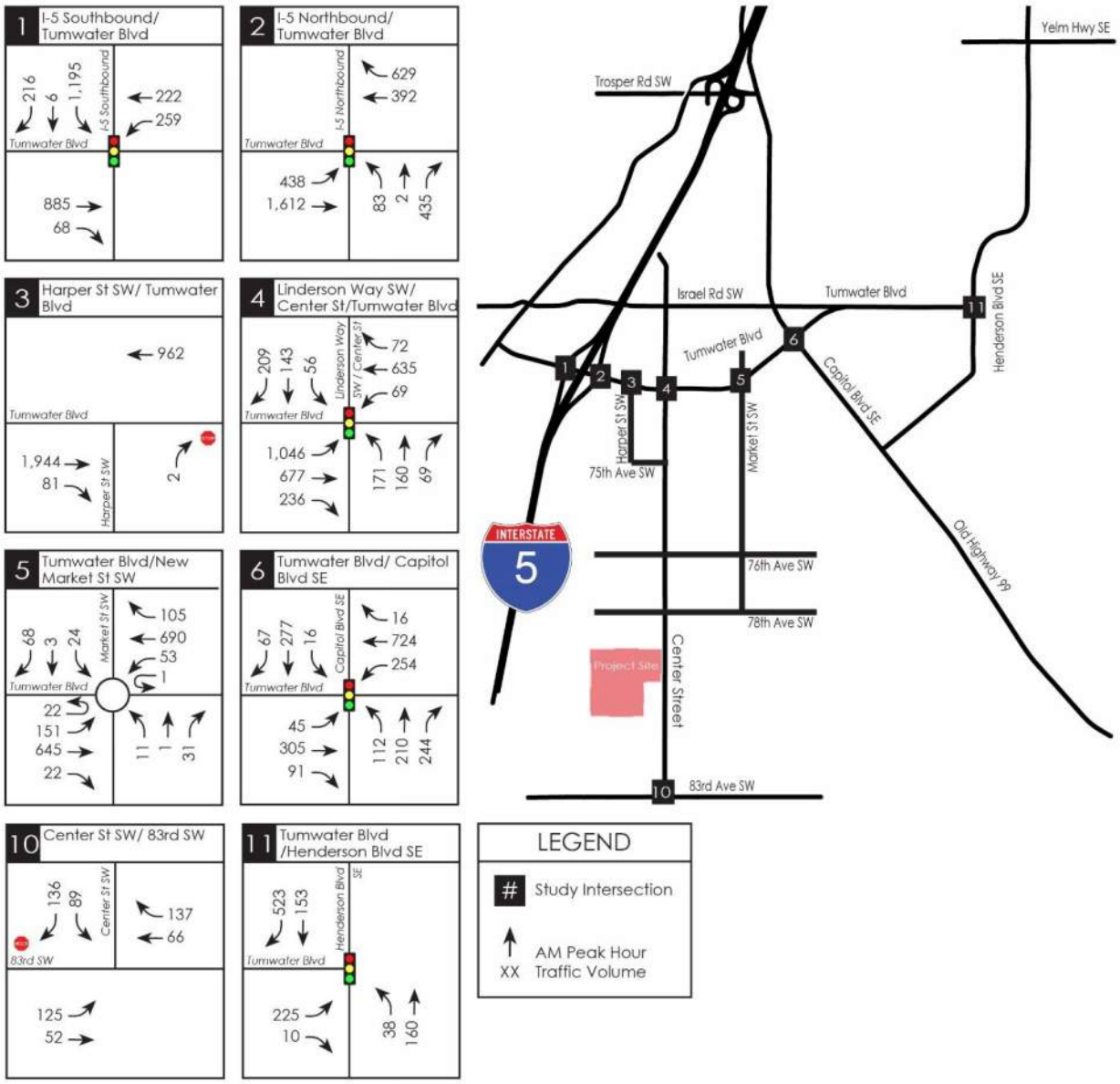


Figure 7: 2023 Without Project Weekday AM Peak Hour Traffic Volumes

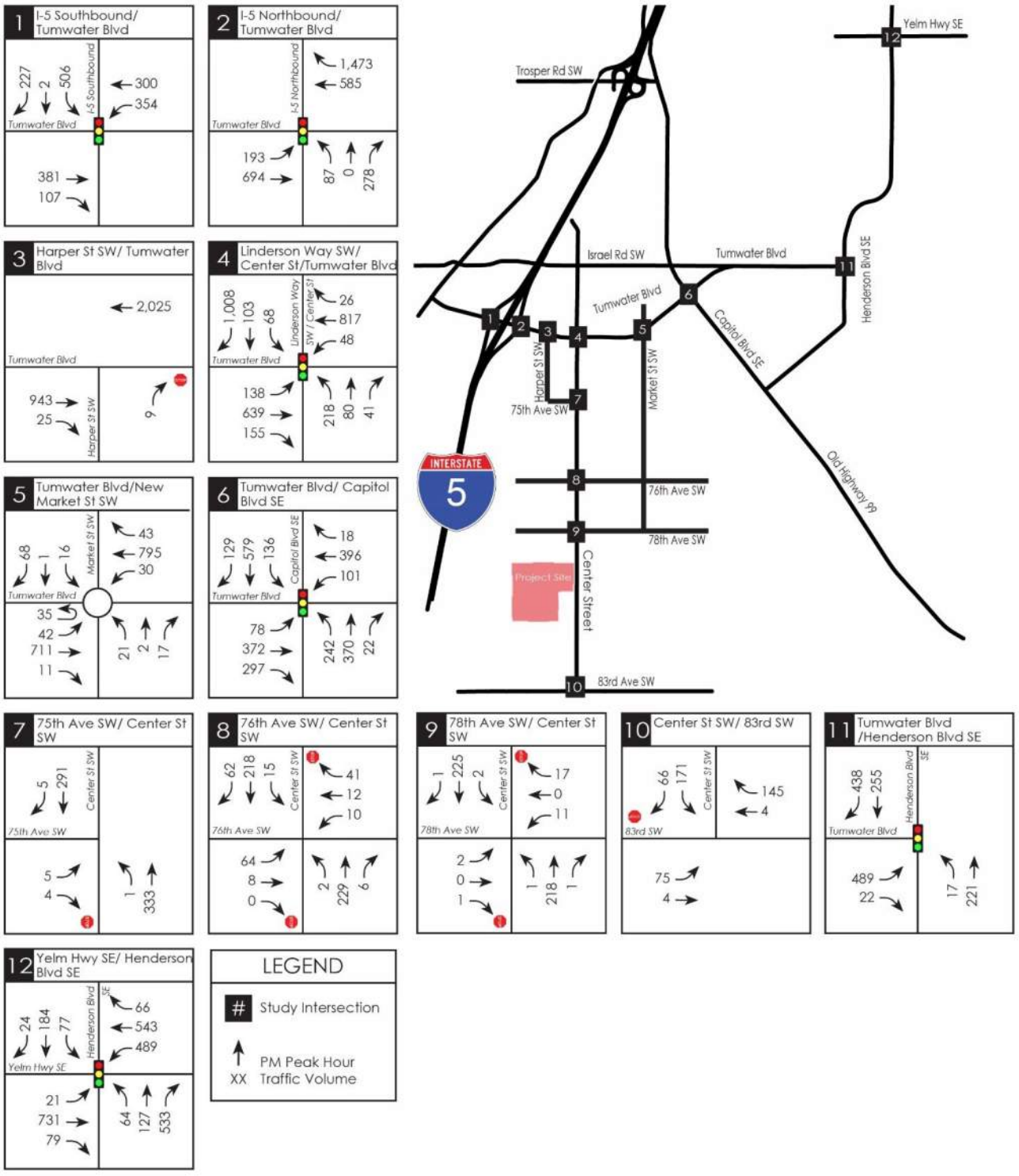


Figure 8: 2023 Without Project Weekday PM Peak Hour Traffic Volumes

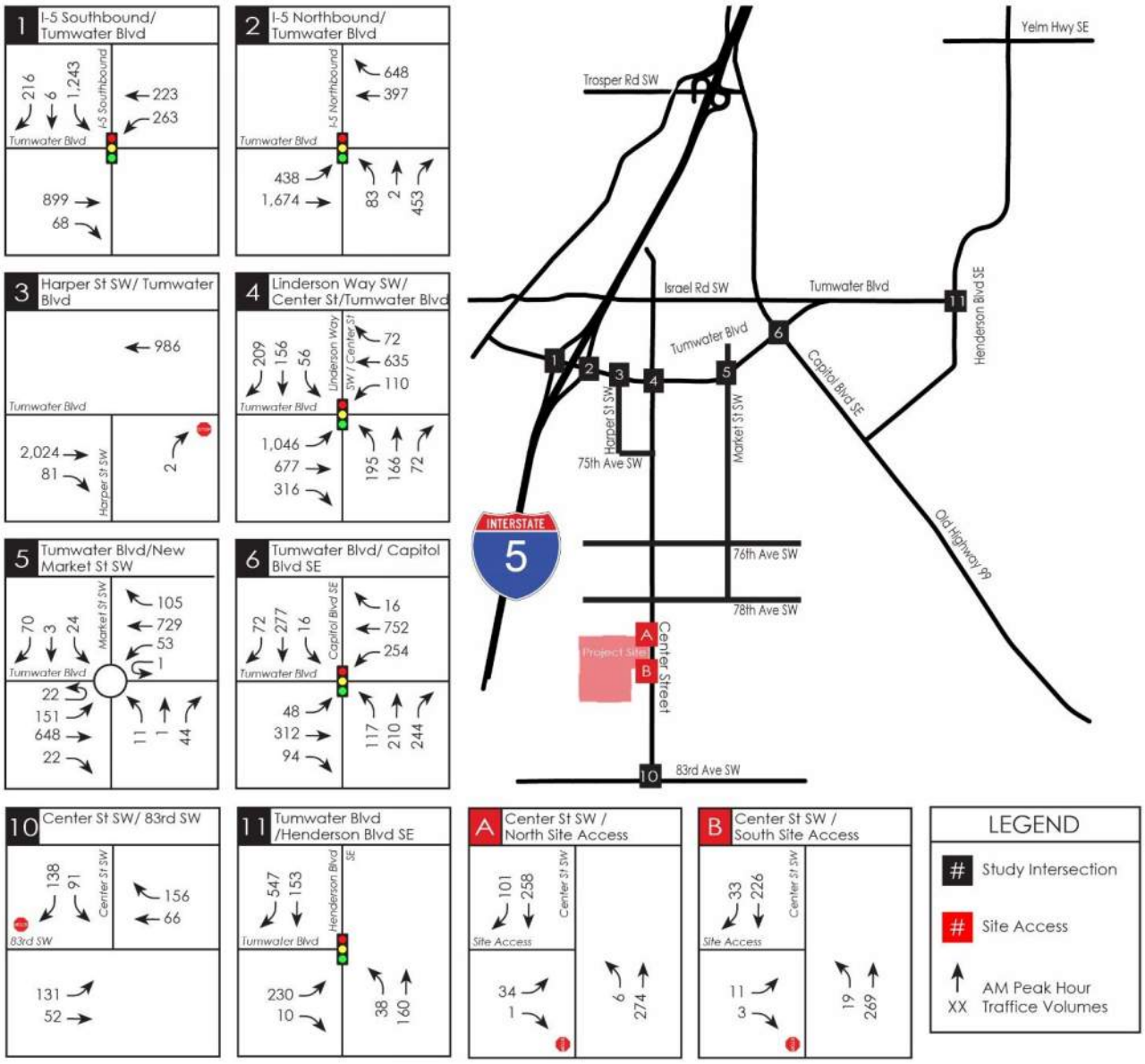


Figure 9: 2023 With Project Weekday AM Peak Hour Traffic Volumes

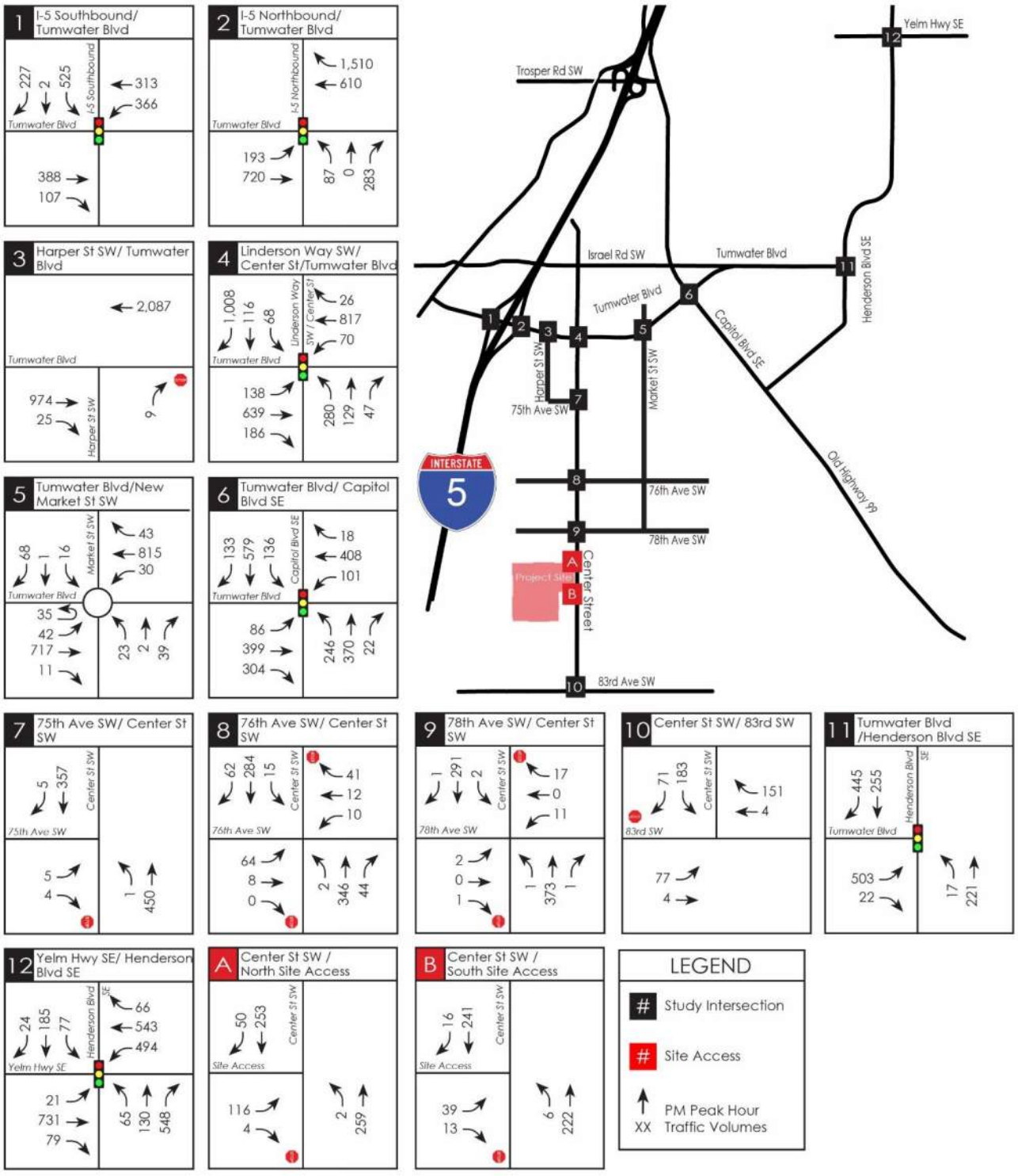


Figure 10: 2023 With Project Weekday PM Peak Hour Traffic Volumes

Table 8
Future 2023 Weekday AM Peak Hour LOS Summary

Study Intersection / Movement	No Action LOS	No Action Delay (sec)	With Project LOS	With Project Delay (sec)
Signalized Intersections:				
1. I-5 SB Ramps/Tumwater Blvd SW	F	82.4	F	92.8
4. Linderson Way SW/Center St/Tumwater Blvd SW[1]	F	123.5	F	129.2
6. Capitol Blvd SE/Tumwater Blvd SW[1]	C	32.3	C	32.7
11. Henderson Blvd SE/Tumwater Blvd SE[1]	C	21.6	C	22.0
Two-Way Stop Controlled Intersections:				
2. I-5 NB Ramps/Tumwater Blvd SE				
Northbound Left-Turn	F	> 300	F	> 300
Northbound Right-Turn	F	> 300	F	> 300
Eastbound Left-Turn	B	10.5	B	10.5
3. Harper Street SW/Tumwater Blvd SW[1]				
Northbound Right-Turn	D	25.9	D	27.6
10. Center Street SW/83rd Avenue SW				
Eastbound Left-Turn	A	8.5	A	8.7
Southbound Approach	C	21.0	C	23.5
Roundabout Intersections:				
5. New Market St SW/Tumwater Blvd SW[1]	A	5.1	A	5.1

Note:
1. Intersection located on City of Tumwater Strategy Corridor.

Table 9
Future 2023 Weekday PM Peak Hour LOS Summary

Study Intersection / Movement	No Action LOS	No Action Delay (sec)	With Project LOS	With Project Delay (sec)
Signalized Intersections:				
1. I-5 SB Ramps/Tumwater Blvd SW	C	25.5	C	27.3
4. Linderson Way SW/Center St/Tumwater Blvd SW[1]	C	27.0	C	31.8
6. Capitol Blvd SE/Tumwater Blvd SW[1]	C	30.7	C	32.5
11. Henderson Blvd SE/Tumwater Blvd SE[1]	C	32.5	C	33.6
12. Henderson Blvd SE/Yelm Hwy SE	C	30.7	C	31.1
Two-Way Stop Controlled Intersections:				
2. I-5 NB Ramps/Tumwater Blvd SE				
Northbound Left-Turn	F	> 300	F	> 300
Northbound Right-Turn	C	18.1	C	19.0
Eastbound Left-Turn	B	10.1	B	10.3
3. Harper Street SW/Tumwater Blvd SW[1]				
Northbound Right-Turn	B	12.5	B	12.7
7. Center Street SW/75th Avenue SW				
Northbound Left-Turn	A	7.9	A	8.1
Eastbound Approach	B	12.8	C	15.0
8. Center Street SW/76th Avenue SW				
Northbound Left-Turn	A	8.5	A	8.7
Eastbound Approach	C	16.4	C	23.1
Westbound Approach	B	12.1	B	14.5
Southbound Left-Turn	A	8.4	A	9.0
9. Center Street SW/78th Avenue SW				
Northbound Left-Turn	A	7.7	A	7.9
Eastbound Approach	B	12.0	B	14.8
Westbound Approach	B	11.1	B	13.6
Southbound Left-Turn	A	7.7	A	8.2
10. Center Street SW/83rd Avenue SW				
Eastbound Left-Turn	A	7.9	A	7.9
Southbound Approach	B	13.6	B	14.2
Roundabout Intersections:				
5. New Market St SW/Tumwater Blvd SW[1]	A	4.2	A	4.2

Note:
1. Intersection located on City of Tumwater Strategy Corridor.

As shown in Tables 8-9, each of the study intersections are anticipated to operate at acceptable levels (LOS D or better) for the proposed project during the weekday AM and PM peak hours with the following exceptions:

Intersections Located on City of Tumwater Strategy Corridors:

The following intersection is anticipated to operate at LOS F without or with the proposed project during the weekday AM peak hour but is located on a City of Tumwater Strategy Corridor and is therefore exempt from LOS standards:

4. Linderson Way SW/Center St SW/Tumwater Blvd SW

Intersections with Future Planned Improvements:

The following intersections are anticipated to operate at LOS F without or with the proposed project during the AM or PM peak hours and include future planned improvements that are expected to result in acceptable LOS. Mitigation at the following two intersections will be payment of a SEPA mitigation fee developed by the City of Tumwater at the I-5/Tumwater Blvd interchange:

1. I-5 SB Ramps/Tumwater Blvd
2. I-5 NB Ramps/Tumwater Blvd

Site Access Evaluation

Vehicular access is proposed at two (2) locations: two (2) new full access (allowing all turning movements) driveways on Center Street SW.

To assess operations at the proposed site access locations, LOS and queuing were conducted during the weekday AM and PM peak ours for future year 2023 with project conditions. The reported queues for the individual movements at each of the proposed site access locations are 95th-percentile queues, which are only exceeded five (5) percent of the time. The 2023 with project AM and PM peak hour traffic volumes at the proposed site access locations were shown previously in Figures 10 and 11. The weekday peak hour site access operations are summarized in Table 10.

Table 10
Weekday Peak Hour Site Access Operations

	AM Peak Hour			PM Peak Hour		
Site Access / Movement	LOS	Delay (sec)	95th % Queue (ft)	LOS	Delay (sec)	95th % Queue (ft)
A. Center Street SW/North Access						
Northbound Left-Turn	A	8.0	0'	A	7.9	0'
Eastbound Approach	B	13.8	< 25'	C	15.5	25'
B. Center Street SW/South Access						
Northbound Left-Turn	A	7.7	0'	A	7.8	0'
Eastbound Approach	B	12.1	< 25'	B	12.3	< 25'

As shown in Table 10, the individual movements entering and exiting the site at the proposed stop-controlled site access locations are expected to operate at acceptable levels (LOS C or better) during the weekday AM and PM peak hours. Additionally, the estimated 95th-percentile queues at each of the site access locations are anticipated to be no more than 25 feet (1 vehicle) during both the AM and PM peak hours.

MITIGATION

The following summarizes the measures proposed to mitigate the transportation impacts of the proposed project.

City of Tumwater Transportation Impact Fees. Transportation mitigation required by the City of Tumwater is payment of a transportation impact fee. As of the date of this study, the adopted City of Tumwater 2022 impact fee schedule identifies a fee of $4.33 per square foot (SF) for manufacturing use and $1.97 per SF for warehousing use. Based on an assumed even mix of manufacturing and warehousing, the estimated transportation impact fee is $1,512,000 ($4.33 x 240,000 SF manufacturing + $1.97 x 240,000 SF warehousing). Final transportation impact fees will be determined by the City of Tumwater prior to development approval.

I-5/Tumwater Blvd Interchange. The City of Tumwater has developed a SEPA mitigation fee for developments to mitigate their impacts at the I-5/Tumwater Blvd interchange by paying a per trip fee to fund future improvements at the interchange. As documented in the City's *Preliminary Site Plan Review Letter* (dated October 21, 2021), the fee assessed is $4,219 per new AM peak hour trip. The estimated SEPA mitigation fee is $438,776 ($4,219 X 104 new AM peak hour trips impacting the interchange).

Thurston County Pro-Rata Mitigation. The County requests transportation mitigation for new development in adjacent cities that impact County-planned transportation improvements identified in the County 6-year TIP. There is one (1) County-planned transportation project that will be impacted by traffic generated by the proposed project (Project #61325 – Littlerock Rd Bridge and 113th Intersection). A pro-rata transportation mitigation cost of $471 has been identified to help fund this project. The Thurston County pro-rata mitigation calculations are shown in **Appendix F**.

Appendix A

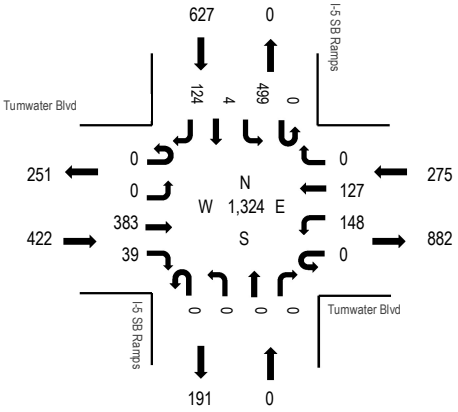
Existing Traffic Count Data

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

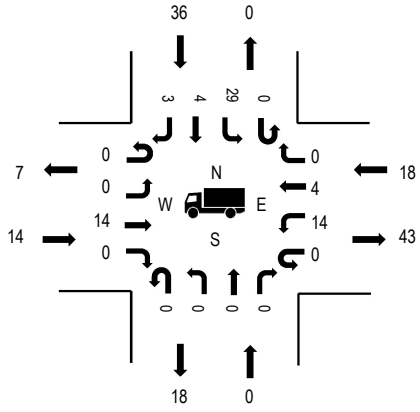
Location: 1 I-5 SB Ramps & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:00 AM - 08:00 AM

Peak Hour

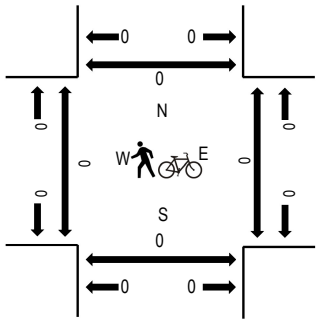
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	3.3%	0.73
WB	6.5%	0.80
NB	0.0%	0.00
SB	5.7%	0.88
All	5.1%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				I-5 SB Ramps Northbound				I-5 SB Ramps Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	77	10	0	29	27	0	0	0	0	0	0	86	0	39	268	1,324
7:15 AM	0	0	75	10	0	36	33	0	0	0	0	0	0	129	0	39	322	1,276
7:30 AM	0	0	138	7	0	53	33	0	0	0	0	0	0	131	4	21	387	1,162
7:45 AM	0	0	93	12	0	30	34	0	0	0	0	0	0	153	0	25	347	1,001
8:00 AM	0	0	62	9	0	22	25	0	0	0	0	0	0	89	0	13	220	890
8:15 AM	0	0	51	9	0	26	23	0	0	0	0	0	0	78	0	21	208	
8:30 AM	0	0	65	9	0	32	32	0	0	0	0	0	0	73	0	15	226	
8:45 AM	0	0	82	12	0	23	26	0	0	0	0	0	0	74	2	17	236	
Count Total	0	0	643	78	0	251	233	0	0	0	0	0	0	813	6	190	2,214	
Peak Hour	0	0	383	39	0	148	127	0	0	0	0	0	0	499	4	124	1,324	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

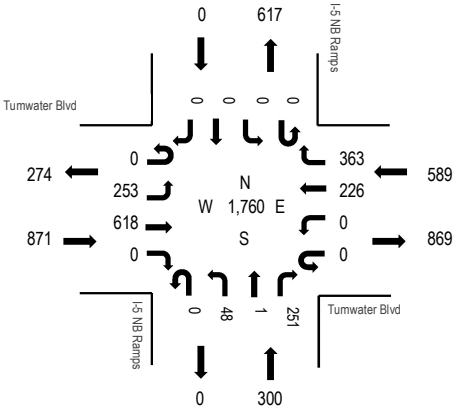
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	0	5	7	15	7:00 AM	0	0	0	0	0
7:15 AM	2	0	3	7	12	7:15 AM	0	0	0	0	0
7:30 AM	9	0	2	11	22	7:30 AM	0	0	0	0	0
7:45 AM	0	0	8	11	19	7:45 AM	0	0	0	0	0
8:00 AM	2	0	3	5	10	8:00 AM	0	0	0	0	0
8:15 AM	1	0	4	5	10	8:15 AM	0	0	0	0	0
8:30 AM	0	0	4	10	14	8:30 AM	0	0	0	0	0
8:45 AM	4	0	4	15	23	8:45 AM	0	0	0	0	0
Count Total	21	0	33	71	125	Count Total	0	0	0	0	0
Peak Hour	14	0	18	36	68	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

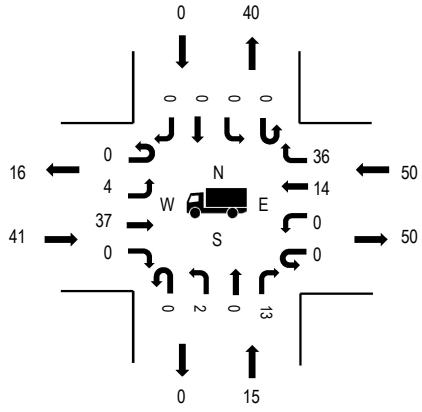
Location: 2 I-5 NB Ramps & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:00 AM - 08:00 AM

Peak Hour

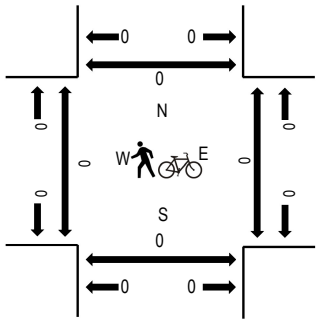
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	4.7%	0.84
WB	8.5%	0.78
NB	5.0%	0.76
SB	0.0%	0.00
All	6.0%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				I-5 NB Ramps Northbound				I-5 NB Ramps Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	48	112	0	0	0	50	60	0	10	0	47	0	0	0	0	327	1,760
7:15 AM	0	50	148	0	0	0	58	98	0	14	1	84	0	0	0	0	453	1,751
7:30 AM	0	85	174	0	0	0	72	117	0	11	0	72	0	0	0	0	531	1,591
7:45 AM	0	70	184	0	0	0	46	88	0	13	0	48	0	0	0	0	449	1,364
8:00 AM	0	44	109	0	0	0	49	71	0	5	1	39	0	0	0	0	318	1,224
8:15 AM	0	46	95	0	0	0	34	71	0	10	0	37	0	0	0	0	293	
8:30 AM	0	45	88	0	0	0	48	77	0	14	0	32	0	0	0	0	304	
8:45 AM	0	63	93	0	0	0	37	64	0	13	0	39	0	0	0	0	309	
Count Total	0	451	1,003	0	0	0	394	646	0	90	2	398	0	0	0	0	2,984	
Peak Hour	0	253	618	0	0	0	226	363	0	48	1	251	0	0	0	0	1,760	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

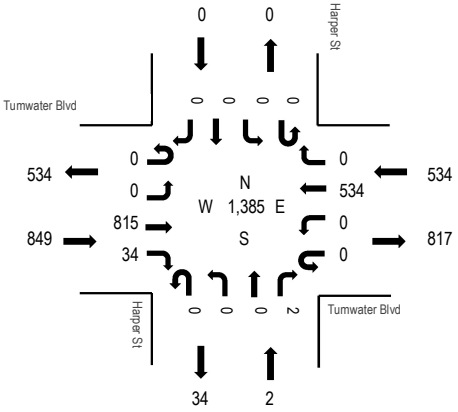
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	7	4	10	0	21	7:00 AM	0	0	0	0	0
7:15 AM	10	5	14	0	29	7:15 AM	0	0	0	0	0
7:30 AM	14	4	13	0	31	7:30 AM	0	0	0	0	0
7:45 AM	10	2	13	0	25	7:45 AM	0	0	0	0	0
8:00 AM	9	3	15	0	27	8:00 AM	0	0	0	0	0
8:15 AM	6	1	12	0	19	8:15 AM	0	0	0	0	0
8:30 AM	10	4	9	0	23	8:30 AM	0	0	0	0	0
8:45 AM	18	0	12	0	30	8:45 AM	0	0	0	0	0
Count Total	84	23	98	0	205	Count Total	0	0	0	0	0
Peak Hour	41	15	50	0	106	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

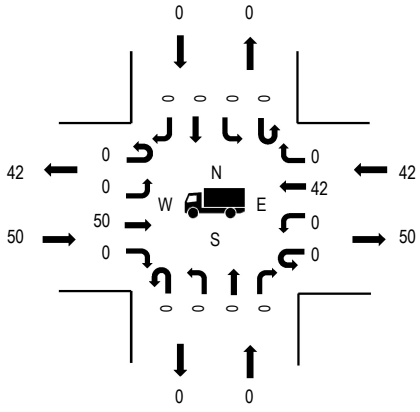
Location: 3 Harper St & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:00 AM - 08:00 AM

Peak Hour

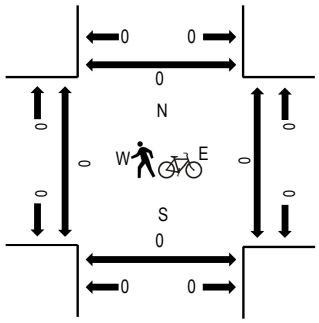
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	5.9%	0.86
WB	7.9%	0.80
NB	0.0%	0.50
SB	0.0%	0.00
All	6.6%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				Harper St Northbound				Harper St Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	155	3	0	0	103	0	0	0	0	1	0	0	0	0	262	1,385
7:15 AM	0	0	204	18	0	0	136	0	0	0	0	0	0	0	0	0	358	1,385
7:30 AM	0	0	241	6	0	0	170	0	0	0	0	1	0	0	0	0	418	1,248
7:45 AM	0	0	215	7	0	0	125	0	0	0	0	0	0	0	0	0	347	1,075
8:00 AM	0	0	146	1	0	0	114	0	0	0	0	1	0	0	0	0	262	947
8:15 AM	0	0	123	2	0	0	96	0	0	0	0	0	0	0	0	0	221	
8:30 AM	0	0	114	3	0	0	127	0	0	0	0	1	0	0	0	0	245	
8:45 AM	0	0	129	2	0	0	87	0	0	0	0	1	0	0	0	0	219	
Count Total	0	0	1,327	42	0	0	958	0	0	0	0	5	0	0	0	0	2,332	
Peak Hour	0	0	815	34	0	0	534	0	0	0	0	2	0	0	0	0	1,385	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

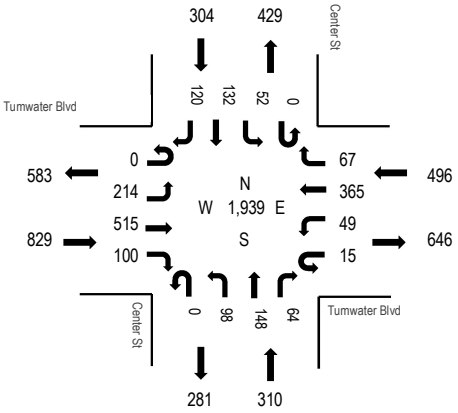
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	9	0	9	0	18	7:00 AM	0	0	0	0	0
7:15 AM	11	0	10	0	21	7:15 AM	0	0	0	0	0
7:30 AM	18	0	14	0	32	7:30 AM	0	0	0	0	0
7:45 AM	12	0	9	0	21	7:45 AM	0	0	0	0	0
8:00 AM	9	0	11	0	20	8:00 AM	0	0	0	0	0
8:15 AM	5	0	12	0	17	8:15 AM	0	0	0	0	0
8:30 AM	16	0	9	0	25	8:30 AM	0	0	0	0	0
8:45 AM	16	0	10	0	26	8:45 AM	0	1	0	0	1
Count Total	96	0	84	0	180	Count Total	0	1	0	0	1
Peak Hour	50	0	42	0	92	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

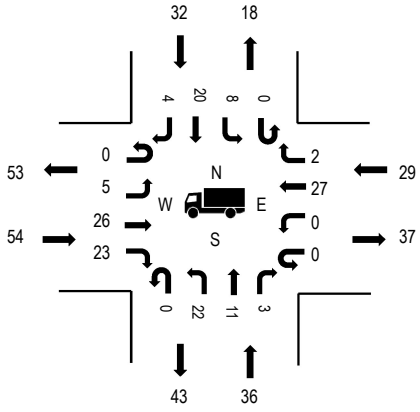
Location: 4 Center St & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:15 AM - 08:15 AM

Peak Hour

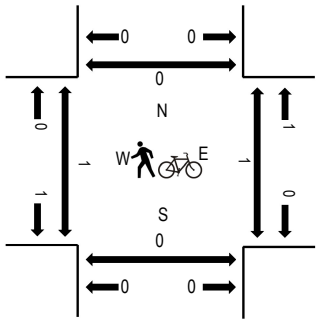
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	6.5%	0.89
WB	5.8%	0.77
NB	11.6%	0.68
SB	10.5%	0.59
All	7.8%	0.80

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				Center St Northbound				Center St Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	1	37	89	16	4	6	74	4	0	16	17	7	0	7	12	16	306	1,917
7:15 AM	0	67	121	27	7	13	98	15	0	16	39	7	0	16	44	30	500	1,939
7:30 AM	0	62	132	32	5	21	107	29	0	34	46	13	0	21	61	46	609	1,733
7:45 AM	0	52	159	21	2	11	82	16	0	34	43	37	0	6	16	23	502	1,428
8:00 AM	0	33	103	20	1	4	78	7	0	14	20	7	0	9	11	21	328	1,196
8:15 AM	0	21	79	26	1	6	75	13	0	16	18	7	0	9	9	14	294	
8:30 AM	1	16	90	9	3	7	101	10	0	14	16	7	0	4	11	15	304	
8:45 AM	0	16	99	19	2	4	72	5	0	9	13	4	0	8	7	12	270	
Count Total	2	304	872	170	25	72	687	99	0	153	212	89	0	80	171	177	3,113	
Peak Hour	0	214	515	100	15	49	365	67	0	98	148	64	0	52	132	120	1,939	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	8	3	7	4	22	7:00 AM	0	0	0	0	0
7:15 AM	13	6	7	18	44	7:15 AM	0	0	0	0	0
7:30 AM	15	7	9	7	38	7:30 AM	0	0	0	0	0
7:45 AM	17	11	7	2	37	7:45 AM	0	0	0	0	0
8:00 AM	9	12	6	5	32	8:00 AM	1	0	1	0	2
8:15 AM	8	9	4	5	26	8:15 AM	0	1	0	0	1
8:30 AM	15	4	11	5	35	8:30 AM	0	0	0	0	0
8:45 AM	18	5	10	3	36	8:45 AM	0	0	0	1	1
Count Total	103	57	61	49	270	Count Total	1	1	1	1	4
Peak Hour	54	36	29	32	151	Peak Hour	1	0	1	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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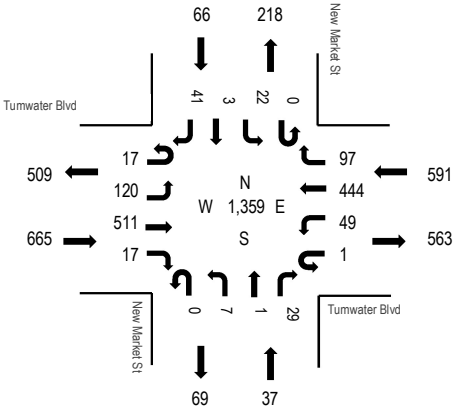
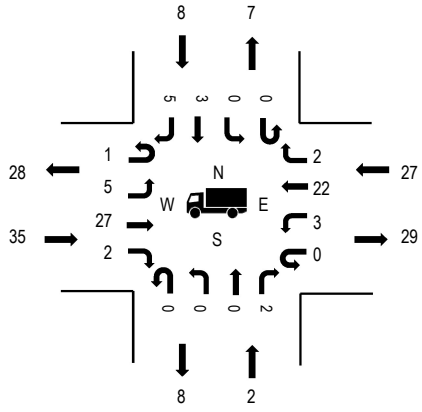
Location: 5 New Market St & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:15 AM - 08:15 AM

Peak Hour

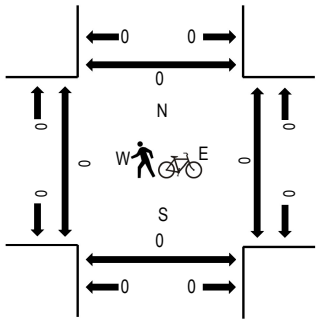
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	5.3%	0.81
WB	4.6%	0.79
NB	5.4%	0.49
SB	12.1%	0.61
All	5.3%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				New Market St Northbound				New Market St Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	2	14	86	5	0	4	87	5	0	0	1	1	0	1	0	3	209	1,308
7:15 AM	5	27	107	4	0	12	132	19	0	2	0	2	0	3	0	9	322	1,359
7:30 AM	5	38	140	2	0	20	139	27	0	3	0	6	0	9	3	15	407	1,268
7:45 AM	5	40	155	5	0	7	87	32	0	0	1	18	0	9	0	11	370	1,143
8:00 AM	2	15	109	6	1	10	86	19	0	2	0	3	0	1	0	6	260	1,006
8:15 AM	7	21	73	2	0	8	79	21	0	2	1	5	0	3	1	8	231	
8:30 AM	2	19	78	5	0	21	105	23	0	3	1	7	0	7	1	10	282	
8:45 AM	8	13	92	5	0	6	76	14	0	3	2	1	0	5	1	7	233	
Count Total	36	187	840	34	1	88	791	160	0	15	6	43	0	38	6	69	2,314	
Peak Hour	17	120	511	17	1	49	444	97	0	7	1	29	0	22	3	41	1,359	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	9	0	5	1	15	7:00 AM	0	0	0	0	0
7:15 AM	4	1	7	2	14	7:15 AM	0	0	0	0	0
7:30 AM	12	0	8	5	25	7:30 AM	0	0	0	0	0
7:45 AM	8	1	5	1	15	7:45 AM	0	0	0	0	0
8:00 AM	11	0	7	0	18	8:00 AM	0	0	0	0	0
8:15 AM	6	0	5	0	11	8:15 AM	0	1	0	0	1
8:30 AM	10	0	12	2	24	8:30 AM	0	0	0	1	1
8:45 AM	10	1	7	2	20	8:45 AM	0	0	0	0	0
Count Total	70	3	56	13	142	Count Total	0	1	0	1	2
Peak Hour	35	2	27	8	72	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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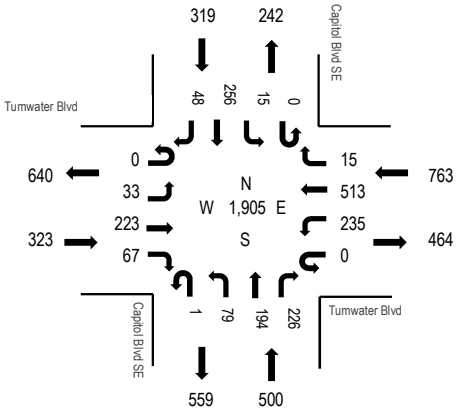
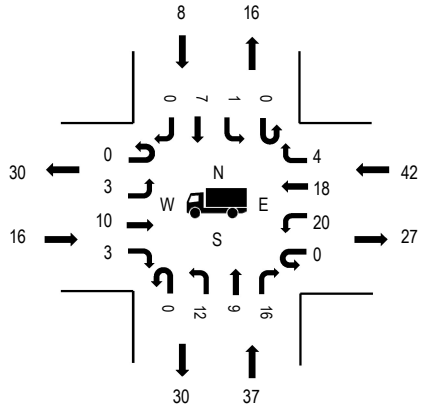
Location: 6 Capitol Blvd SE & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:00 AM - 08:00 AM

Peak Hour

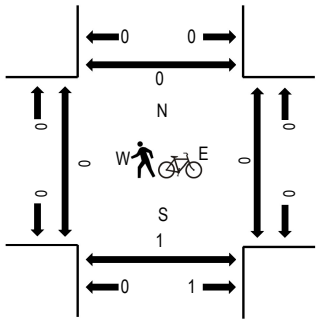
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	5.0%	0.77
WB	5.5%	0.83
NB	7.4%	0.68
SB	2.5%	0.83
All	5.4%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				Capitol Blvd SE Northbound				Capitol Blvd SE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	6	44	10	0	46	110	3	0	19	31	43	0	5	43	7	367	1,905
7:15 AM	0	7	50	18	0	62	159	4	1	15	23	38	0	2	81	7	467	1,891
7:30 AM	0	14	68	23	0	76	149	5	0	25	62	58	0	4	78	14	576	1,775
7:45 AM	0	6	61	16	0	51	95	3	0	20	78	87	0	4	54	20	495	1,620
8:00 AM	0	10	40	15	0	42	85	2	0	14	36	57	0	4	38	10	353	1,501
8:15 AM	0	7	44	8	0	55	101	6	0	12	30	33	0	7	39	9	351	
8:30 AM	0	7	58	17	0	61	113	2	0	11	26	32	0	9	68	17	421	
8:45 AM	0	13	69	7	0	41	103	3	1	9	35	47	0	4	33	11	376	
Count Total	0	70	434	114	0	434	915	28	2	125	321	395	0	39	434	95	3,406	
Peak Hour	0	33	223	67	0	235	513	15	1	79	194	226	0	15	256	48	1,905	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	6	9	10	4	29	7:00 AM	0	0	0	0	0
7:15 AM	2	5	17	2	26	7:15 AM	0	0	0	0	0
7:30 AM	3	10	8	1	22	7:30 AM	0	1	0	0	1
7:45 AM	5	13	7	1	26	7:45 AM	0	0	0	0	0
8:00 AM	6	15	13	1	35	8:00 AM	0	0	0	0	0
8:15 AM	1	5	7	3	16	8:15 AM	0	0	0	1	1
8:30 AM	3	6	9	10	28	8:30 AM	1	0	0	1	2
8:45 AM	3	6	7	3	19	8:45 AM	0	0	0	0	0
Count Total	29	69	78	25	201	Count Total	1	1	0	2	4
Peak Hour	16	37	42	8	103	Peak Hour	0	1	0	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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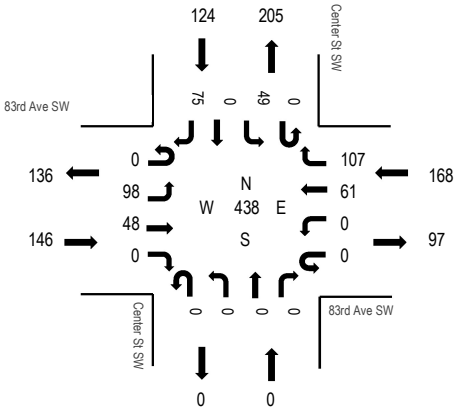
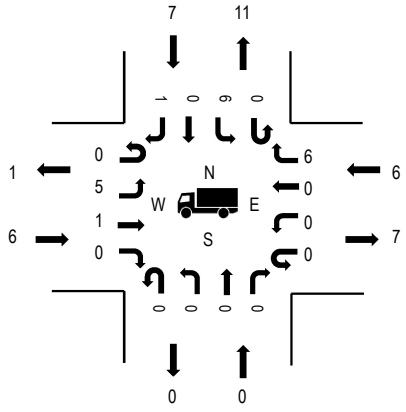
Location: 10 Center St SW & 83rd Ave SW AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:15 AM - 08:15 AM

Peak Hour

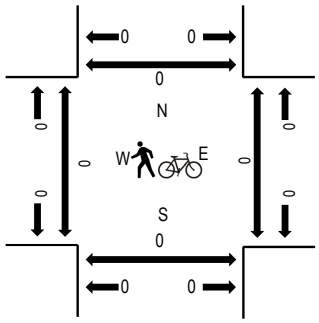
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	4.1%	0.54
WB	3.6%	0.66
NB	0.0%	0.00
SB	5.6%	0.60
All	4.3%	0.63

Traffic Counts - Motorized Vehicles

Interval Start Time	83rd Ave SW Eastbound				83rd Ave SW Westbound				Center St SW Northbound				Center St SW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	8	1	0	0	0	1	21	0	0	0	0	0	6	0	6	43	437
7:15 AM	0	9	3	0	0	0	8	41	0	0	0	0	0	11	0	14	86	438
7:30 AM	0	35	23	0	0	0	30	34	0	0	0	0	0	16	0	36	174	402
7:45 AM	0	48	20	0	0	0	20	22	0	0	0	0	0	6	0	18	134	275
8:00 AM	0	6	2	0	0	0	3	10	0	0	0	0	0	16	0	7	44	190
8:15 AM	0	8	5	0	0	0	1	21	0	0	0	0	0	9	0	6	50	
8:30 AM	0	10	2	0	0	0	3	18	0	0	0	0	0	9	0	5	47	
8:45 AM	0	3	1	0	0	0	5	24	0	0	0	0	1	12	0	3	49	
Count Total	0	127	57	0	0	0	71	191	0	0	0	0	1	85	0	95	627	
Peak Hour	0	98	48	0	0	0	61	107	0	0	0	0	0	49	0	75	438	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	2	0	2	7:00 AM	0	0	0	0	0
7:15 AM	2	0	0	3	5	7:15 AM	0	0	0	0	0
7:30 AM	0	0	2	2	4	7:30 AM	0	0	0	0	0
7:45 AM	3	0	3	1	7	7:45 AM	0	0	0	0	0
8:00 AM	1	0	1	1	3	8:00 AM	0	0	0	0	0
8:15 AM	0	0	2	1	3	8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	2	2	8:30 AM	0	0	0	0	0
8:45 AM	0	0	3	1	4	8:45 AM	0	0	0	0	0
Count Total	6	0	13	11	30	Count Total	0	0	0	0	0
Peak Hour	6	0	6	7	19	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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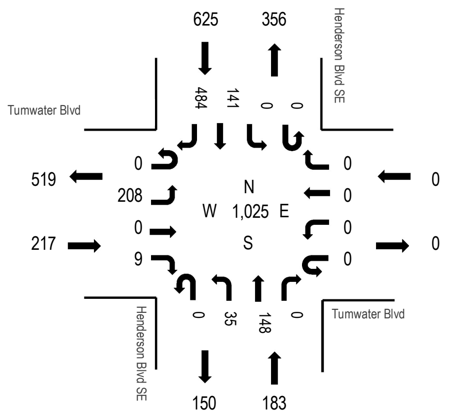
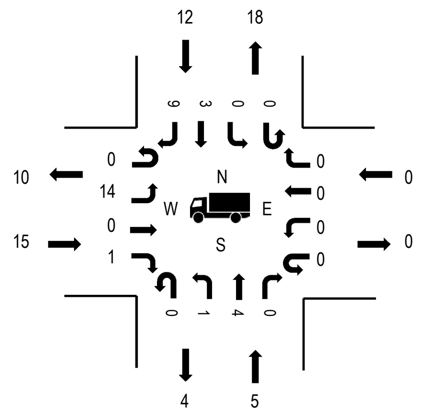
Location: 11 Henderson Blvd SE & Tumwater Blvd AM
Date: Wednesday, November 10, 2021
Peak Hour: 07:00 AM - 08:00 AM

Peak Hour

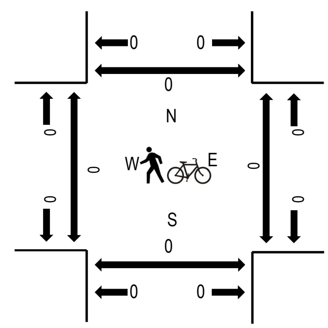
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	6.9%	0.73
WB	0.0%	0.00
NB	2.7%	0.76
SB	1.9%	0.89
All	3.1%	0.86

Traffic Counts - Motorized Vehicles

Interval	Tumwater Blvd				Tumwater Blvd				Henderson Blvd SE				Henderson Blvd SE					Rolling
	Eastbound				Westbound				Northbound				Southbound					Hour
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	36	0	1	0	0	0	0	0	6	32	0	0	0	31	101	207	1,025
7:15 AM	0	42	0	1	0	0	0	0	0	8	32	0	0	0	28	138	249	1,023
7:30 AM	0	58	0	5	0	0	0	0	0	11	49	0	0	0	42	133	298	1,010
7:45 AM	0	72	0	2	0	0	0	0	0	10	35	0	0	0	40	112	271	942
8:00 AM	0	50	0	1	0	0	0	0	0	5	35	0	0	0	16	98	205	850
8:15 AM	0	53	0	4	0	0	0	0	0	12	33	0	0	0	27	107	236	
8:30 AM	0	62	0	8	0	0	0	0	0	10	33	0	0	0	17	100	230	
8:45 AM	0	52	0	1	0	0	0	0	0	6	33	0	0	0	29	58	179	
Count Total	0	425	0	23	0	0	0	0	0	68	282	0	0	0	230	847	1,875	
Peak Hour	0	208	0	9	0	0	0	0	0	35	148	0	0	0	141	484	1,025	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

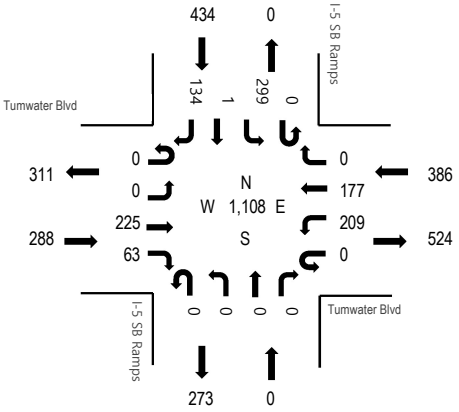
Interval	Heavy Vehicles					Interval	Pedestrians/Bicycles on Crosswalk				
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
7:00 AM	3	1	0	5	9	7:00 AM	0	0	0	0	0
7:15 AM	3	2	0	2	7	7:15 AM	0	0	0	0	0
7:30 AM	1	0	0	3	4	7:30 AM	0	0	0	0	0
7:45 AM	8	2	0	2	12	7:45 AM	0	0	0	0	0
8:00 AM	6	2	0	0	8	8:00 AM	0	0	0	0	0
8:15 AM	1	4	0	3	8	8:15 AM	0	0	0	0	0
8:30 AM	0	1	0	4	5	8:30 AM	0	0	0	0	0
8:45 AM	1	0	0	4	5	8:45 AM	0	0	0	0	0
Count Total	23	12	0	23	58	Count Total	0	0	0	0	0
Peak Hour	15	5	0	12	32	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 I-5 SB Ramps & Tumwater Blvd PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:45 PM - 05:45 PM

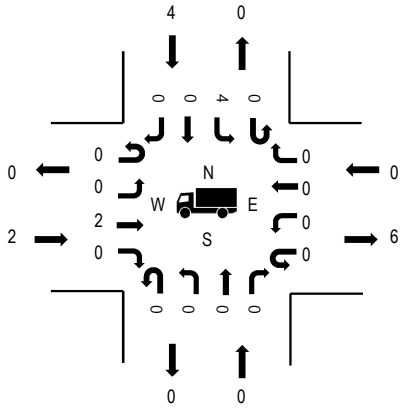
Peak Hour

Motorized Vehicles

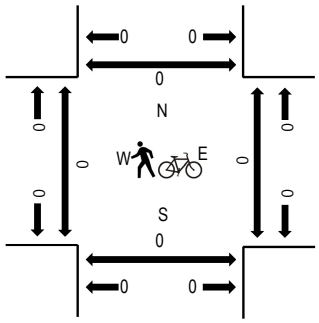


	HV%	PHF
EB	0.7%	0.85
WB	0.0%	0.78
NB	0.0%	0.00
SB	0.9%	0.94
All	0.5%	0.88

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				I-5 SB Ramps Northbound				I-5 SB Ramps Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	69	25	0	61	43	0	0	0	0	0	0	83	2	13	296	1,090
4:15 PM	0	0	65	16	0	45	43	0	0	0	0	0	0	86	0	36	291	1,107
4:30 PM	0	0	45	12	0	43	50	0	0	0	0	0	0	71	1	24	246	1,101
4:45 PM	0	0	49	12	0	50	47	0	0	0	0	0	0	76	0	23	257	1,108
5:00 PM	0	0	53	21	0	64	59	0	0	0	0	0	0	79	0	37	313	1,066
5:15 PM	0	0	69	16	0	57	31	0	0	0	0	0	0	83	1	28	285	
5:30 PM	0	0	54	14	0	38	40	0	0	0	0	0	0	61	0	46	253	
5:45 PM	0	0	46	21	0	26	34	0	0	0	0	0	0	62	1	25	215	
Count Total	0	0	450	137	0	384	347	0	0	0	0	0	0	601	5	232	2,156	
Peak Hour	0	0	225	63	0	209	177	0	0	0	0	0	0	299	1	134	1,108	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

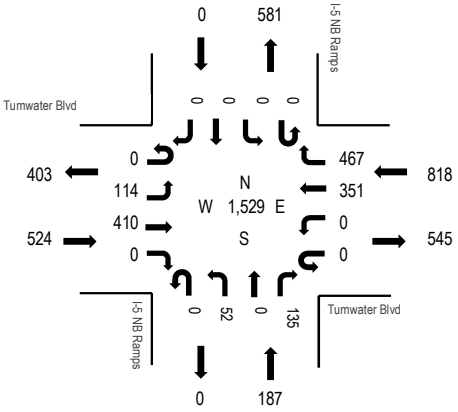
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	5	5	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	2	2	4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	1	1	4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	1	1	4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	2	0	0	1	3	5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	2	2	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	2	0	0	12	14	Count Total	0	0	0	1	1
Peak Hour	2	0	0	4	6	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

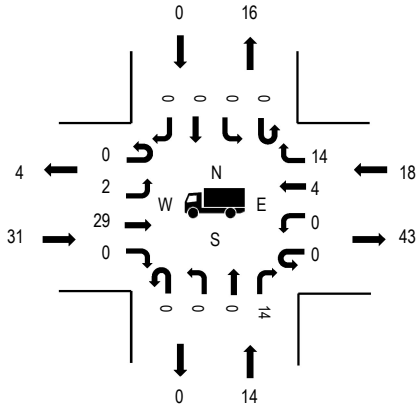
Location: 2 I-5 NB Ramps & Tumwater Blvd PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

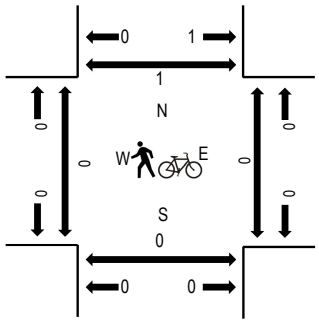
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	5.9%	0.85
WB	2.2%	0.80
NB	7.5%	0.85
SB	0.0%	0.00
All	4.1%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				I-5 NB Ramps Northbound				I-5 NB Ramps Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	57	111	0	0	0	85	122	0	7	1	18	0	0	0	0	401	1,498
4:15 PM	0	31	118	0	0	0	79	107	0	9	0	41	0	0	0	0	385	1,529
4:30 PM	0	18	90	0	0	0	82	127	0	12	0	29	0	0	0	0	358	1,529
4:45 PM	0	36	96	0	0	0	86	81	0	15	0	40	0	0	0	0	354	1,485
5:00 PM	0	29	106	0	0	0	104	152	0	16	0	25	0	0	0	0	432	1,358
5:15 PM	0	42	113	0	0	0	78	105	0	10	3	34	0	0	0	0	385	
5:30 PM	0	32	82	0	0	0	65	89	0	16	0	30	0	0	0	0	314	
5:45 PM	0	19	78	0	0	0	44	42	0	13	2	29	0	0	0	0	227	
Count Total	0	264	794	0	0	0	623	825	0	98	6	246	0	0	0	0	2,856	
Peak Hour	0	114	410	0	0	0	351	467	0	52	0	135	0	0	0	0	1,529	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

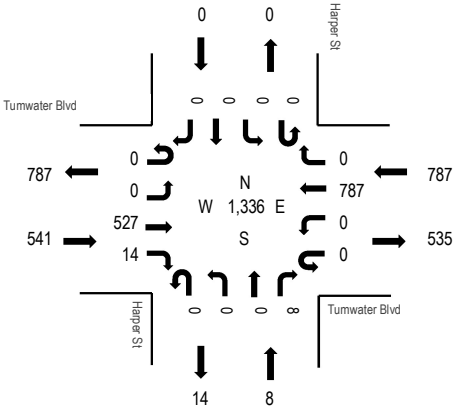
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	20	0	5	0	25	4:00 PM	0	0	0	0	0
4:15 PM	8	3	6	0	17	4:15 PM	0	0	0	0	0
4:30 PM	5	3	3	0	11	4:30 PM	0	0	0	1	1
4:45 PM	10	5	4	0	19	4:45 PM	0	0	0	0	0
5:00 PM	8	3	5	0	16	5:00 PM	0	0	0	0	0
5:15 PM	9	1	7	0	17	5:15 PM	0	0	0	0	0
5:30 PM	6	0	3	0	9	5:30 PM	0	0	0	0	0
5:45 PM	2	0	3	0	5	5:45 PM	0	0	0	0	0
Count Total	68	15	36	0	119	Count Total	0	0	0	1	1
Peak Hour	31	14	18	0	63	Peak Hour	0	0	0	1	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

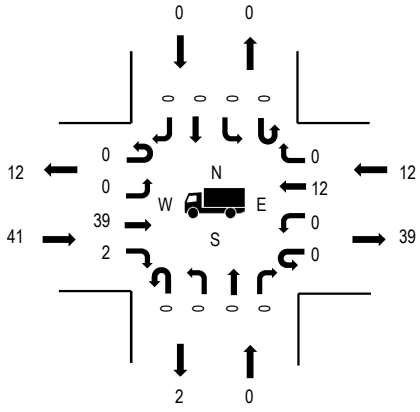
Location: 3 Harper St & Tumwater Blvd PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

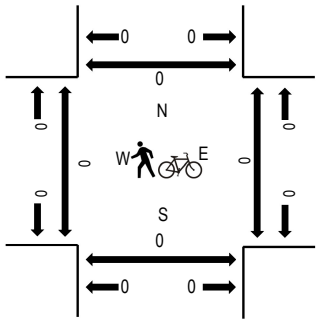
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	7.6%	0.84
WB	1.5%	0.81
NB	0.0%	0.50
SB	0.0%	0.00
All	4.0%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				Harper St Northbound				Harper St Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	124	4	0	0	199	0	0	0	0	2	0	0	0	0	329	1,293
4:15 PM	0	0	159	2	0	0	184	0	0	0	0	1	0	0	0	0	346	1,336
4:30 PM	0	0	117	3	0	0	199	0	0	0	0	1	0	0	0	0	320	1,302
4:45 PM	0	0	125	7	0	0	162	0	0	0	0	4	0	0	0	0	298	1,244
5:00 PM	0	0	126	2	0	0	242	0	0	0	0	2	0	0	0	0	372	1,139
5:15 PM	0	0	138	0	0	0	169	0	0	0	0	5	0	0	0	0	312	
5:30 PM	0	0	115	3	0	0	142	0	0	0	0	2	0	0	0	0	262	
5:45 PM	0	0	106	0	0	0	87	0	0	0	0	0	0	0	0	0	193	
Count Total	0	0	1,010	21	0	0	1,384	0	0	0	0	17	0	0	0	0	2,432	
Peak Hour	0	0	527	14	0	0	787	0	0	0	0	8	0	0	0	0	1,336	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

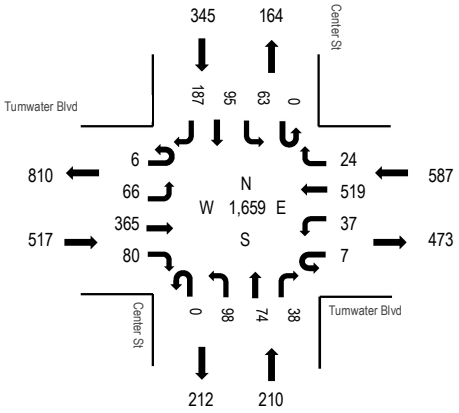
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	17	0	3	0	20	4:00 PM	0	0	0	0	0
4:15 PM	10	0	5	0	15	4:15 PM	0	0	0	0	0
4:30 PM	8	0	2	0	10	4:30 PM	0	0	0	0	0
4:45 PM	16	0	2	0	18	4:45 PM	0	0	0	0	0
5:00 PM	7	0	3	0	10	5:00 PM	0	0	0	0	0
5:15 PM	8	0	8	0	16	5:15 PM	0	0	0	0	0
5:30 PM	6	0	3	0	9	5:30 PM	0	0	0	0	0
5:45 PM	3	0	3	0	6	5:45 PM	0	0	0	0	0
Count Total	75	0	29	0	104	Count Total	0	0	0	0	0
Peak Hour	41	0	12	0	53	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

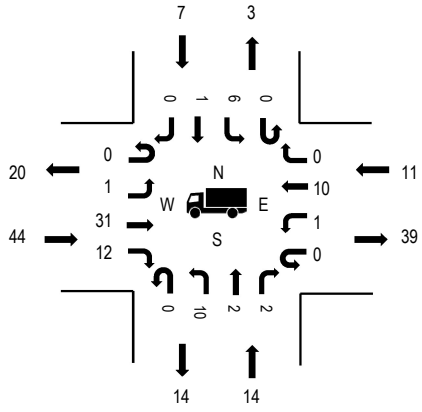
Location: 4 Center St & Tumwater Blvd PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

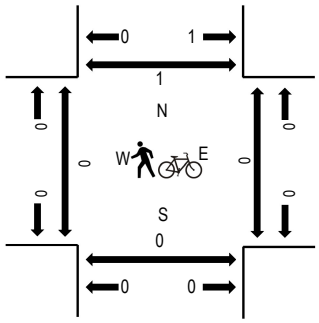
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	8.5%	0.94
WB	1.9%	0.87
NB	6.7%	0.77
SB	2.0%	0.72
All	4.6%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				Center St Northbound				Center St Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	12	95	22	1	2	129	7	0	39	16	10	0	12	21	54	420	1,619
4:15 PM	1	26	104	12	4	5	115	6	1	32	17	7	0	7	12	27	376	1,651
4:30 PM	0	22	98	12	0	6	125	10	0	24	29	15	0	20	27	55	443	1,659
4:45 PM	2	16	95	24	1	13	118	8	0	17	19	5	0	9	20	33	380	1,556
5:00 PM	2	10	70	29	5	7	153	3	0	29	15	10	0	26	25	68	452	1,418
5:15 PM	2	18	102	15	1	11	123	3	0	28	11	8	0	8	23	31	384	
5:30 PM	0	16	85	24	1	16	82	8	0	21	10	7	0	5	20	45	340	
5:45 PM	0	12	77	13	1	6	61	3	0	14	13	6	0	7	16	13	242	
Count Total	7	132	726	151	14	66	906	48	1	204	130	68	0	94	164	326	3,037	
Peak Hour	6	66	365	80	7	37	519	24	0	98	74	38	0	63	95	187	1,659	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

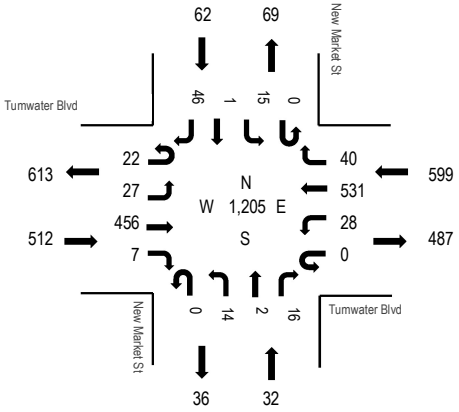
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	20	2	5	5	32	4:00 PM	0	0	0	0	0
4:15 PM	10	3	4	1	18	4:15 PM	0	0	0	0	0
4:30 PM	8	2	3	2	15	4:30 PM	0	0	0	1	1
4:45 PM	17	3	2	2	24	4:45 PM	0	0	0	0	0
5:00 PM	11	2	3	2	18	5:00 PM	0	0	0	0	0
5:15 PM	8	7	3	1	19	5:15 PM	0	0	0	0	0
5:30 PM	6	1	1	2	10	5:30 PM	0	0	0	0	0
5:45 PM	2	0	4	2	8	5:45 PM	0	0	0	0	0
Count Total	82	20	25	17	144	Count Total	0	0	0	1	1
Peak Hour	44	14	11	7	76	Peak Hour	0	0	0	1	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

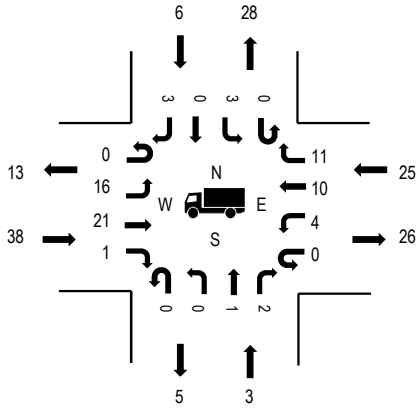
Location: 5 New Market St & Tumwater Blvd PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

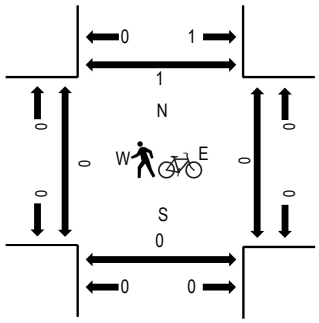
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	7.4%	0.87
WB	4.2%	0.82
NB	9.4%	0.80
SB	9.7%	0.74
All	6.0%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				New Market St Northbound				New Market St Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	1	4	105	0	0	5	131	4	0	8	0	11	0	2	0	6	277	1,156
4:15 PM	7	6	122	2	0	6	122	6	0	3	0	5	0	4	0	10	293	1,205
4:30 PM	9	7	128	3	0	5	132	9	0	4	0	6	0	3	1	8	315	1,203
4:45 PM	5	10	98	0	0	9	116	11	0	3	2	2	0	5	0	10	271	1,117
5:00 PM	1	4	108	2	0	8	161	14	0	4	0	3	0	3	0	18	326	1,027
5:15 PM	9	3	131	1	0	12	111	5	0	1	0	4	0	4	0	10	291	
5:30 PM	1	6	102	5	0	10	88	4	0	1	0	4	0	3	0	5	229	
5:45 PM	0	1	80	3	0	13	68	5	0	3	0	3	0	2	0	3	181	
Count Total	33	41	874	16	0	68	929	58	0	27	2	38	0	26	1	70	2,183	
Peak Hour	22	27	456	7	0	28	531	40	0	14	2	16	0	15	1	46	1,205	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	9	0	4	0	13	4:00 PM	0	0	0	0	0
4:15 PM	10	1	8	0	19	4:15 PM	0	0	0	0	0
4:30 PM	7	1	6	2	16	4:30 PM	0	0	0	1	1
4:45 PM	14	1	6	2	23	4:45 PM	0	0	0	0	0
5:00 PM	7	0	5	2	14	5:00 PM	0	0	0	0	0
5:15 PM	9	0	2	2	13	5:15 PM	0	0	0	0	0
5:30 PM	8	1	3	0	12	5:30 PM	0	0	0	0	0
5:45 PM	3	0	4	0	7	5:45 PM	0	0	0	0	0
Count Total	67	4	38	8	117	Count Total	0	0	0	1	1
Peak Hour	38	3	25	6	72	Peak Hour	0	0	0	1	1

Prepared for: **SCJ Alliance**

Traffic Count Consultants, Inc.

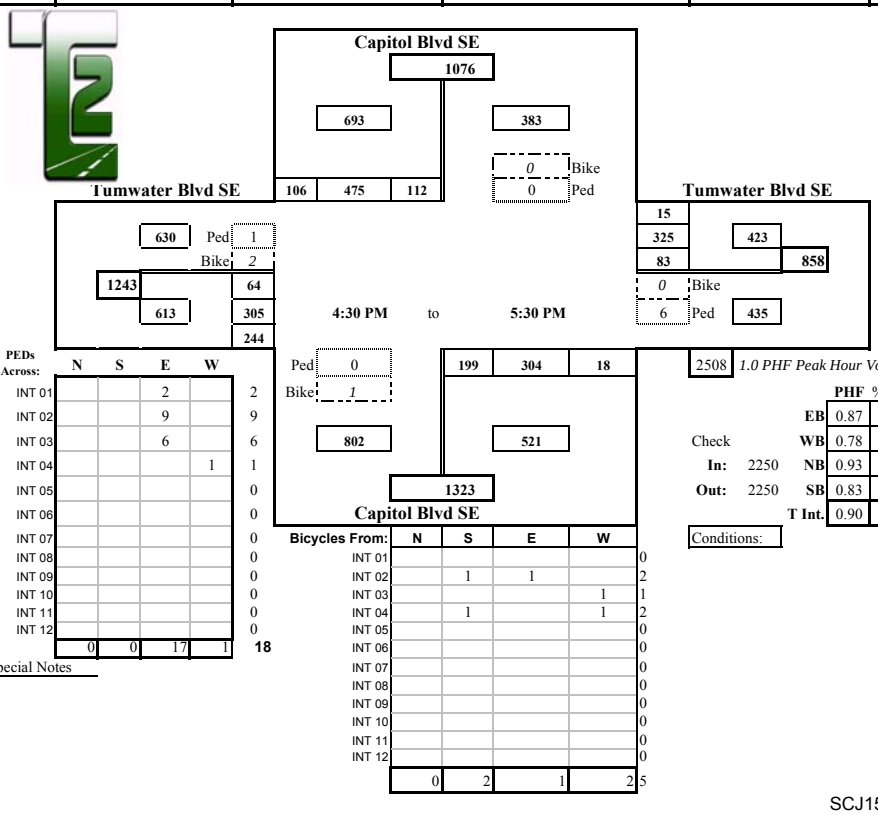
Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Capitol Blvd SE & Tumwater Blvd SE **Date of Count:** Wed 6/24/2015

Location: Tumwater, Washington **Checked By:** Jess

Time Interval	From North on (SB) Capitol Blvd SE				From South on (NB) Capitol Blvd SE				From East on (WB) Tumwater Blvd SE				From West on (EB) Tumwater Blvd SE				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	16	118	19	0	54	85	3	2	12	58	1	7	19	63	59	507
4:30 P	1	11	121	23	2	54	67	4	1	12	53	3	3	24	54	42	468
4:45 P	0	37	94	33	0	52	76	5	0	24	72	1	7	17	82	78	571
5:00 P	4	16	106	19	1	47	72	3	0	14	70	5	5	20	81	62	515
5:15 P	0	33	141	36	4	53	83	4	1	28	104	4	4	13	78	50	627
5:30 P	3	26	134	18	1	47	73	6	1	17	79	5	5	14	64	54	537
5:45 P	3	23	105	28	2	67	69	1	4	14	57	2	3	10	61	52	489
6:00 P	7	20	85	14	1	50	75	3	1	10	45	8	3	7	39	43	399
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	20	182	904	190	11	424	600	29	10	131	538	29	37	124	522	440	4113
Peak Hour:	4:30 PM to 5:30 PM																
Total	7	112	475	106	6	199	304	18	2	83	325	15	21	64	305	244	2250
Approach	693				521				423				613				2250
%HV	1.0%				1.2%				0.5%				3.4%				1.6%
PHF	0.83				0.93				0.78				0.87				0.90



PEDs Across:

	N	S	E	W	
INT 01			2		2
INT 02			9		9
INT 03			6		6
INT 04				1	1
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	17	1	18

Bicycles From:

	N	S	E	W	
INT 01					0
INT 02		1	1		2
INT 03				1	1
INT 04		1		1	2
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	2	1	2	5

2508 *1.0 PHF Peak Hour Volume*

		PHF	%HV
		EB	0.87	3.4%
Check		WB	0.78	0.5%
In:	2250	NB	0.93	1.2%
Out:	2250	SB	0.83	1.0%
		T Int.	0.90	1.6%

Conditions:

Special Notes

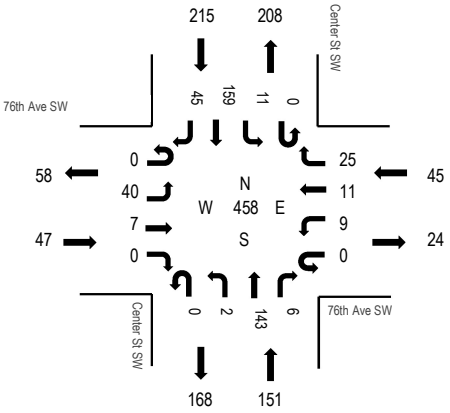
SCJ15075M_07p

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

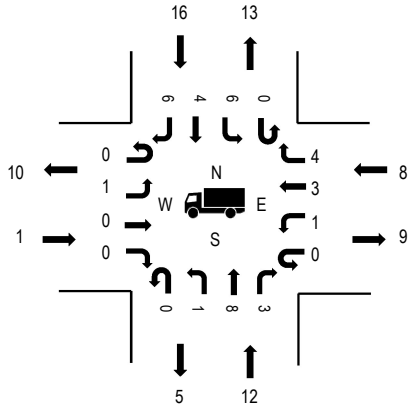
Location: 8 Center St SW & 76th Ave SW PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

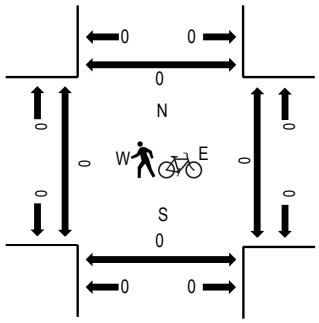
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.1%	0.73
WB	17.8%	0.80
NB	7.9%	0.79
SB	7.4%	0.87
All	8.1%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	76th Ave SW Eastbound				76th Ave SW Westbound				Center St SW Northbound				Center St SW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	17	3	0	0	2	2	5	1	0	34	1	0	5	27	10	107	438
4:15 PM	0	16	3	0	0	3	4	3	0	1	35	1	0	3	19	9	97	453
4:30 PM	0	12	2	0	0	1	4	7	0	1	46	1	0	2	32	12	120	458
4:45 PM	0	11	2	0	0	3	3	5	0	0	26	2	0	4	45	13	114	447
5:00 PM	0	13	3	0	0	2	2	4	0	1	38	1	0	2	45	11	122	402
5:15 PM	0	4	0	0	0	3	2	9	0	0	33	2	0	3	37	9	102	
5:30 PM	0	4	1	0	0	3	1	5	0	0	30	2	0	1	53	9	109	
5:45 PM	0	4	1	0	0	3	1	0	0	0	27	0	0	4	22	7	69	
Count Total	0	81	15	0	0	20	19	38	1	3	269	10	0	24	280	80	840	
Peak Hour	0	40	7	0	0	9	11	25	0	2	143	6	0	11	159	45	458	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

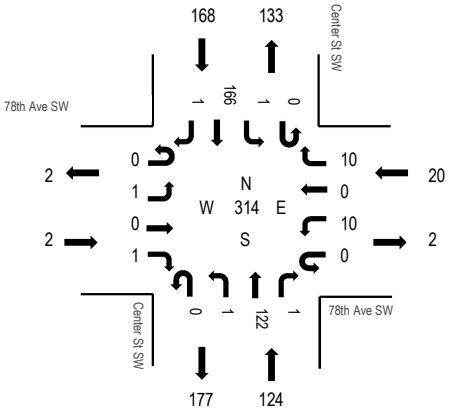
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	1	11	14	4:00 PM	0	0	0	0	0
4:15 PM	0	2	3	6	11	4:15 PM	0	0	0	0	0
4:30 PM	0	4	1	6	11	4:30 PM	0	0	0	0	0
4:45 PM	0	3	1	5	9	4:45 PM	0	0	0	0	0
5:00 PM	0	2	1	4	7	5:00 PM	0	0	0	0	0
5:15 PM	1	3	5	1	10	5:15 PM	0	0	0	0	0
5:30 PM	0	0	2	1	3	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2	5:45 PM	1	0	0	0	1
Count Total	1	16	14	36	67	Count Total	1	0	0	0	1
Peak Hour	1	12	8	16	37	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

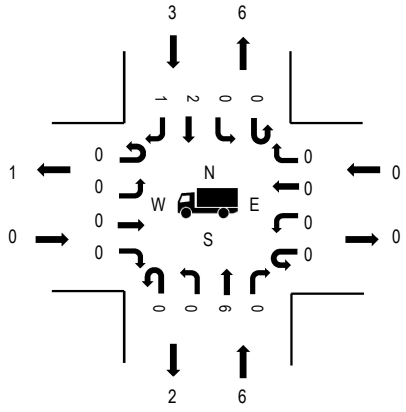
Location: 9 Center St SW & 78th Ave SW PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:00 PM - 05:00 PM

Peak Hour

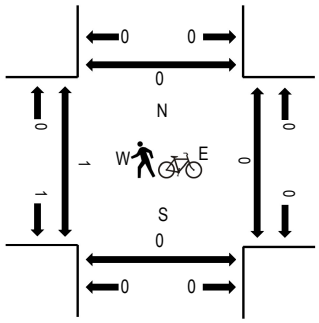
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.50
WB	0.0%	0.45
NB	4.8%	0.91
SB	1.8%	0.79
All	2.9%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	78th Ave SW Eastbound				78th Ave SW Westbound				Center St SW Northbound				Center St SW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	1	0	0	0	4	0	7	0	1	30	0	0	0	48	0	91	314
4:15 PM	0	0	0	0	0	3	0	3	0	0	34	0	0	1	41	0	82	262
4:30 PM	0	0	0	0	0	2	0	0	0	0	31	0	0	0	52	1	86	227
4:45 PM	0	0	0	1	0	1	0	0	0	0	27	1	0	0	25	0	55	172
5:00 PM	0	0	0	0	0	1	0	0	0	0	17	1	0	0	19	1	39	149
5:15 PM	0	0	0	0	0	2	0	1	0	0	15	0	0	2	27	0	47	
5:30 PM	0	0	0	0	0	2	0	0	0	0	11	0	0	1	17	0	31	
5:45 PM	0	0	0	0	0	1	0	0	0	0	16	0	0	0	15	0	32	
Count Total	0	1	0	1	0	16	0	11	0	1	181	2	0	4	244	2	463	
Peak Hour	0	1	0	1	0	10	0	10	0	1	122	1	0	1	166	1	314	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

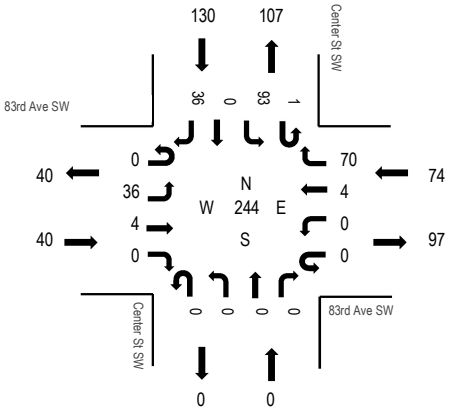
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	0	2	4	4:00 PM	0	0	0	0	0
4:15 PM	0	3	0	0	3	4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	1	2	4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	1	0	0	0	1
5:00 PM	0	0	0	2	2	5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	2	3	5:45 PM	0	0	0	0	0
Count Total	0	7	0	7	14	Count Total	1	0	0	0	1
Peak Hour	0	6	0	3	9	Peak Hour	1	0	0	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

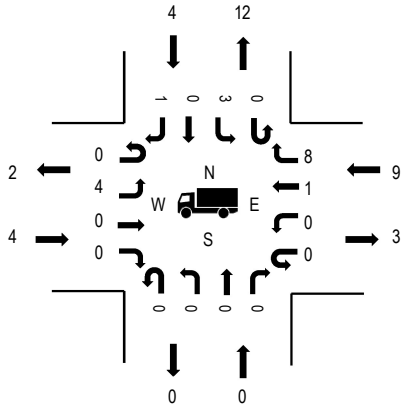
Location: 10 Center St SW & 83rd Ave SW PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

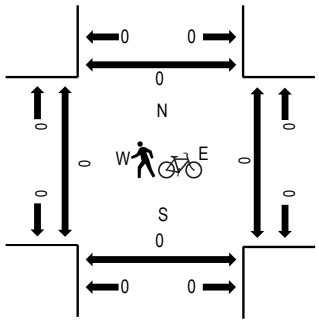
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	10.0%	0.71
WB	12.2%	0.58
NB	0.0%	0.00
SB	3.1%	0.90
All	7.0%	0.80

Traffic Counts - Motorized Vehicles

Interval Start Time	83rd Ave SW Eastbound				83rd Ave SW Westbound				Center St SW Northbound				Center St SW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	3	2	0	0	0	3	9	0	0	0	0	0	23	0	10	50	237
4:15 PM	0	11	2	0	0	0	1	14	0	0	0	0	0	13	0	11	52	242
4:30 PM	0	14	0	0	0	0	2	30	0	0	0	0	0	24	0	6	76	244
4:45 PM	0	10	2	0	0	0	1	10	0	0	0	0	1	25	0	10	59	221
5:00 PM	0	4	2	0	0	0	1	14	0	0	0	0	0	29	0	5	55	209
5:15 PM	0	8	0	0	0	0	0	16	0	0	0	0	0	15	0	15	54	
5:30 PM	0	5	2	0	0	0	0	12	0	0	0	0	0	25	0	9	53	
5:45 PM	0	7	0	0	0	0	0	15	0	0	0	0	0	17	0	8	47	
Count Total	0	62	10	0	0	0	8	120	0	0	0	0	1	171	0	74	446	
Peak Hour	0	36	4	0	0	0	4	70	0	0	0	0	1	93	0	36	244	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

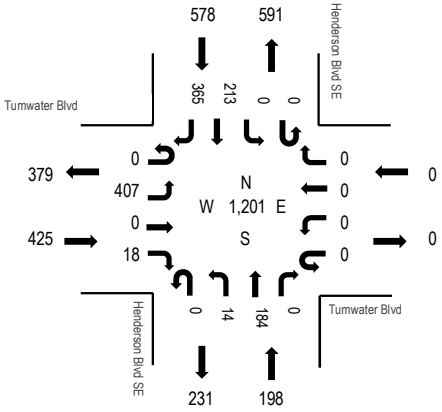
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	0	2	2	5	4:00 PM	0	0	0	0	0
4:15 PM	1	0	3	0	4	4:15 PM	0	0	0	0	0
4:30 PM	3	0	4	1	8	4:30 PM	0	0	0	0	0
4:45 PM	1	0	2	2	5	4:45 PM	0	0	0	0	0
5:00 PM	0	0	1	1	2	5:00 PM	0	0	0	0	0
5:15 PM	0	0	2	0	2	5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	1	1	5:45 PM	0	0	0	0	0
Count Total	6	0	14	7	27	Count Total	0	0	0	0	0
Peak Hour	4	0	9	4	17	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

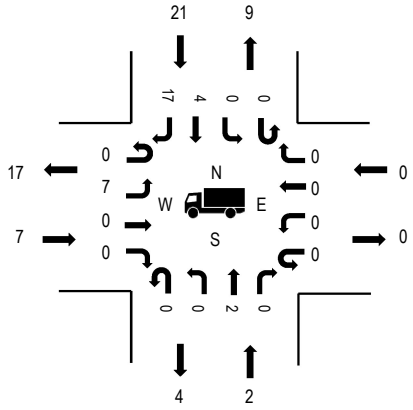
Location: 11 Henderson Blvd SE & Tumwater Blvd PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:00 PM - 05:00 PM

Peak Hour

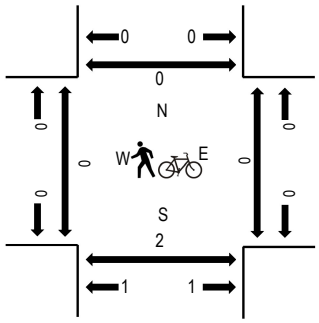
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.6%	0.85
WB	0.0%	0.00
NB	1.0%	0.93
SB	3.6%	0.86
All	2.5%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	Tumwater Blvd Eastbound				Tumwater Blvd Westbound				Henderson Blvd SE Northbound				Henderson Blvd SE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	97	0	6	0	0	0	0	0	1	48	0	0	0	55	82	289	1,201
4:15 PM	0	76	0	6	0	0	0	0	0	6	43	0	0	0	59	89	279	1,201
4:30 PM	0	125	0	3	0	0	0	0	0	4	49	0	0	0	49	76	306	1,185
4:45 PM	0	109	0	3	0	0	0	0	0	3	44	0	0	0	50	118	327	1,127
5:00 PM	0	107	0	7	0	0	0	0	0	5	40	0	0	0	36	94	289	988
5:15 PM	0	106	0	4	0	0	0	0	0	3	39	0	0	0	40	71	263	
5:30 PM	0	108	0	4	0	0	0	0	0	3	14	0	0	0	43	76	248	
5:45 PM	0	62	0	6	0	0	0	0	0	0	18	0	0	0	31	71	188	
Count Total	0	790	0	39	0	0	0	0	0	25	295	0	0	0	363	677	2,189	
Peak Hour	0	407	0	18	0	0	0	0	0	14	184	0	0	0	213	365	1,201	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

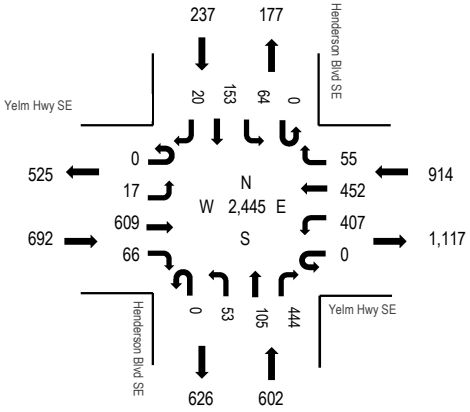
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	3	0	0	5	8	4:00 PM	0	1	0	0	1
4:15 PM	1	0	0	6	7	4:15 PM	0	1	0	0	1
4:30 PM	1	1	0	4	6	4:30 PM	0	0	0	0	0
4:45 PM	2	1	0	6	9	4:45 PM	0	0	0	0	0
5:00 PM	0	1	0	3	4	5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	3	3	5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	3	3	5:45 PM	0	0	0	0	0
Count Total	7	3	0	30	40	Count Total	0	2	0	0	2
Peak Hour	7	2	0	21	30	Peak Hour	0	2	0	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

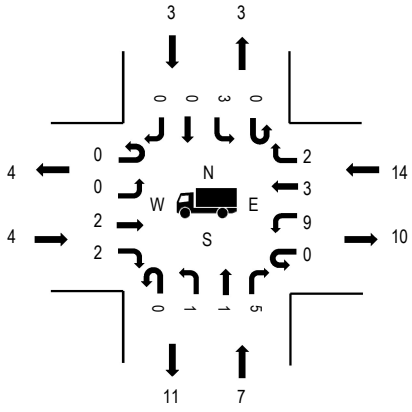
Location: 12 Henderson Blvd SE & Yelm Hwy SE PM
Date: Wednesday, November 10, 2021
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

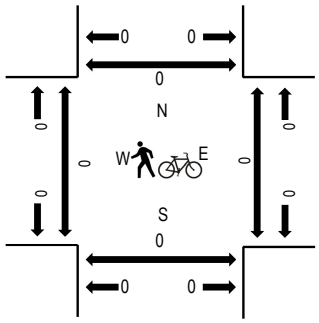
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.6%	0.92
WB	1.5%	0.95
NB	1.2%	0.97
SB	1.3%	0.97
All	1.1%	0.98

Traffic Counts - Motorized Vehicles

Interval Start Time	Yelm Hwy SE Eastbound				Yelm Hwy SE Westbound				Henderson Blvd SE Northbound				Henderson Blvd SE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	4	157	25	0	100	114	22	0	12	24	101	0	26	41	9	635	2,442
4:15 PM	0	5	119	20	0	106	103	13	0	15	27	99	0	24	41	5	577	2,399
4:30 PM	0	3	134	16	0	105	120	15	0	10	29	116	0	8	48	5	609	2,445
4:45 PM	0	8	165	16	0	108	99	19	0	12	31	103	0	16	38	6	621	2,416
5:00 PM	0	2	149	15	0	99	115	11	0	14	30	102	0	18	33	4	592	2,307
5:15 PM	0	4	161	19	0	95	118	10	0	17	15	123	0	22	34	5	623	
5:30 PM	0	6	162	18	0	82	112	16	0	9	21	92	1	25	33	3	580	
5:45 PM	0	6	164	19	0	65	109	15	0	15	10	55	0	15	33	6	512	
Count Total	0	38	1,211	148	0	760	890	121	0	104	187	791	1	154	301	43	4,749	
Peak Hour	0	17	609	66	0	407	452	55	0	53	105	444	0	64	153	20	2,445	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	2	10	1	14	4:00 PM	0	0	0	0	0
4:15 PM	1	3	6	1	11	4:15 PM	0	0	1	0	1
4:30 PM	0	1	8	0	9	4:30 PM	0	0	0	0	0
4:45 PM	0	5	4	1	10	4:45 PM	0	0	0	0	0
5:00 PM	2	1	2	0	5	5:00 PM	0	0	0	0	0
5:15 PM	2	0	0	2	4	5:15 PM	0	0	0	0	0
5:30 PM	1	0	1	0	2	5:30 PM	0	0	0	0	0
5:45 PM	3	0	0	2	5	5:45 PM	0	0	0	0	0
Count Total	10	12	31	7	60	Count Total	0	0	1	0	1
Peak Hour	4	7	14	3	28	Peak Hour	0	0	0	0	0

Appendix B

Level of Service (LOS) Calculations

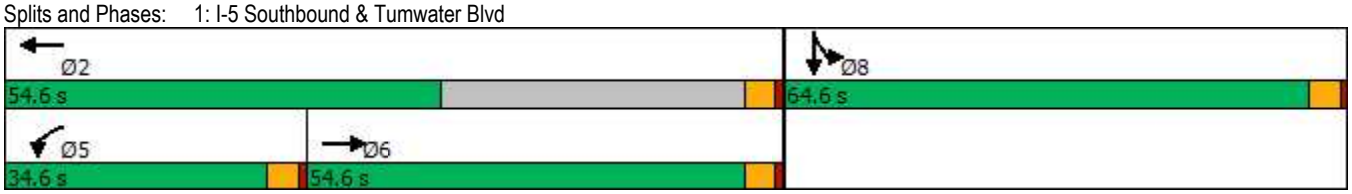
2021 Existing

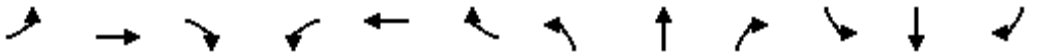
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	818	63	239	205	0	0	0	0	1105	6	200
Future Volume (vph)	0	818	63	239	205	0	0	0	0	1105	6	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	0		0	310		0	0		0	300		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		1022			789			640			375	
Travel Time (s)		19.9			15.4			10.9			6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	10%	3%	0%	0%	0%	0%	6%	100%	2%
Shared Lane Traffic (%)										40%		
Turn Type		NA		Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases												
Detector Phase		6		5	2					8	8	
Switch Phase												
Minimum Initial (s)		10.0		6.0	10.0					5.0	5.0	
Minimum Split (s)		29.6		10.6	26.6					32.6	32.6	
Total Split (s)		54.6		34.6	54.6					64.6	64.6	
Total Split (%)		35.5%		22.5%	35.5%					42.0%	42.0%	
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6					4.6	4.6	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Min		None	Min					None	None	

Intersection Summary

Area Type: Other
Cycle Length: 153.8
Actuated Cycle Length: 146.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-5 Southbound & Tumwater Blvd





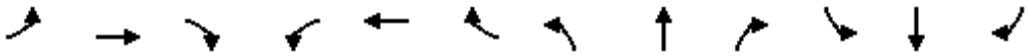
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	818	63	239	205	0	0	0	0	1105	6	200
Future Volume (veh/h)	0	818	63	239	205	0	0	0	0	1105	6	200
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1788	1847	1752	1856	0				1811	418	1870
Adj Flow Rate, veh/h	0	889	68	260	223	0				1409	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	4	0	10	3	0				6	100	2
Cap, veh/h	0	993	76	284	953	0				1453	176	0
Arrive On Green	0.00	0.31	0.31	0.17	0.51	0.00				0.42	0.00	0.00
Sat Flow, veh/h	0	3287	245	1668	1856	0				3450	418	0
Grp Volume(v), veh/h	0	472	485	260	223	0				1409	0	0
Grp Sat Flow(s),veh/h/ln	0	1698	1744	1668	1856	0				1725	418	0
Q Serve(g_s), s	0.0	37.4	37.4	21.6	9.4	0.0				56.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	37.4	37.4	21.6	9.4	0.0				56.4	0.0	0.0
Prop In Lane	0.00		0.14	1.00		0.00				1.00		0.00
Lane Grp Cap(c), veh/h	0	528	542	284	953	0				1453	176	0
V/C Ratio(X)	0.00	0.89	0.89	0.92	0.23	0.00				0.97	0.00	0.00
Avail Cap(c_a), veh/h	0	602	618	355	953	0				1468	178	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	46.4	46.4	57.5	19.0	0.0				39.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	14.7	14.4	24.3	0.1	0.0				16.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.8	18.2	11.0	4.1	0.0				26.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	61.1	60.8	81.8	19.1	0.0				56.6	0.0	0.0
LnGrp LOS	A	E	E	F	B	A				E	A	A
Approach Vol, veh/h		957			483						1409	
Approach Delay, s/veh		60.9			52.9						56.6	
Approach LOS		E			D						E	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.0			28.6	48.4		64.0				
Change Period (Y+Rc), s		4.6			4.6	4.6		4.6				
Max Green Setting (Gmax), s		50.0			30.0	50.0		60.0				
Max Q Clear Time (g_c+I1), s		11.4			23.6	39.4		58.4				
Green Ext Time (p_c), s		1.3			0.4	4.4		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			57.4									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	1490	0	0	362	582	77	2	402	0	0	0
Future Volume (vph)	405	1490	0	0	362	582	77	2	402	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Storage Length (ft)	225		0	0		0	0		150	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		789			886			278			339	
Travel Time (s)		15.4			17.3			4.7			5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	0%	6%	10%	4%	0%	5%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	167.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	405	1490	0	0	362	582	77	2	402	0	0	0
Future Vol, veh/h	405	1490	0	0	362	582	77	2	402	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	225	-	-	-	-	0	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	6	0	0	6	10	4	0	5	0	0	0
Mvmt Flow	440	1620	0	0	393	633	84	2	437	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	393	0	-	-	-	0	2893	2893	810
Stage 1	-	-	-	-	-	-	2500	2500	-
Stage 2	-	-	-	-	-	-	393	393	-
Critical Hdwy	4.13	-	-	-	-	-	6.66	6.5	6.975
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.5	-
Follow-up Hdwy	2.219	-	-	-	-	-	3.538	4	3.3475
Pot Cap-1 Maneuver	1164	-	0	0	-	0	~ 15	16	~ 319
Stage 1	-	-	0	0	-	0	~ 47	58	-
Stage 2	-	-	0	0	-	0	676	609	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1164	-	-	-	-	-	~ 9	0	~ 319
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 9	0	-
Stage 1	-	-	-	-	-	-	~ 29	0	-
Stage 2	-	-	-	-	-	-	676	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.1	0	$ 945.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT
Capacity (veh/h)	9	319	1164	-	-
HCM Lane V/C Ratio	9.541	1.37	0.378	-	-
HCM Control Delay (s)	$ 4652.8	217.3	10	-	-
HCM Lane LOS	F	F	A	-	-
HCM 95th %tile Q(veh)	12.2	22.1	1.8	-	-

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1797	75	0	889	0	2
Future Volume (vph)	1797	75	0	889	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			3%	0%	
Link Speed (mph)	35			35	30	
Link Distance (ft)	886			556	563	
Travel Time (s)	17.3			10.8	12.8	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	6%	0%	0%	8%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1797	75	0	889	0	2
Future Vol, veh/h	1797	75	0	889	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	3	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	6	0	0	8	0	0
Mvmt Flow	2165	90	0	1071	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1128
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	-	0	201
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	201
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.1
HCM LOS			C

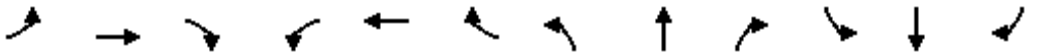
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	201	-	-	-
HCM Lane V/C Ratio	0.012	-	-	-
HCM Control Delay (s)	23.1	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	967	707	137	64	587	67	158	148	64	52	132	193
Future Volume (vph)	967	707	137	64	587	67	158	148	64	52	132	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	275		250	250		100	300		0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		347			996			489			318	
Travel Time (s)		6.8			19.4			9.5			6.2	
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	23%	0%	7%	3%	22%	7%	5%	15%	15%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2			4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	33.0		12.0	33.0	33.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (s)	76.0	76.0		16.0	16.0	16.0	46.0	46.0	46.0	21.0	36.0	36.0
Total Split (%)	43.7%	43.7%		9.2%	9.2%	9.2%	26.4%	26.4%	26.4%	12.1%	20.7%	20.7%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 174
Actuated Cycle Length: 120.6
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Center St SW/Linderson Way & Tumwater Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	967	707	137	64	587	67	158	148	64	52	132	193
Future Volume (veh/h)	967	707	137	64	587	67	158	148	64	52	132	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1826	1559	1900	1796	1856	1574	1796	1826	1678	1678	1856
Adj Flow Rate, veh/h	1051	768	149	70	638	73	172	161	70	57	143	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	23	0	7	3	22	7	5	15	15	3
Cap, veh/h	1269	1225	238	99	377	174	208	372	320	81	199	
Arrive On Green	0.37	0.42	0.42	0.05	0.11	0.11	0.14	0.21	0.21	0.05	0.12	0.00
Sat Flow, veh/h	3456	2897	562	1810	3413	1572	1499	1796	1545	1598	1678	1572
Grp Volume(v), veh/h	1051	460	457	70	638	73	172	161	70	57	143	0
Grp Sat Flow(s),veh/h/ln	1728	1735	1725	1810	1706	1572	1499	1796	1545	1598	1678	1572
Q Serve(g_s), s	25.1	18.9	18.9	3.4	10.0	3.9	10.1	7.1	3.4	3.2	7.4	0.0
Cycle Q Clear(g_c), s	25.1	18.9	18.9	3.4	10.0	3.9	10.1	7.1	3.4	3.2	7.4	0.0
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1269	733	729	99	377	174	208	372	320	81	199	
V/C Ratio(X)	0.83	0.63	0.63	0.71	1.69	0.42	0.83	0.43	0.22	0.71	0.72	
Avail Cap(c_a), veh/h	2671	1340	1333	200	377	174	662	793	682	265	556	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.1	20.5	20.5	42.1	40.3	37.6	37.9	31.3	29.8	42.3	38.5	0.0
Incr Delay (d2), s/veh	1.7	1.1	1.1	10.5	323.2	1.9	9.6	1.0	0.4	12.8	5.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	7.4	7.3	1.8	21.0	1.6	4.2	3.1	1.3	1.5	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	21.6	21.6	52.6	363.5	39.5	47.5	32.2	30.2	55.2	44.2	0.0
LnGrp LOS	C	C	C	D	F	D	D	C	C	E	D	
Approach Vol, veh/h		1968			781			403			200	A
Approach Delay, s/veh		24.9			305.4			38.4			47.4	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.3	16.0	10.6	24.7	11.0	44.3	18.6	16.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	70.0	10.0	15.0	40.0	10.0	70.0	40.0	30.0
Max Q Clear Time (g_c+I1), s	27.1	12.0	5.2	9.1	5.4	20.9	12.1	9.4
Green Ext Time (p_c), s	6.2	0.0	0.1	1.4	0.1	8.8	0.6	0.8

Intersection Summary	
HCM 6th Ctrl Delay	93.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

LANE SUMMARY

Site: 101 [5 - New Market St SW / Tumwater Blvd (AM Peak Hour) (Site Folder: 2021 Existing)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: New Market St SW													
Lane 1	13	0.0	732	0.018	100	12.0	LOS B	0.1	1.6	Full	1600	0.0	0.0
Lane 2[d]	35	6.9	944	0.037	100	5.7	LOS A	0.1	3.7	Full	1600	0.0	0.0
Approach	48	5.0		0.037		7.5	LOS A	0.1	3.7				
East: Tumwater Blvd													
Lane 1	422	5.1	1205	0.351	100	5.2	LOS A	2.2	56.9	Full	1600	0.0	0.0
Lane 2[d]	523	4.4	1492	0.351	100	4.0	LOS A	2.3	58.9	Full	1600	0.0	0.0
Approach	946	4.7		0.351		4.6	LOS A	2.3	58.9				
North: New Market St SW													
Lane 1	30	12.0	603	0.050	100	12.5	LOS B	0.2	4.9	Full	1600	0.0	0.0
Lane 2[d]	73	12.2	894	0.082	100	5.8	LOS A	0.3	8.9	Full	1600	0.0	0.0
Approach	104	12.1		0.082		7.7	LOS A	0.3	8.9				
West: Tumwater Blvd													
Lane 1	473	4.9	1352	0.350	100	6.8	LOS A	2.2	58.4	Full	1600	0.0	0.0
Lane 2[d]	559	5.6	1597	0.350	100	3.4	LOS A	2.3	59.8	Full	1600	0.0	0.0
Approach	1033	5.3		0.350		5.0	LOS A	2.3	59.8				
Intersection	2130	5.3		0.351		5.0	LOS A	2.3	59.8				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: New Market St SW

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	12	1	-	13	0.0	732	0.018	100	NA	NA
Lane 2	-	-	35	35	6.9	944	0.037	100	NA	NA
Approach	12	1	35	48	5.0		0.037			

East: Tumwater Blvd

Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	1	59	362	-	422	5.1	1205	0.351	100	NA	NA
Lane 2	-	-	407	117	523	4.4	1492	0.351	100	NA	NA
Approach	1	59	769	117	946	4.7		0.351			

North: New Market St SW

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	27	4	-	30	12.0	603	0.050	100	NA	NA
Lane 2	-	-	73	73	12.2	894	0.082	100	NA	NA
Approach	27	4	73	104	12.1		0.082			

West: Tumwater Blvd

Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	27	187	260	-	473	4.9	1352	0.350	100	NA	NA
Lane 2	-	-	534	25	559	5.6	1597	0.350	100	NA	NA
Approach	27	187	794	25	1033	5.3		0.350			

	Total	%HV	Deg.Satn (v/c)
Intersection	2130	5.3	0.351

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

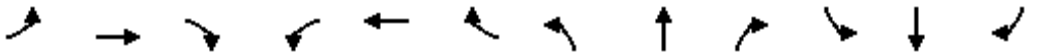
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	325	98	235	669	15	104	194	226	15	256	62
Future Volume (vph)	48	325	98	235	669	15	104	194	226	15	256	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	225		0	150		0	225		250
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		463			747			690			587	
Travel Time (s)		9.0			14.6			13.4			11.4	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	9%	5%	5%	9%	4%	27%	15%	5%	7%	7%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6									8
Detector Phase	1	6	7	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.0	35.0	12.0	12.0	35.0		12.0	40.0		12.0	40.0	40.0
Total Split (s)	26.0	46.0	36.0	41.0	76.0		36.0	36.0		31.0	36.0	36.0
Total Split (%)	14.9%	26.4%	20.7%	23.6%	43.7%		20.7%	20.7%		17.8%	20.7%	20.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min		None	None		None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 174
Actuated Cycle Length: 107.9
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Capitol Blvd SE & Tumwater Blvd



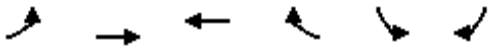
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	325	98	235	669	15	104	194	226	15	256	62
Future Volume (veh/h)	48	325	98	235	669	15	104	194	226	15	256	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1826	1826	1767	1841	1500	1678	1826	1796	1796	1856	1900
Adj Flow Rate, veh/h	58	392	118	283	806	18	125	234	272	18	308	75
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	9	5	5	9	4	27	15	5	7	7	3	0
Cap, veh/h	90	487	518	330	1431	32	212	385	344	42	628	287
Arrive On Green	0.05	0.27	0.27	0.20	0.41	0.41	0.07	0.22	0.22	0.02	0.18	0.18
Sat Flow, veh/h	1682	1826	1546	1682	3497	78	3100	1735	1547	1711	3526	1610
Grp Volume(v), veh/h	58	392	118	283	403	421	125	234	272	18	308	75
Grp Sat Flow(s),veh/h/ln	1682	1826	1546	1682	1749	1827	1550	1735	1547	1711	1763	1610
Q Serve(g_s), s	2.8	16.6	4.5	13.4	14.6	14.6	3.2	10.0	13.7	0.9	6.5	3.3
Cycle Q Clear(g_c), s	2.8	16.6	4.5	13.4	14.6	14.6	3.2	10.0	13.7	0.9	6.5	3.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	487	518	330	715	747	212	385	344	42	628	287
V/C Ratio(X)	0.64	0.81	0.23	0.86	0.56	0.56	0.59	0.61	0.79	0.43	0.49	0.26
Avail Cap(c_a), veh/h	408	885	855	713	1483	1549	1127	630	562	518	1281	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	28.3	19.8	32.1	18.7	18.7	37.3	28.9	30.3	39.7	30.5	29.2
Incr Delay (d2), s/veh	7.5	3.8	0.3	6.5	0.8	0.8	1.0	1.5	4.1	2.5	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.4	1.6	5.8	5.6	5.9	1.2	4.2	5.3	0.4	2.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	32.1	20.0	38.6	19.6	19.5	38.3	30.4	34.4	42.2	31.1	29.7
LnGrp LOS	D	C	C	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		568			1107			631			401	
Approach Delay, s/veh		31.0			24.4			33.7			31.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	39.8	8.0	24.3	22.2	28.0	11.7	20.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	70.0	25.0	30.0	35.0	40.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	4.8	16.6	2.9	15.7	15.4	18.6	5.2	8.5
Green Ext Time (p_c), s	0.1	7.4	0.0	2.6	0.8	3.3	0.2	2.1

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	116	48	61	127	68	105
Future Volume (vph)	116	48	61	127	68	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35	35		35	
Link Distance (ft)		699	561		2528	
Travel Time (s)		13.6	10.9		49.2	
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles (%)	5%	2%	0%	6%	12%	1%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

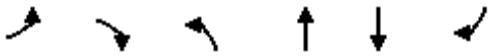
Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	116	48	61	127	68	105
Future Vol, veh/h	116	48	61	127	68	105
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	63	63	63	63	63	63
Heavy Vehicles, %	5	2	0	6	12	1
Mvmt Flow	184	76	97	202	108	167

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	299	0	-	0	642	198
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	444	-
Critical Hdwy	4.15	-	-	-	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.245	-	-	-	3.608	3.309
Pot Cap-1 Maneuver	1245	-	-	-	423	846
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1245	-	-	-	358	846
Mov Cap-2 Maneuver	-	-	-	-	358	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	626	-

Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	17.8
HCM LOS			C

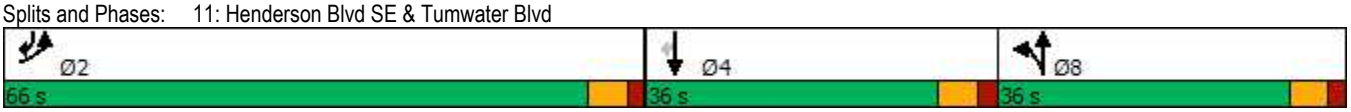
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1245	-	-	-	551
HCM Lane V/C Ratio	0.148	-	-	-	0.498
HCM Control Delay (s)	8.4	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	2.8

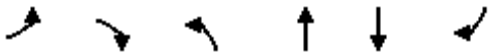


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	208	9	35	148	141	484
Future Volume (vph)	208	9	35	148	141	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			125
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	844			630	421	
Travel Time (s)	16.4			12.3	8.2	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	11%	3%	3%	2%	2%
Shared Lane Traffic (%)						
Turn Type	Prot		Split	NA	NA	pm+ov
Protected Phases	2		8	8	4	2
Permitted Phases						4
Detector Phase	2		8	8	4	2
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	32.0		14.0	14.0	32.0	32.0
Total Split (s)	66.0		36.0	36.0	36.0	66.0
Total Split (%)	47.8%		26.1%	26.1%	26.1%	47.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min		None	None	None	Min

Intersection Summary	
Area Type:	Other
Cycle Length: 138	
Actuated Cycle Length: 68.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Henderson Blvd SE & Tumwater Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	208	9	35	148	141	484
Future Volume (veh/h)	208	9	35	148	141	484
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1737	1856	1856	1870	1870
Adj Flow Rate, veh/h	242	10	41	172	164	234
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	7	11	3	3	2	2
Cap, veh/h	361	15	65	272	397	337
Arrive On Green	0.22	0.22	0.18	0.18	0.21	0.21
Sat Flow, veh/h	1629	67	354	1484	1870	1585
Grp Volume(v), veh/h	253	0	213	0	164	234
Grp Sat Flow(s),veh/h/ln	1703	0	1838	0	1870	1585
Q Serve(g_s), s	6.4	0.0	5.0	0.0	3.6	6.4
Cycle Q Clear(g_c), s	6.4	0.0	5.0	0.0	3.6	6.4
Prop In Lane	0.96	0.04	0.19			1.00
Lane Grp Cap(c), veh/h	378	0	336	0	397	337
V/C Ratio(X)	0.67	0.00	0.63	0.00	0.41	0.70
Avail Cap(c_a), veh/h	2172	0	1172	0	1193	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	17.8	0.0	16.0	17.1
Incr Delay (d2), s/veh	4.3	0.0	4.2	0.0	0.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	2.2	0.0	1.4	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.1	0.0	21.9	0.0	16.7	19.7
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	253			213	398	
Approach Delay, s/veh	21.1			21.9	18.5	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	16.4	16.0	14.6
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	60.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	8.4	8.4	7.0
Green Ext Time (p_c), s	2.0	1.6	2.1

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

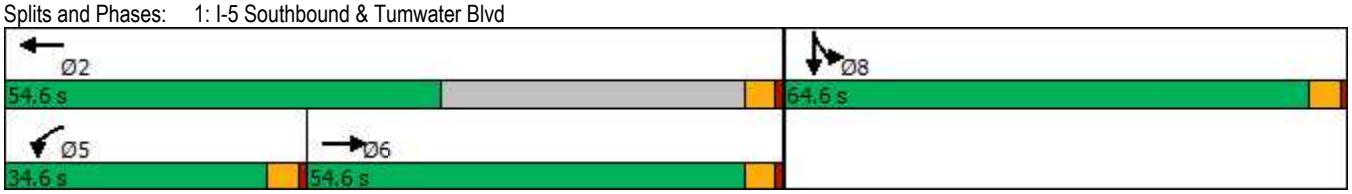
User approved volume balancing among the lanes for turning movement.

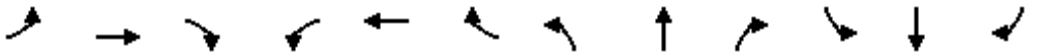
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	352	99	327	277	0	0	0	0	468	2	210
Future Volume (vph)	0	352	99	327	277	0	0	0	0	468	2	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	0		0	310		0	0		0	300		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		1022			789			640			375	
Travel Time (s)		19.9			15.4			10.9			6.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)										25%		
Turn Type		NA		Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases												
Detector Phase		6		5	2					8	8	
Switch Phase												
Minimum Initial (s)		10.0		6.0	10.0					5.0	5.0	
Minimum Split (s)		29.6		10.6	26.6					32.6	32.6	
Total Split (s)		54.6		34.6	54.6					64.6	64.6	
Total Split (%)		35.5%		22.5%	35.5%					42.0%	42.0%	
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6					4.6	4.6	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Min		None	Min					None	None	

Intersection Summary

Area Type: Other
Cycle Length: 153.8
Actuated Cycle Length: 94
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-5 Southbound & Tumwater Blvd





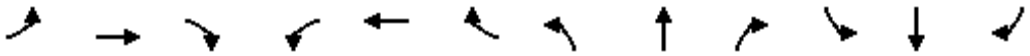
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	352	99	327	277	0	0	0	0	468	2	210
Future Volume (veh/h)	0	352	99	327	277	0	0	0	0	468	2	210
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1832	1847	1900	1900	0				1885	1900	1900
Adj Flow Rate, veh/h	0	400	112	372	315	0				386	206	239
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	1	0	0	0	0				1	0	0
Cap, veh/h	0	589	163	437	1009	0				590	264	306
Arrive On Green	0.00	0.22	0.22	0.24	0.53	0.00				0.33	0.33	0.33
Sat Flow, veh/h	0	2784	746	1810	1900	0				1795	802	930
Grp Volume(v), veh/h	0	257	255	372	315	0				386	0	445
Grp Sat Flow(s),veh/h/ln	0	1741	1698	1810	1900	0				1795	0	1733
Q Serve(g_s), s	0.0	8.9	9.0	12.9	6.1	0.0				12.0	0.0	15.2
Cycle Q Clear(g_c), s	0.0	8.9	9.0	12.9	6.1	0.0				12.0	0.0	15.2
Prop In Lane	0.00		0.44	1.00		0.00				1.00		0.54
Lane Grp Cap(c), veh/h	0	381	372	437	1009	0				590	0	569
V/C Ratio(X)	0.00	0.67	0.69	0.85	0.31	0.00				0.65	0.00	0.78
Avail Cap(c_a), veh/h	0	1329	1296	829	1451	0				1645	0	1587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.4	23.5	23.7	8.6	0.0				18.8	0.0	19.9
Incr Delay (d2), s/veh	0.0	2.1	2.2	4.7	0.2	0.0				1.2	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.6	5.6	2.1	0.0				4.6	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.5	25.8	28.4	8.8	0.0				20.0	0.0	22.2
LnGrp LOS	A	C	C	C	A	A				C	A	C
Approach Vol, veh/h		512			687						831	
Approach Delay, s/veh		25.6			19.4						21.2	
Approach LOS		C			B						C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		39.4			20.4	18.9		26.1				
Change Period (Y+Rc), s		4.6			4.6	4.6		4.6				
Max Green Setting (Gmax), s		50.0			30.0	50.0		60.0				
Max Q Clear Time (g_c+I1), s		8.1			14.9	11.0		17.2				
Green Ext Time (p_c), s		2.0			1.0	3.3		4.3				

Intersection Summary												
HCM 6th Ctrl Delay			21.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	642	0	0	541	1362	80	0	257	0	0	0
Future Volume (vph)	178	642	0	0	541	1362	80	0	257	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Storage Length (ft)	225		0	0		0	0		150	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		789			907			278			339	
Travel Time (s)		15.4			17.7			4.7			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	7%	0%	0%	1%	3%	0%	0%	10%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	18.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	642	0	0	541	1362	80	0	257	0	0	0
Future Vol, veh/h	178	642	0	0	541	1362	80	0	257	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	225	-	-	-	-	0	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	7	0	0	1	3	0	0	10	0	0	0
Mvmt Flow	202	730	0	0	615	1548	91	0	292	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	615	0	-	-	-	0	1749	1749	365
Stage 1	-	-	-	-	-	-	1134	1134	-
Stage 2	-	-	-	-	-	-	615	615	-
Critical Hdwy	4.13	-	-	-	-	-	6.6	6.5	7.05
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.219	-	-	-	-	-	3.5	4	3.395
Pot Cap-1 Maneuver	963	-	0	0	-	0	~ 87	87	613
Stage 1	-	-	0	0	-	0	273	280	-
Stage 2	-	-	0	0	-	0	543	485	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	963	-	-	-	-	-	~ 69	0	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 69	0	-
Stage 1	-	-	-	-	-	-	216	0	-
Stage 2	-	-	-	-	-	-	543	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.1	0	87.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT
Capacity (veh/h)	69	613	963	-	-
HCM Lane V/C Ratio	1.318	0.476	0.21	-	-
HCM Control Delay (s)	$ 318.5	16.1	9.7	-	-
HCM Lane LOS	F	C	A	-	-
HCM 95th %tile Q(veh)	7.4	2.6	0.8	-	-

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	872	23	0	1872	0	8
Future Volume (vph)	872	23	0	1872	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			3%	0%	
Link Speed (mph)	35			35	30	
Link Distance (ft)	907			494	563	
Travel Time (s)	17.7			9.6	12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	14%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	872	23	0	1872	0	8
Future Vol, veh/h	872	23	0	1872	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	3	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	14	0	2	0	0
Mvmt Flow	969	26	0	2080	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	498
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	-	0	523
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	523
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

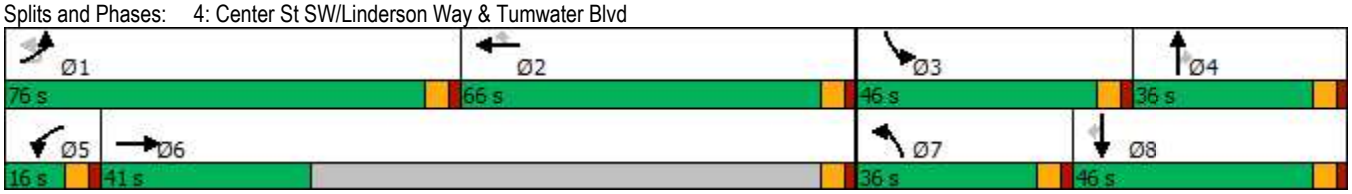
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	523	-	-	-
HCM Lane V/C Ratio	0.017	-	-	-
HCM Control Delay (s)	12	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

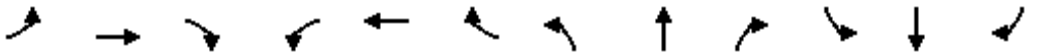
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	591	143	44	755	24	202	74	38	63	95	932
Future Volume (vph)	128	591	143	44	755	24	202	74	38	63	95	932
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	275		250	250		100	300		0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		387			996			489			318	
Travel Time (s)		7.5			19.4			9.5			6.2	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	15%	3%	2%	0%	10%	3%	5%	10%	1%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2			4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	33.0		12.0	33.0	33.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (s)	76.0	41.0		16.0	66.0	66.0	36.0	36.0	36.0	46.0	46.0	46.0
Total Split (%)	33.9%	18.3%		7.1%	29.5%	29.5%	16.1%	16.1%	16.1%	20.5%	20.5%	20.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 224
Actuated Cycle Length: 149.4
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Center St SW/Linderson Way & Tumwater Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	591	143	44	755	24	202	74	38	63	95	932
Future Volume (veh/h)	128	591	143	44	755	24	202	74	38	63	95	932
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1678	1856	1870	1900	1752	1856	1826	1752	1885	1900
Adj Flow Rate, veh/h	139	642	155	48	821	26	220	80	41	68	103	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	15	3	2	0	10	3	5	10	1	0
Cap, veh/h	268	984	237	91	1210	548	272	353	294	103	167	
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.16	0.19	0.19	0.06	0.09	0.00
Sat Flow, veh/h	3456	2681	646	1767	3554	1609	1668	1856	1547	1668	1885	1610
Grp Volume(v), veh/h	139	402	395	48	821	26	220	80	41	68	103	0
Grp Sat Flow(s),veh/h/ln	1728	1678	1649	1767	1777	1609	1668	1856	1547	1668	1885	1610
Q Serve(g_s), s	2.8	14.5	14.5	1.9	14.4	0.8	9.2	2.7	1.6	2.9	3.8	0.0
Cycle Q Clear(g_c), s	2.8	14.5	14.5	1.9	14.4	0.8	9.2	2.7	1.6	2.9	3.8	0.0
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	616	605	91	1210	548	272	353	294	103	167	
V/C Ratio(X)	0.52	0.65	0.65	0.53	0.68	0.05	0.81	0.23	0.14	0.66	0.62	
Avail Cap(c_a), veh/h	3328	808	794	243	2933	1328	689	766	639	918	1037	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	19.1	19.2	33.6	20.6	16.1	29.3	24.9	24.5	33.4	31.9	0.0
Incr Delay (d2), s/veh	1.9	1.4	1.4	5.7	0.8	0.0	6.8	0.4	0.3	8.4	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.4	5.3	0.9	5.6	0.3	4.0	1.1	0.6	1.4	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	20.6	20.6	39.3	21.4	16.1	36.1	25.3	24.8	41.8	36.3	0.0
LnGrp LOS	C	C	C	D	C	B	D	C	C	D	D	
Approach Vol, veh/h		936			895			341			171	A
Approach Delay, s/veh		22.6			22.2			32.2			38.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	30.8	10.5	19.8	9.7	32.7	17.8	12.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	70.0	60.0	40.0	30.0	10.0	35.0	30.0	40.0
Max Q Clear Time (g_c+I1), s	4.8	16.4	4.9	4.7	3.9	16.5	11.2	5.8
Green Ext Time (p_c), s	0.6	8.3	0.2	0.6	0.0	5.7	0.7	0.6

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

LANE SUMMARY

Site: 101 [5 - New Market St SW / Tumwater Blvd (PM Peak Hour) (Site Folder: 2021 Existing)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: New Market St SW													
Lane 1[d]	23	4.8	1047	0.022	100	11.0	LOS B	0.1	2.0	Full	1600	0.0	0.0
Lane 2	17	12.5	765	0.023	100	6.2	LOS A	0.1	2.1	Full	1600	0.0	0.0
Approach	40	8.1		0.023		8.9	LOS A	0.1	2.1				
East: Tumwater Blvd													
Lane 1	402	2.8	1358	0.296	100	4.1	LOS A	1.7	43.9	Full	1600	0.0	0.0
Lane 2[d]	472	4.3	1598	0.296	100	3.5	LOS A	1.7	45.0	Full	1600	0.0	0.0
Approach	874	3.6		0.296		3.8	LOS A	1.7	45.0				
North: New Market St SW													
Lane 1	17	18.8	531	0.033	100	13.6	LOS B	0.1	3.1	Full	1600	0.0	0.0
Lane 2[d]	68	6.5	1003	0.068	100	5.5	LOS A	0.3	6.8	Full	1600	0.0	0.0
Approach	86	9.0		0.068		7.1	LOS A	0.3	6.8				
West: Tumwater Blvd													
Lane 1	356	10.7	1323	0.269	100	5.1	LOS A	1.5	41.9	Full	1600	0.0	0.0
Lane 2[d]	446	4.8	1655	0.269	100	3.2	LOS A	1.6	40.6	Full	1600	0.0	0.0
Approach	802	7.4		0.269		4.0	LOS A	1.6	41.9				
Intersection	1802	5.7		0.296		4.2	LOS A	1.7	45.0				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: New Market St SW

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	21	2	-	23	4.8	1047	0.022	100	NA	NA
Lane 2	-	-	17	17	12.5	765	0.023	100	NA	NA
Approach	21	2	17	40	8.1		0.023			

East: Tumwater Blvd

Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	1	30	370	-	402	2.8	1358	0.296	100	NA	NA
Lane 2	-	-	429	43	472	4.3	1598	0.296	100	NA	NA
Approach	1	30	799	43	874	3.6		0.296			

North: New Market St SW

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	16	1	-	17	18.8		531	0.033	100	NA	NA
Lane 2	-	-	68	68	6.5		1003	0.068	100	NA	NA
Approach	16	1	68	86	9.0			0.068			

West: Tumwater Blvd

Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	35	42	279	-	356	10.7	1323	0.269	100	NA	NA
Lane 2	-	-	435	11	446	4.8	1655	0.269	100	NA	NA
Approach	35	42	714	11	802	7.4		0.269			

	Total	%HV	Deg.Satn (v/c)
Intersection	1802	5.7	0.296

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

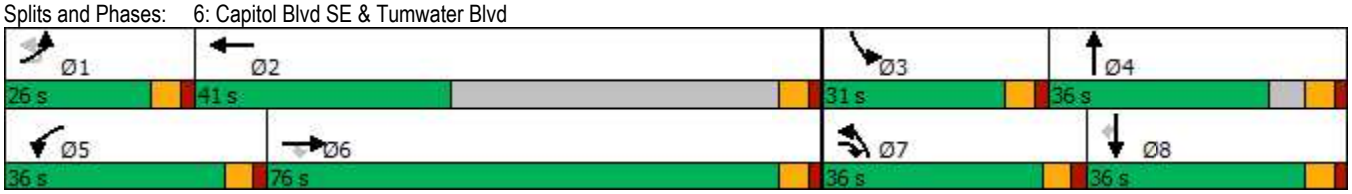
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

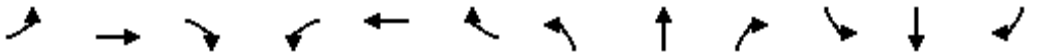
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	343	275	93	366	17	224	342	20	126	535	119
Future Volume (vph)	72	343	275	93	366	17	224	342	20	126	535	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	225		0	150		0	225		250
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		463			766			690			587	
Travel Time (s)		9.0			14.9			13.4			11.4	
Confl. Peds. (#/hr)			1	1			3		6	6		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6									8
Detector Phase	1	6	7	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.0	35.0	12.0	12.0	35.0		12.0	40.0		12.0	40.0	40.0
Total Split (s)	26.0	76.0	36.0	36.0	41.0		36.0	36.0		31.0	36.0	36.0
Total Split (%)	14.1%	41.3%	19.6%	19.6%	22.3%		19.6%	19.6%		16.8%	19.6%	19.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min		None	None		None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 184
Actuated Cycle Length: 109.3
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Capitol Blvd SE & Tumwater Blvd





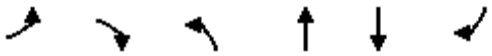
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	343	275	93	366	17	224	342	20	126	535	119
Future Volume (veh/h)	72	343	275	93	366	17	224	342	20	126	535	119
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	80	381	306	103	407	19	249	380	22	140	594	132
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	1	1	1
Cap, veh/h	111	509	588	136	1001	47	347	847	49	177	878	389
Arrive On Green	0.06	0.27	0.27	0.08	0.29	0.29	0.10	0.25	0.25	0.10	0.25	0.25
Sat Flow, veh/h	1767	1856	1571	1795	3484	162	3483	3440	198	1795	3582	1586
Grp Volume(v), veh/h	80	381	306	103	209	217	249	197	205	140	594	132
Grp Sat Flow(s),veh/h/ln	1767	1856	1571	1795	1791	1856	1742	1791	1848	1795	1791	1586
Q Serve(g_s), s	3.5	14.8	11.9	4.4	7.4	7.4	5.5	7.3	7.4	6.0	11.8	5.4
Cycle Q Clear(g_c), s	3.5	14.8	11.9	4.4	7.4	7.4	5.5	7.3	7.4	6.0	11.8	5.4
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	111	509	588	136	514	533	347	441	455	177	878	389
V/C Ratio(X)	0.72	0.75	0.52	0.76	0.41	0.41	0.72	0.45	0.45	0.79	0.68	0.34
Avail Cap(c_a), veh/h	449	1650	1554	684	796	825	1328	683	704	570	1365	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	26.1	19.1	35.7	22.6	22.6	34.4	25.1	25.2	34.7	26.9	24.5
Incr Delay (d2), s/veh	8.4	2.7	0.9	8.3	0.6	0.6	1.0	0.7	0.7	3.0	0.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.5	4.2	2.2	3.0	3.2	2.3	3.1	3.2	2.7	4.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	28.7	20.0	43.9	23.2	23.2	35.4	25.8	25.9	37.6	27.8	25.0
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		767			529			651			866	
Approach Delay, s/veh		26.9			27.3			29.5			29.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	28.6	13.8	25.4	12.0	27.6	13.8	25.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	35.0	25.0	30.0	30.0	70.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.5	9.4	8.0	9.4	6.4	16.8	7.5	13.8
Green Ext Time (p_c), s	0.1	3.0	0.2	2.2	0.2	4.7	0.4	3.9

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	4	1	308	269	5
Future Volume (vph)	5	4	1	308	269	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	35			35	35	
Link Distance (ft)	579			477	489	
Travel Time (s)	11.3			9.3	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	33%	0%	0%	6%	6%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

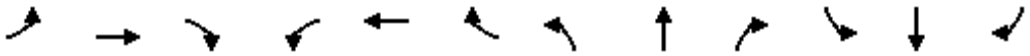
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	308	269	5
Future Vol, veh/h	5	4	1	308	269	5
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, %	33	0	0	6	6	0
Mvmt Flow	5	4	1	335	292	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	632	295	297	0	-	0
Stage 1	295	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.73	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	399	749	1276	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	399	749	1276	-	-	-
Mov Cap-2 Maneuver	399	-	-	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1276	-	504	-	-
HCM Lane V/C Ratio	0.001	-	0.019	-	-
HCM Control Delay (s)	7.8	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	7	0	9	11	38	2	212	6	14	202	57
Future Volume (vph)	59	7	0	9	11	38	2	212	6	14	202	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		551			457			1032			477	
Travel Time (s)		10.7			8.9			20.1			9.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	0%	0%	11%	27%	16%	50%	6%	50%	55%	3%	13%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

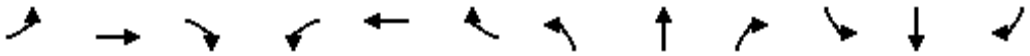
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	7	0	9	11	38	2	212	6	14	202	57
Future Vol, veh/h	59	7	0	9	11	38	2	212	6	14	202	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	0	0	11	27	16	50	6	50	55	3	13
Mvmt Flow	63	7	0	10	12	40	2	226	6	15	215	61

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	535	512	246	512	539	229	276	0	0	232	0	0
Stage 1	276	276	-	233	233	-	-	-	-	-	-	-
Stage 2	259	236	-	279	306	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.2	7.21	6.77	6.36	4.6	-	-	4.65	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.21	5.77	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.21	5.77	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.3	3.599	4.243	3.444	2.65	-	-	2.695	-	-
Pot Cap-1 Maneuver	455	468	798	458	416	777	1055	-	-	1078	-	-
Stage 1	728	685	-	750	668	-	-	-	-	-	-	-
Stage 2	744	713	-	708	619	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	416	459	798	446	408	777	1055	-	-	1078	-	-
Mov Cap-2 Maneuver	416	459	-	446	408	-	-	-	-	-	-	-
Stage 1	727	673	-	749	667	-	-	-	-	-	-	-
Stage 2	692	712	-	688	608	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.3	11.6	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1055	-	-	420	604	1078	-	-
HCM Lane V/C Ratio	0.002	-	-	0.167	0.102	0.014	-	-
HCM Control Delay (s)	8.4	0	-	15.3	11.6	8.4	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.3	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	10	0	16	1	202	1	2	208	1
Future Volume (vph)	2	0	1	10	0	16	1	202	1	2	208	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		408			554			2528			1032	
Travel Time (s)		9.3			12.6			49.2			20.1	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	1%	100%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

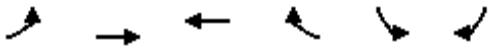
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	10	0	16	1	202	1	2	208	1
Future Vol, veh/h	2	0	1	10	0	16	1	202	1	2	208	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	1	100
Mvmt Flow	2	0	1	12	0	19	1	235	1	2	242	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	495	486	244	485	486	236	244	0	0	236	0	0
Stage 1	248	248	-	238	238	-	-	-	-	-	-	-
Stage 2	247	238	-	247	248	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	488	484	800	496	484	808	1334	-	-	1343	-	-
Stage 1	760	705	-	770	712	-	-	-	-	-	-	-
Stage 2	761	712	-	761	705	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	475	482	799	494	482	808	1333	-	-	1343	-	-
Mov Cap-2 Maneuver	475	482	-	494	482	-	-	-	-	-	-	-
Stage 1	758	703	-	769	711	-	-	-	-	-	-	-
Stage 2	743	711	-	758	703	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	10.8	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	549	649	1343	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.047	0.002	-	-
HCM Control Delay (s)	7.7	0	-	11.6	10.8	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	69	4	4	134	158	61
Future Volume (vph)	69	4	4	134	158	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35	35		35	
Link Distance (ft)		699	561		2528	
Travel Time (s)		13.6	10.9		49.2	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	11%	0%	25%	11%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

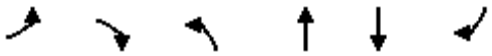
Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	4	4	134	158	61
Future Vol, veh/h	69	4	4	134	158	61
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	80	80	80	80	80	80
Heavy Vehicles, %	11	0	25	11	3	3
Mvmt Flow	86	5	5	168	198	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	173	0	-	0	266	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.21	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.299	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1351	-	-	-	721	966
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1351	-	-	-	675	966
Mov Cap-2 Maneuver	-	-	-	-	675	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	SB
HCM Control Delay, s	7.4	0	12.7
HCM LOS			B

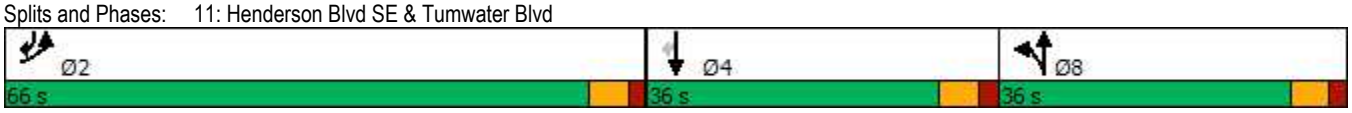
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1351	-	-	-	737
HCM Lane V/C Ratio	0.064	-	-	-	0.371
HCM Control Delay (s)	7.8	0	-	-	12.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7

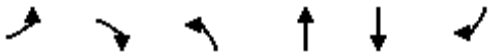


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	452	20	16	204	236	405
Future Volume (vph)	452	20	16	204	236	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			125
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	844			630	421	
Travel Time (s)	16.4			12.3	8.2	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	2%	5%
Shared Lane Traffic (%)						
Turn Type	Prot		Split	NA	NA	pm+ov
Protected Phases	2		8	8	4	2
Permitted Phases						4
Detector Phase	2		8	8	4	2
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	32.0		14.0	14.0	32.0	32.0
Total Split (s)	66.0		36.0	36.0	36.0	66.0
Total Split (%)	47.8%		26.1%	26.1%	26.1%	47.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min		None	None	None	Min

Intersection Summary	
Area Type:	Other
Cycle Length: 138	
Actuated Cycle Length: 99.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Henderson Blvd SE & Tumwater Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	452	20	16	204	236	405
Future Volume (veh/h)	452	20	16	204	236	405
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1900	1900	1885	1870	1826
Adj Flow Rate, veh/h	491	22	17	222	257	252
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	1	2	5
Cap, veh/h	604	27	24	311	396	327
Arrive On Green	0.36	0.36	0.18	0.18	0.21	0.21
Sat Flow, veh/h	1693	76	134	1745	1870	1547
Grp Volume(v), veh/h	514	0	239	0	257	252
Grp Sat Flow(s),veh/h/ln	1772	0	1878	0	1870	1547
Q Serve(g_s), s	18.7	0.0	8.5	0.0	8.9	10.9
Cycle Q Clear(g_c), s	18.7	0.0	8.5	0.0	8.9	10.9
Prop In Lane	0.96	0.04	0.07			1.00
Lane Grp Cap(c), veh/h	633	0	335	0	396	327
V/C Ratio(X)	0.81	0.00	0.71	0.00	0.65	0.77
Avail Cap(c_a), veh/h	1495	0	793	0	789	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	27.5	0.0	25.6	26.4
Incr Delay (d2), s/veh	5.4	0.0	5.9	0.0	1.8	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	4.1	0.0	3.9	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.1	0.0	33.4	0.0	27.4	30.2
LnGrp LOS	C	A	C	A	C	C
Approach Vol, veh/h	514			239	509	
Approach Delay, s/veh	26.1			33.4	28.8	
Approach LOS	C			C	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	31.4	21.0	18.7
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	60.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	20.7	12.9	10.5
Green Ext Time (p_c), s	4.7	2.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

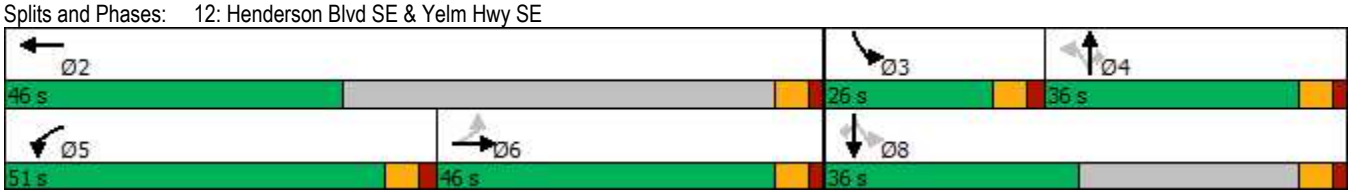
Notes

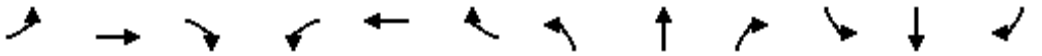
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	676	73	452	502	61	59	117	493	71	170	22
Future Volume (vph)	19	676	73	452	502	61	59	117	493	71	170	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	450		0	150		125	0		125
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1049			946			585			420	
Travel Time (s)		20.4			18.4			11.4			8.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	3%	2%	1%	4%	2%	1%	1%	5%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Prot	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		6		5	2			4		3	8	
Permitted Phases	6						4		4	8		8
Detector Phase	6	6		5	2		4	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.0	6.0		6.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	23.0	23.0		11.0	33.0		34.0	34.0	34.0	11.0	32.0	32.0
Total Split (s)	46.0	46.0		51.0	46.0		36.0	36.0	36.0	26.0	36.0	36.0
Total Split (%)	28.9%	28.9%		32.1%	28.9%		22.6%	22.6%	22.6%	16.4%	22.6%	22.6%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes		
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 159	
Actuated Cycle Length: 119.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 12: Henderson Blvd SE & Yelm Hwy SE





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	676	73	452	502	61	59	117	493	71	170	22
Future Volume (veh/h)	19	676	73	452	502	61	59	117	493	71	170	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1841	1870	1885	1885	1826	1900	1900
Adj Flow Rate, veh/h	19	690	74	461	512	62	60	119	0	72	173	22
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	3	2	1	4	2	1	1	5	0	0
Cap, veh/h	322	919	98	545	2110	255	188	169		203	394	334
Arrive On Green	0.28	0.28	0.28	0.31	0.66	0.66	0.09	0.09	0.00	0.05	0.21	0.21
Sat Flow, veh/h	852	3263	350	1781	3218	388	1188	1885	1598	1739	1900	1610
Grp Volume(v), veh/h	19	378	386	461	284	290	60	119	0	72	173	22
Grp Sat Flow(s),veh/h/ln	852	1791	1822	1781	1791	1815	1188	1885	1598	1739	1900	1610
Q Serve(g_s), s	1.4	16.9	16.9	21.2	5.7	5.7	4.2	5.4	0.0	3.2	7.0	1.0
Cycle Q Clear(g_c), s	1.4	16.9	16.9	21.2	5.7	5.7	4.2	5.4	0.0	3.2	7.0	1.0
Prop In Lane	1.00		0.19	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	504	513	545	1174	1190	188	169		203	394	334
V/C Ratio(X)	0.06	0.75	0.75	0.85	0.24	0.24	0.32	0.71		0.35	0.44	0.07
Avail Cap(c_a), veh/h	471	818	832	915	1174	1190	489	646		514	651	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	28.7	28.7	28.5	6.2	6.2	38.3	38.8	0.0	32.4	30.3	27.9
Incr Delay (d2), s/veh	0.1	2.7	2.7	7.7	0.1	0.1	0.4	2.0	0.0	0.4	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.3	7.4	9.7	1.8	1.9	1.2	2.5	0.0	1.3	3.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	31.4	31.4	36.1	6.3	6.3	38.6	40.8	0.0	32.8	31.2	28.0
LnGrp LOS	C	C	C	D	A	A	D	D		C	C	C
Approach Vol, veh/h		783			1035			179	A		267	
Approach Delay, s/veh		31.2			19.6			40.1			31.4	
Approach LOS		C			B			D			C	

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		63.4	10.3	13.8	32.8	30.7		24.2				
Change Period (Y+Rc), s		6.0	6.0	6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		40.0	20.0	30.0	45.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s		7.7	5.2	7.4	23.2	18.9		9.0				
Green Ext Time (p_c), s		3.6	0.1	0.5	3.6	5.8		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			26.6									
HCM 6th LOS			C									

Notes

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

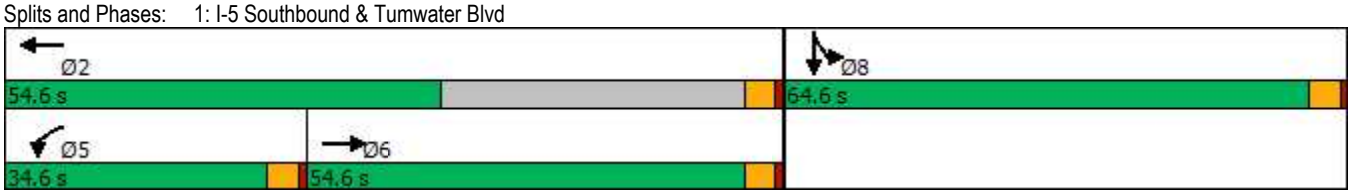
2023 No Action

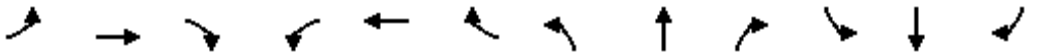
Lanes, Volumes, Timings
1: I-5 Southbound & Tumwater Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	885	68	259	222	0	0	0	0	1195	6	216
Future Volume (vph)	0	885	68	259	222	0	0	0	0	1195	6	216
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	10%	3%	0%	0%	0%	0%	6%	100%	2%
Shared Lane Traffic (%)										40%		
Turn Type		NA		Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases												
Detector Phase		6		5	2					8	8	
Switch Phase												
Minimum Initial (s)		10.0		6.0	10.0					5.0	5.0	
Minimum Split (s)		29.6		10.6	26.6					32.6	32.6	
Total Split (s)		54.6		34.6	54.6					64.6	64.6	
Total Split (%)		35.5%		22.5%	35.5%					42.0%	42.0%	
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6					4.6	4.6	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Min		None	Min					None	None	

Intersection Summary
Cycle Length: 153.8
Actuated Cycle Length: 150.8
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-5 Southbound & Tumwater Blvd





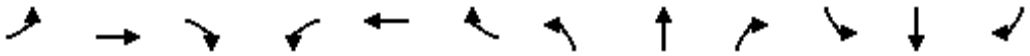
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	885	68	259	222	0	0	0	0	1195	6	216
Future Volume (veh/h)	0	885	68	259	222	0	0	0	0	1195	6	216
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1788	1847	1752	1856	0				1811	418	1870
Adj Flow Rate, veh/h	0	962	74	282	241	0				1523	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	4	0	10	3	0				6	100	2
Cap, veh/h	0	1030	79	303	993	0				1391	169	0
Arrive On Green	0.00	0.32	0.32	0.18	0.53	0.00				0.40	0.00	0.00
Sat Flow, veh/h	0	3285	246	1668	1856	0				3450	418	0
Grp Volume(v), veh/h	0	511	525	282	241	0				1523	0	0
Grp Sat Flow(s),veh/h/ln	0	1698	1743	1668	1856	0				1725	418	0
Q Serve(g_s), s	0.0	43.4	43.4	24.8	10.3	0.0				60.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	43.4	43.4	24.8	10.3	0.0				60.0	0.0	0.0
Prop In Lane	0.00		0.14	1.00		0.00				1.00		0.00
Lane Grp Cap(c), veh/h	0	548	562	303	993	0				1391	169	0
V/C Ratio(X)	0.00	0.93	0.93	0.93	0.24	0.00				1.10	0.00	0.00
Avail Cap(c_a), veh/h	0	571	586	336	993	0				1391	169	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	48.9	48.9	60.0	18.5	0.0				44.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	22.2	21.8	30.2	0.1	0.0				54.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	21.6	22.1	13.0	4.5	0.0				35.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	71.1	70.7	90.1	18.6	0.0				98.9	0.0	0.0
LnGrp LOS	A	E	E	F	B	A				F	A	A
Approach Vol, veh/h		1036			523						1523	
Approach Delay, s/veh		70.9			57.2						98.9	
Approach LOS		E			E						F	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		84.2			31.6	52.6		64.6				
Change Period (Y+Rc), s		4.6			4.6	4.6		4.6				
Max Green Setting (Gmax), s		50.0			30.0	50.0		60.0				
Max Q Clear Time (g_c+I1), s		12.3			26.8	45.4		62.0				
Green Ext Time (p_c), s		1.4			0.3	2.5		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	82.4
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	438	1612	0	0	392	629	83	2	435	0	0	0
Future Volume (vph)	438	1612	0	0	392	629	83	2	435	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	0%	6%	10%	4%	0%	5%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Free	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	271

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	438	1612	0	0	392	629	83	2	435	0	0	0
Future Vol, veh/h	438	1612	0	0	392	629	83	2	435	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	225	-	-	-	-	0	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	6	0	0	6	10	4	0	5	0	0	0
Mvmt Flow	476	1752	0	0	426	684	90	2	473	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	426	0	-	-	-	0	3130	3130	876
Stage 1	-	-	-	-	-	-	2704	2704	-
Stage 2	-	-	-	-	-	-	426	426	-
Critical Hdwy	4.13	-	-	-	-	-	6.66	6.5	6.975
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.5	-
Follow-up Hdwy	2.219	-	-	-	-	-	3.538	4	3.3475
Pot Cap-1 Maneuver	1132	-	0	0	-	0	~ 10	11	~ 288
Stage 1	-	-	0	0	-	0	~ 36	46	-
Stage 2	-	-	0	0	-	0	653	589	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1132	-	-	-	-	-	~ 6	0	~ 288
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 6	0	-
Stage 1	-	-	-	-	-	-	~ 21	0	-
Stage 2	-	-	-	-	-	-	653	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	$ 1534.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT
Capacity (veh/h)	6	288	1132	-	-
HCM Lane V/C Ratio	15.399	1.642	0.421	-	-
HCM Control Delay (s)	$ 7672.6	$ 335.3	10.5	-	-
HCM Lane LOS	F	F	B	-	-
HCM 95th %tile Q(veh)	13.4	29.2	2.1	-	-

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1944	81	0	962	0	2
Future Volume (vph)	1944	81	0	962	0	2
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	6%	0%	0%	8%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1944	81	0	962	0	2
Future Vol, veh/h	1944	81	0	962	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	3	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	6	0	0	8	0	0
Mvmt Flow	2342	98	0	1159	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1220
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	-	0	175
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	175
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

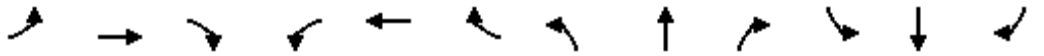
Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	175	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-
HCM Control Delay (s)	25.9	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1046	765	148	69	635	72	171	160	69	56	143	209
Future Volume (vph)	1046	765	148	69	635	72	171	160	69	56	143	209
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	23%	0%	7%	3%	22%	7%	5%	15%	15%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2			4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	33.0		12.0	33.0	33.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (s)	76.0	76.0		16.0	16.0	16.0	46.0	46.0	46.0	21.0	36.0	36.0
Total Split (%)	43.7%	43.7%		9.2%	9.2%	9.2%	26.4%	26.4%	26.4%	12.1%	20.7%	20.7%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None

Intersection Summary
Cycle Length: 174
Actuated Cycle Length: 129.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Center St SW/Linderson Way & Tumwater Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1046	765	148	69	635	72	171	160	69	56	143	209
Future Volume (veh/h)	1046	765	148	69	635	72	171	160	69	56	143	209
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1826	1559	1900	1796	1856	1574	1796	1826	1678	1678	1856
Adj Flow Rate, veh/h	1137	832	161	75	690	78	186	174	75	61	155	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	23	0	7	3	22	7	5	15	15	3
Cap, veh/h	1344	1262	244	97	342	158	220	397	341	78	206	
Arrive On Green	0.39	0.44	0.44	0.05	0.10	0.10	0.15	0.22	0.22	0.05	0.12	0.00
Sat Flow, veh/h	3456	2899	561	1810	3413	1572	1499	1796	1545	1598	1678	1572
Grp Volume(v), veh/h	1137	498	495	75	690	78	186	174	75	61	155	0
Grp Sat Flow(s),veh/h/ln	1728	1735	1725	1810	1706	1572	1499	1796	1545	1598	1678	1572
Q Serve(g_s), s	29.9	22.7	22.7	4.1	10.0	4.7	12.0	8.3	4.0	3.8	8.9	0.0
Cycle Q Clear(g_c), s	29.9	22.7	22.7	4.1	10.0	4.7	12.0	8.3	4.0	3.8	8.9	0.0
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1344	755	751	97	342	158	220	397	341	78	206	
V/C Ratio(X)	0.85	0.66	0.66	0.77	2.01	0.49	0.84	0.44	0.22	0.78	0.75	
Avail Cap(c_a), veh/h	2427	1218	1212	182	342	158	602	721	620	241	505	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.7	22.3	22.3	46.5	44.8	42.4	41.4	33.5	31.8	46.8	42.2	0.0
Incr Delay (d2), s/veh	1.9	1.2	1.2	14.2	466.8	2.9	10.1	0.9	0.4	17.8	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	9.0	8.9	2.2	26.4	1.9	5.0	3.7	1.5	1.9	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	23.5	23.5	60.7	511.6	45.3	51.5	34.4	32.2	64.6	48.7	0.0
LnGrp LOS	C	C	C	E	F	D	D	C	C	E	D	
Approach Vol, veh/h		2130			843			435			216	A
Approach Delay, s/veh		26.7			428.4			41.3			53.2	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.8	16.0	10.9	28.0	11.4	49.4	20.6	18.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	70.0	10.0	15.0	40.0	10.0	70.0	40.0	30.0
Max Q Clear Time (g_c+I1), s	31.9	12.0	5.8	10.3	6.1	24.7	14.0	10.9
Green Ext Time (p_c), s	6.9	0.0	0.1	1.5	0.1	9.8	0.7	0.9

Intersection Summary	
HCM 6th Ctrl Delay	123.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

LANE SUMMARY

Site: 101 [5 - New Market St SW / Tumwater Blvd (AM Peak Hour) (Site Folder: 2023 Baseline)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: New Market St SW													
Lane 1	14	0.0	710	0.020	100	12.2	LOS B	0.1	1.9	Full	1600	0.0	0.0
Lane 2[d]	37	6.9	913	0.041	100	5.9	LOS A	0.2	4.2	Full	1600	0.0	0.0
Approach	52	5.0		0.041		7.7	LOS A	0.2	4.2				
East: Tumwater Blvd													
Lane 1	456	5.1	1184	0.385	100	5.4	LOS A	2.5	64.8	Full	1600	0.0	0.0
Lane 2[d]	567	4.4	1473	0.385	100	4.2	LOS A	2.6	67.3	Full	1600	0.0	0.0
Approach	1023	4.7		0.385		4.7	LOS A	2.6	67.3				
North: New Market St SW													
Lane 1	33	11.1	583	0.056	100	12.7	LOS B	0.2	5.5	Full	1600	0.0	0.0
Lane 2[d]	80	12.2	862	0.092	100	5.9	LOS A	0.4	10.2	Full	1600	0.0	0.0
Approach	112	11.9		0.092		7.9	LOS A	0.4	10.2				
West: Tumwater Blvd													
Lane 1	512	4.9	1343	0.381	100	6.9	LOS A	2.6	66.3	Full	1600	0.0	0.0
Lane 2[d]	606	5.6	1588	0.381	100	3.4	LOS A	2.6	68.0	Full	1600	0.0	0.0
Approach	1118	5.3		0.381		5.0	LOS A	2.6	68.0				
Intersection	2305	5.3		0.385		5.1	LOS A	2.6	68.0				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: New Market St SW

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	13	1	-	14	0.0	710	0.020	100	NA	NA
Lane 2	-	-	37	37	6.9	913	0.041	100	NA	NA
Approach	13	1	37	52	5.0		0.041			

East: Tumwater Blvd

Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	1	64	391	-	456	5.1	1184	0.385	100	NA	NA
Lane 2	-	-	441	127	567	4.4	1473	0.385	100	NA	NA
Approach	1	64	831	127	1023	4.7		0.385			

North: New Market St SW

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	4	-	33	11.1	583	0.056	100	NA	NA
Lane 2	-	-	80	80	12.2	862	0.092	100	NA	NA
Approach	29	4	80	112	11.9		0.092			

West: Tumwater Blvd

Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	202	281	-	512	4.9	1343	0.381	100	NA	NA
Lane 2	-	-	578	28	606	5.6	1588	0.381	100	NA	NA
Approach	29	202	859	28	1118	5.3		0.381			

	Total	%HV	Deg.Satn (v/c)
Intersection	2305	5.3	0.385

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

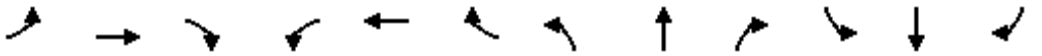
Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	352	106	254	724	16	112	210	244	16	277	67
Future Volume (vph)	52	352	106	254	724	16	112	210	244	16	277	67
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	9%	5%	5%	9%	4%	27%	15%	5%	7%	7%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6									8
Detector Phase	1	6	7	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.0	35.0	12.0	12.0	35.0		12.0	40.0		12.0	40.0	40.0
Total Split (s)	26.0	46.0	36.0	41.0	76.0		36.0	36.0		31.0	36.0	36.0
Total Split (%)	14.9%	26.4%	20.7%	23.6%	43.7%		20.7%	20.7%		17.8%	20.7%	20.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min		None	None		None	None	None

Intersection Summary
Cycle Length: 174
Actuated Cycle Length: 115.8
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Capitol Blvd SE & Tumwater Blvd



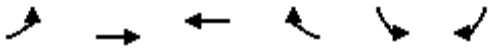
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	352	106	254	724	16	112	210	244	16	277	67
Future Volume (veh/h)	52	352	106	254	724	16	112	210	244	16	277	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1826	1826	1767	1841	1500	1678	1826	1796	1796	1856	1900
Adj Flow Rate, veh/h	63	424	128	306	872	19	135	253	294	19	334	81
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	9	5	5	9	4	27	15	5	7	7	3	0
Cap, veh/h	88	507	529	348	1514	33	200	399	356	43	672	307
Arrive On Green	0.05	0.28	0.28	0.21	0.43	0.43	0.06	0.23	0.23	0.03	0.19	0.19
Sat Flow, veh/h	1682	1826	1546	1682	3499	76	3100	1735	1547	1711	3526	1610
Grp Volume(v), veh/h	63	424	128	306	436	455	135	253	294	19	334	81
Grp Sat Flow(s),veh/h/ln	1682	1826	1546	1682	1749	1827	1550	1735	1547	1711	1763	1610
Q Serve(g_s), s	3.4	20.2	5.5	16.3	17.4	17.4	3.9	12.1	16.7	1.0	7.8	4.0
Cycle Q Clear(g_c), s	3.4	20.2	5.5	16.3	17.4	17.4	3.9	12.1	16.7	1.0	7.8	4.0
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	88	507	529	348	756	790	200	399	356	43	672	307
V/C Ratio(X)	0.72	0.84	0.24	0.88	0.58	0.58	0.67	0.63	0.83	0.44	0.50	0.26
Avail Cap(c_a), veh/h	365	792	770	638	1327	1386	1008	564	503	464	1146	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	31.3	21.8	35.5	19.8	19.8	42.2	32.0	33.8	44.3	33.4	31.8
Incr Delay (d2), s/veh	10.5	5.3	0.3	7.2	0.8	0.8	1.5	1.7	7.6	2.7	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	9.2	2.0	7.1	6.8	7.1	1.5	5.1	6.8	0.5	3.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	36.6	22.0	42.7	20.6	20.6	43.7	33.7	41.3	47.0	33.9	32.3
LnGrp LOS	D	D	C	D	C	C	D	C	D	D	C	C
Approach Vol, veh/h		615			1197			682			434	
Approach Delay, s/veh		35.3			26.2			39.0			34.2	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	45.9	8.3	27.2	25.1	31.6	12.0	23.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	70.0	25.0	30.0	35.0	40.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.4	19.4	3.0	18.7	18.3	22.2	5.9	9.8
Green Ext Time (p_c), s	0.1	8.3	0.0	2.6	0.8	3.4	0.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	52	66	137	74	114
Future Volume (vph)	125	52	66	137	74	114
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles (%)	5%	2%	0%	6%	12%	1%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	125	52	66	137	74	114
Future Vol, veh/h	125	52	66	137	74	114
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	63	63	63	63	63	63
Heavy Vehicles, %	5	2	0	6	12	1
Mvmt Flow	198	83	105	217	117	181

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	322	0	-	0	693	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	4.15	-	-	-	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.245	-	-	-	3.608	3.309
Pot Cap-1 Maneuver	1221	-	-	-	395	829
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	603	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1221	-	-	-	328	829
Mov Cap-2 Maneuver	-	-	-	-	328	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	603	-

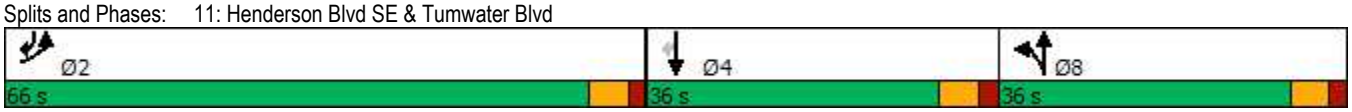
Approach	EB	WB	SB
HCM Control Delay, s	6	0	21
HCM LOS			C

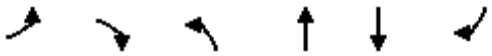
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1221	-	-	-	518
HCM Lane V/C Ratio	0.163	-	-	-	0.576
HCM Control Delay (s)	8.5	0	-	-	21
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	3.6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	225	10	38	160	153	523
Future Volume (vph)	225	10	38	160	153	523
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	11%	3%	3%	2%	2%
Shared Lane Traffic (%)						
Turn Type	Prot		Split	NA	NA	pm+ov
Protected Phases	2		8	8	4	2
Permitted Phases						4
Detector Phase	2		8	8	4	2
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	32.0		14.0	14.0	32.0	32.0
Total Split (s)	66.0		36.0	36.0	36.0	66.0
Total Split (%)	47.8%		26.1%	26.1%	26.1%	47.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min		None	None	None	Min

Intersection Summary
Cycle Length: 138
Actuated Cycle Length: 73
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 11: Henderson Blvd SE & Tumwater Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	225	10	38	160	153	523
Future Volume (veh/h)	225	10	38	160	153	523
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1737	1856	1856	1870	1870
Adj Flow Rate, veh/h	262	12	44	186	178	261
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	7	11	3	3	2	2
Cap, veh/h	375	17	67	285	423	358
Arrive On Green	0.23	0.23	0.19	0.19	0.23	0.23
Sat Flow, veh/h	1621	74	352	1486	1870	1585
Grp Volume(v), veh/h	275	0	230	0	178	261
Grp Sat Flow(s),veh/h/ln	1702	0	1838	0	1870	1585
Q Serve(g_s), s	7.6	0.0	5.9	0.0	4.2	7.8
Cycle Q Clear(g_c), s	7.6	0.0	5.9	0.0	4.2	7.8
Prop In Lane	0.95	0.04	0.19			1.00
Lane Grp Cap(c), veh/h	393	0	353	0	423	358
V/C Ratio(X)	0.70	0.00	0.65	0.00	0.42	0.73
Avail Cap(c_a), veh/h	1991	0	1075	0	1094	927
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	0.0	19.1	0.0	17.0	18.4
Incr Delay (d2), s/veh	4.8	0.0	4.3	0.0	0.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.6	0.0	1.6	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	0.0	23.4	0.0	17.6	21.2
LnGrp LOS	C	A	C	A	B	C
Approach Vol, veh/h	275			230	439	
Approach Delay, s/veh	22.8			23.4	19.8	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	17.9	17.6	15.8
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	60.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	9.6	9.8	7.9
Green Ext Time (p_c), s	2.2	1.8	2.3

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

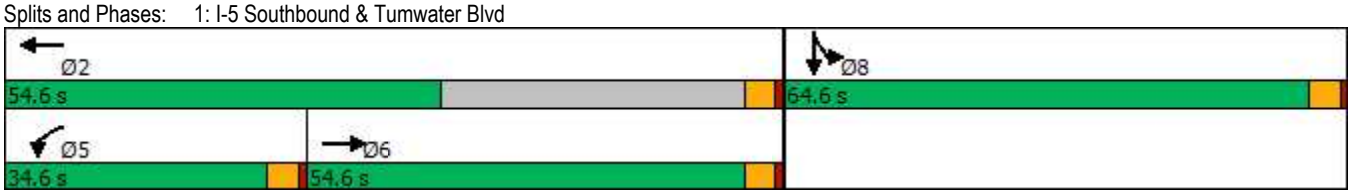
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
1: I-5 Southbound & Tumwater Blvd

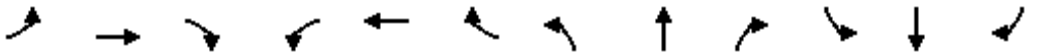
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	381	107	354	300	0	0	0	0	506	2	227
Future Volume (vph)	0	381	107	354	300	0	0	0	0	506	2	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	0		0	310		0	0		0	300		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		1022			789			640			375	
Travel Time (s)		19.9			15.4			10.9			6.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)										25%		
Turn Type		NA		Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases												
Detector Phase		6		5	2					8	8	
Switch Phase												
Minimum Initial (s)		10.0		6.0	10.0					5.0	5.0	
Minimum Split (s)		29.6		10.6	26.6					32.6	32.6	
Total Split (s)		54.6		34.6	54.6					64.6	64.6	
Total Split (%)		35.5%		22.5%	35.5%					42.0%	42.0%	
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6					4.6	4.6	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Min		None	Min					None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 153.8	
Actuated Cycle Length: 100.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: I-5 Southbound & Tumwater Blvd



HCM 6th Signalized Intersection Summary
1: I-5 Southbound & Tumwater Blvd



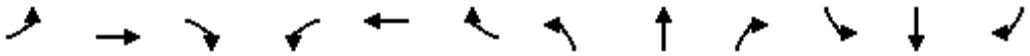
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	381	107	354	300	0	0	0	0	506	2	227
Future Volume (veh/h)	0	381	107	354	300	0	0	0	0	506	2	227
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1832	1847	1900	1900	0				1885	1900	1900
Adj Flow Rate, veh/h	0	433	122	402	341	0				418	222	258
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	1	0	0	0	0				1	0	0
Cap, veh/h	0	603	168	457	1021	0				613	274	318
Arrive On Green	0.00	0.22	0.22	0.25	0.54	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	2779	750	1810	1900	0				1795	801	931
Grp Volume(v), veh/h	0	279	276	402	341	0				418	0	480
Grp Sat Flow(s),veh/h/ln	0	1741	1697	1810	1900	0				1795	0	1732
Q Serve(g_s), s	0.0	11.3	11.5	16.2	7.7	0.0				15.2	0.0	19.2
Cycle Q Clear(g_c), s	0.0	11.3	11.5	16.2	7.7	0.0				15.2	0.0	19.2
Prop In Lane	0.00		0.44	1.00		0.00				1.00		0.54
Lane Grp Cap(c), veh/h	0	390	381	457	1021	0				613	0	592
V/C Ratio(X)	0.00	0.71	0.72	0.88	0.33	0.00				0.68	0.00	0.81
Avail Cap(c_a), veh/h	0	1144	1116	714	1249	0				1416	0	1367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.3	27.3	27.3	9.9	0.0				21.5	0.0	22.8
Incr Delay (d2), s/veh	0.0	2.5	2.6	7.9	0.2	0.0				1.3	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	4.6	7.6	2.8	0.0				6.0	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.7	30.0	35.2	10.1	0.0				22.8	0.0	25.6
LnGrp LOS	A	C	C	D	B	A				C	A	C
Approach Vol, veh/h		555			743						898	
Approach Delay, s/veh		29.8			23.7						24.3	
Approach LOS		C			C						C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.5			23.8	21.7		30.6				
Change Period (Y+Rc), s		4.6			4.6	4.6		4.6				
Max Green Setting (Gmax), s		50.0			30.0	50.0		60.0				
Max Q Clear Time (g_c+I1), s		9.7			18.2	13.5		21.2				
Green Ext Time (p_c), s		2.1			1.0	3.6		4.8				

Intersection Summary												
HCM 6th Ctrl Delay			25.5									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	694	0	0	585	1473	87	0	278	0	0	0
Future Volume (vph)	193	694	0	0	585	1473	87	0	278	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Storage Length (ft)	225		0	0		0	0		150	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		789			907			278			339	
Travel Time (s)		15.4			17.7			4.7			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	6%	0%	0%	1%	3%	0%	0%	10%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	31.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	193	694	0	0	585	1473	87	0	278	0	0	0
Future Vol, veh/h	193	694	0	0	585	1473	87	0	278	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	225	-	-	-	-	0	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	6	0	0	1	3	0	0	10	0	0	0
Mvmt Flow	219	789	0	0	665	1674	99	0	316	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	665	0	-	-	-	0	1892	1892	395
Stage 1	-	-	-	-	-	-	1227	1227	-
Stage 2	-	-	-	-	-	-	665	665	-
Critical Hdwy	4.13	-	-	-	-	-	6.6	6.5	7.05
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.219	-	-	-	-	-	3.5	4	3.395
Pot Cap-1 Maneuver	922	-	0	0	-	0	~ 70	71	586
Stage 1	-	-	0	0	-	0	244	253	-
Stage 2	-	-	0	0	-	0	515	461	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	922	-	-	-	-	-	~ 53	0	586
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 53	0	-
Stage 1	-	-	-	-	-	-	186	0	-
Stage 2	-	-	-	-	-	-	515	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	151
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT
Capacity (veh/h)	53	586	922	-	-
HCM Lane V/C Ratio	1.865	0.539	0.238	-	-
HCM Control Delay (s)	$ 575.7	18.1	10.1	-	-
HCM Lane LOS	F	C	B	-	-
HCM 95th %tile Q(veh)	9.6	3.2	0.9	-	-

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	943	25	0	2025	0	9
Future Volume (vph)	943	25	0	2025	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			3%	0%	
Link Speed (mph)	35			35	30	
Link Distance (ft)	907			494	563	
Travel Time (s)	17.7			9.6	12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	14%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	943	25	0	2025	0	9
Future Vol, veh/h	943	25	0	2025	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	3	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	14	0	2	0	0
Mvmt Flow	1048	28	0	2250	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	538
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	-	0	493
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	493
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

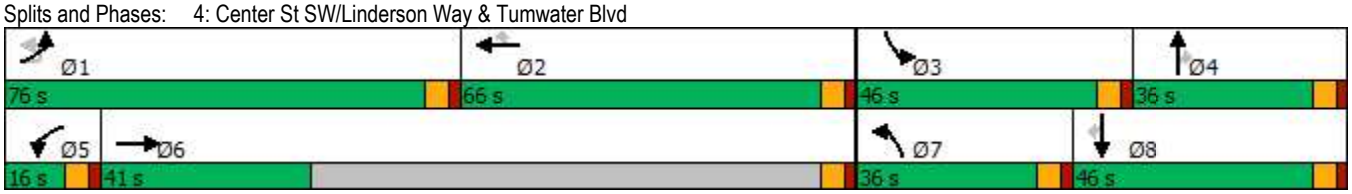
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	493	-	-	-
HCM Lane V/C Ratio	0.02	-	-	-
HCM Control Delay (s)	12.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

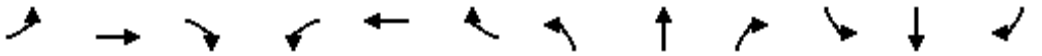
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	639	155	48	817	26	218	80	41	68	103	1008
Future Volume (vph)	138	639	155	48	817	26	218	80	41	68	103	1008
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	275		250	250		100	300		0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		387			996			489			318	
Travel Time (s)		7.5			19.4			9.5			6.2	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	15%	3%	2%	0%	10%	3%	5%	10%	1%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2			4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	33.0		12.0	33.0	33.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (s)	76.0	41.0		16.0	66.0	66.0	36.0	36.0	36.0	46.0	46.0	46.0
Total Split (%)	33.9%	18.3%		7.1%	29.5%	29.5%	16.1%	16.1%	16.1%	20.5%	20.5%	20.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 224
Actuated Cycle Length: 156.1
Natural Cycle: 130
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Center St SW/Linderson Way & Tumwater Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	639	155	48	817	26	218	80	41	68	103	1008
Future Volume (veh/h)	138	639	155	48	817	26	218	80	41	68	103	1008
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1678	1856	1870	1900	1752	1856	1826	1752	1885	1900
Adj Flow Rate, veh/h	150	695	168	52	888	28	237	87	45	74	112	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	15	3	2	0	10	3	5	10	1	0
Cap, veh/h	254	1014	245	92	1268	574	287	375	313	102	173	
Arrive On Green	0.07	0.38	0.38	0.05	0.36	0.36	0.17	0.20	0.20	0.06	0.09	0.00
Sat Flow, veh/h	3456	2680	647	1767	3554	1609	1668	1856	1547	1668	1885	1610
Grp Volume(v), veh/h	150	435	428	52	888	28	237	87	45	74	112	0
Grp Sat Flow(s),veh/h/ln	1728	1678	1649	1767	1777	1609	1668	1856	1547	1668	1885	1610
Q Serve(g_s), s	3.3	17.1	17.1	2.3	16.8	0.9	10.7	3.1	1.9	3.4	4.5	0.0
Cycle Q Clear(g_c), s	3.3	17.1	17.1	2.3	16.8	0.9	10.7	3.1	1.9	3.4	4.5	0.0
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	635	624	92	1268	574	287	375	313	102	173	
V/C Ratio(X)	0.59	0.69	0.69	0.57	0.70	0.05	0.83	0.23	0.14	0.72	0.65	
Avail Cap(c_a), veh/h	3086	749	736	225	2720	1232	639	710	592	851	962	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.2	20.4	20.4	36.3	21.6	16.5	31.3	26.2	25.7	36.1	34.4	0.0
Incr Delay (d2), s/veh	2.6	2.3	2.4	6.5	0.9	0.0	7.2	0.4	0.3	11.1	4.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.5	6.4	1.1	6.6	0.3	4.7	1.3	0.7	1.7	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	22.7	22.8	42.8	22.5	16.5	38.5	26.5	25.9	47.2	39.2	0.0
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	D	
Approach Vol, veh/h		1013			968			369			186	A
Approach Delay, s/veh		25.0			23.4			34.2			42.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	34.0	10.8	21.9	10.1	35.7	19.5	13.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	70.0	60.0	40.0	30.0	10.0	35.0	30.0	40.0
Max Q Clear Time (g_c+I1), s	5.3	18.8	5.4	5.1	4.3	19.1	12.7	6.5
Green Ext Time (p_c), s	0.7	9.2	0.2	0.7	0.0	5.8	0.8	0.7

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

LANE SUMMARY

Site: 101 [5 - New Market St SW / Tumwater Blvd (PM Peak Hour) (Site Folder: 2023 Baseline)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: New Market St SW													
Lane 1[d]	25	4.3	1027	0.024	100	11.1	LOS B	0.1	2.3	Full	1600	0.0	0.0
Lane 2	18	12.5	735	0.025	100	6.4	LOS A	0.1	2.3	Full	1600	0.0	0.0
Approach	43	7.8		0.025		9.1	LOS A	0.1	2.3				
East: Tumwater Blvd													
Lane 1	433	2.8	1345	0.322	100	4.2	LOS A	1.9	49.2	Full	1600	0.0	0.0
Lane 2[d]	511	4.2	1587	0.322	100	3.5	LOS A	2.0	50.6	Full	1600	0.0	0.0
Approach	945	3.6		0.322		3.8	LOS A	2.0	50.6				
North: New Market St SW													
Lane 1	18	18.8	513	0.036	100	13.8	LOS B	0.1	3.4	Full	1600	0.0	0.0
Lane 2[d]	74	6.5	972	0.076	100	5.6	LOS A	0.3	7.7	Full	1600	0.0	0.0
Approach	92	9.0		0.076		7.3	LOS A	0.3	7.7				
West: Tumwater Blvd													
Lane 1	385	10.6	1315	0.293	100	5.2	LOS A	1.7	46.8	Full	1600	0.0	0.0
Lane 2[d]	483	4.8	1651	0.293	100	3.2	LOS A	1.8	45.5	Full	1600	0.0	0.0
Approach	868	7.4		0.293		4.1	LOS A	1.8	46.8				
Intersection	1949	5.6		0.322		4.2	LOS A	2.0	50.6				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: New Market St SW

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	2	-	25	4.3	1027	0.024	100	NA	NA
Lane 2	-	-	18	18	12.5	735	0.025	100	NA	NA
Approach	23	2	18	43	7.8		0.025			

East: Tumwater Blvd

Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	1	33	400	-	433	2.8	1345	0.322	100	NA	NA
Lane 2	-	-	465	47	511	4.2	1587	0.322	100	NA	NA
Approach	1	33	864	47	945	3.6		0.322			

North: New Market St SW

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	17	1	-	18	18.8		513	0.036	100	NA	NA
Lane 2	-	-	74	74	6.5		972	0.076	100	NA	NA
Approach	17	1	74	92	9.0			0.076			

West: Tumwater Blvd

Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	38	46	301	-	385	10.6	1315	0.293	100	NA	NA
Lane 2	-	-	471	12	483	4.8	1651	0.293	100	NA	NA
Approach	38	46	773	12	868	7.4		0.293			

	Total	%HV	Deg.Satn (v/c)
Intersection	1949	5.6	0.322

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

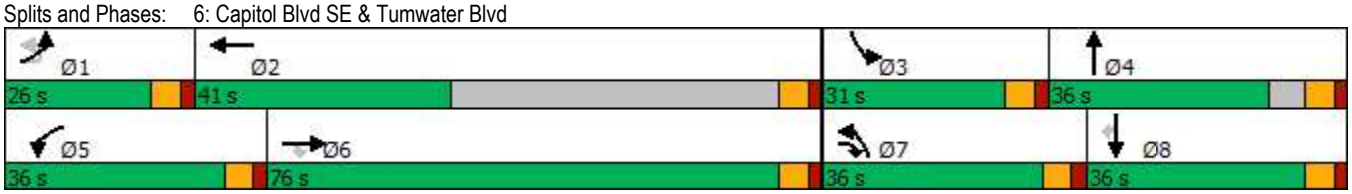
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

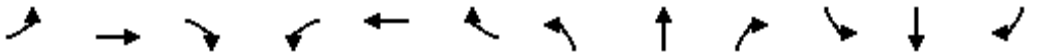
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	372	297	101	396	18	242	370	22	136	579	129
Future Volume (vph)	78	372	297	101	396	18	242	370	22	136	579	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	225		0	150		0	225		250
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		463			766			690			587	
Travel Time (s)		9.0			14.9			13.4			11.4	
Confl. Peds. (#/hr)			1	1			3		6	6		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6									8
Detector Phase	1	6	7	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.0	35.0	12.0	12.0	35.0		12.0	40.0		12.0	40.0	40.0
Total Split (s)	26.0	76.0	36.0	36.0	41.0		36.0	36.0		31.0	36.0	36.0
Total Split (%)	14.1%	41.3%	19.6%	19.6%	22.3%		19.6%	19.6%		16.8%	19.6%	19.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min		None	None		None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 184
Actuated Cycle Length: 117.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Capitol Blvd SE & Tumwater Blvd





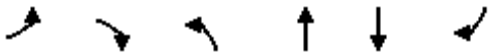
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	372	297	101	396	18	242	370	22	136	579	129
Future Volume (veh/h)	78	372	297	101	396	18	242	370	22	136	579	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	87	413	330	112	440	20	269	411	24	151	643	143
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	1	1	1
Cap, veh/h	113	535	615	146	1065	48	360	854	50	187	893	395
Arrive On Green	0.06	0.29	0.29	0.08	0.31	0.31	0.10	0.25	0.25	0.10	0.25	0.25
Sat Flow, veh/h	1767	1856	1571	1795	3489	158	3483	3438	200	1795	3582	1586
Grp Volume(v), veh/h	87	413	330	112	225	235	269	213	222	151	643	143
Grp Sat Flow(s),veh/h/ln	1767	1856	1571	1795	1791	1857	1742	1791	1847	1795	1791	1586
Q Serve(g_s), s	4.2	17.6	14.0	5.3	8.6	8.7	6.5	8.8	8.8	7.1	14.2	6.4
Cycle Q Clear(g_c), s	4.2	17.6	14.0	5.3	8.6	8.7	6.5	8.8	8.8	7.1	14.2	6.4
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	113	535	615	146	547	567	360	445	459	187	893	395
V/C Ratio(X)	0.77	0.77	0.54	0.77	0.41	0.41	0.75	0.48	0.48	0.81	0.72	0.36
Avail Cap(c_a), veh/h	409	1504	1436	624	726	752	1210	622	642	520	1244	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	28.2	20.2	38.9	23.8	23.9	37.6	27.7	27.7	37.8	29.7	26.7
Incr Delay (d2), s/veh	10.3	2.9	0.9	8.1	0.6	0.6	1.2	0.8	0.8	3.1	1.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.9	5.0	2.6	3.6	3.7	2.7	3.7	3.9	3.2	6.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	31.1	21.1	47.0	24.4	24.4	38.8	28.5	28.5	40.9	30.9	27.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		830			572			704			937	
Approach Delay, s/veh		29.1			28.9			32.4			32.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	32.4	15.0	27.4	13.0	30.9	14.9	27.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	35.0	25.0	30.0	30.0	70.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	6.2	10.7	9.1	10.8	7.3	19.6	8.5	16.2
Green Ext Time (p_c), s	0.1	3.2	0.2	2.3	0.3	5.2	0.5	4.0

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	4	1	333	291	5
Future Volume (vph)	5	4	1	333	291	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	35			35	35	
Link Distance (ft)	579			477	489	
Travel Time (s)	11.3			9.3	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	33%	0%	0%	6%	6%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

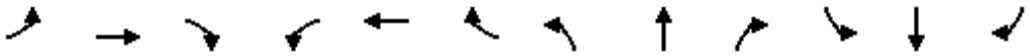
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	333	291	5
Future Vol, veh/h	5	4	1	333	291	5
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, %	33	0	0	6	6	0
Mvmt Flow	5	4	1	362	316	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	683	319	321	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.73	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	371	726	1250	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	371	726	1250	-	-	-
Mov Cap-2 Maneuver	371	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	640	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1250	-	474	-	-
HCM Lane V/C Ratio	0.001	-	0.021	-	-
HCM Control Delay (s)	7.9	0	12.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	8	0	10	12	41	2	229	6	15	218	62
Future Volume (vph)	64	8	0	10	12	41	2	229	6	15	218	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		551			457			1032			477	
Travel Time (s)		10.7			8.9			20.1			9.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	0%	0%	11%	27%	16%	50%	6%	50%	55%	3%	13%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

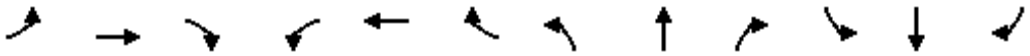
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	64	8	0	10	12	41	2	229	6	15	218	62
Future Vol, veh/h	64	8	0	10	12	41	2	229	6	15	218	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	0	0	11	27	16	50	6	50	55	3	13
Mvmt Flow	68	9	0	11	13	44	2	244	6	16	232	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	577	551	265	553	581	247	298	0	0	250	0	0
Stage 1	297	297	-	251	251	-	-	-	-	-	-	-
Stage 2	280	254	-	302	330	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.2	7.21	6.77	6.36	4.6	-	-	4.65	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.21	5.77	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.21	5.77	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.3	3.599	4.243	3.444	2.65	-	-	2.695	-	-
Pot Cap-1 Maneuver	426	445	779	430	393	759	1034	-	-	1060	-	-
Stage 1	709	671	-	734	655	-	-	-	-	-	-	-
Stage 2	725	701	-	688	603	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	386	436	779	417	385	759	1034	-	-	1060	-	-
Mov Cap-2 Maneuver	386	436	-	417	385	-	-	-	-	-	-	-
Stage 1	708	659	-	733	654	-	-	-	-	-	-	-
Stage 2	669	700	-	667	592	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.4	12.1	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1034	-	-	391	577	1060	-	-
HCM Lane V/C Ratio	0.002	-	-	0.196	0.116	0.015	-	-
HCM Control Delay (s)	8.5	0	-	16.4	12.1	8.4	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	11	0	17	1	218	1	2	225	1
Future Volume (vph)	2	0	1	11	0	17	1	218	1	2	225	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		408			554			2528			1032	
Travel Time (s)		9.3			12.6			49.2			20.1	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	1%	100%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

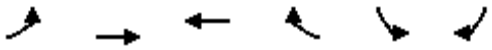
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	11	0	17	1	218	1	2	225	1
Future Vol, veh/h	2	0	1	11	0	17	1	218	1	2	225	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	1	100
Mvmt Flow	2	0	1	13	0	20	1	253	1	2	262	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	534	524	264	523	524	254	264	0	0	254	0	0
Stage 1	268	268	-	256	256	-	-	-	-	-	-	-
Stage 2	266	256	-	267	268	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	460	461	780	468	461	790	1312	-	-	1323	-	-
Stage 1	742	691	-	753	699	-	-	-	-	-	-	-
Stage 2	744	699	-	743	691	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	447	459	779	466	459	790	1311	-	-	1323	-	-
Mov Cap-2 Maneuver	447	459	-	466	459	-	-	-	-	-	-	-
Stage 1	741	689	-	752	698	-	-	-	-	-	-	-
Stage 2	725	698	-	740	689	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	11.1	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1311	-	-	521	621	1323	-	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.052	0.002	-	-
HCM Control Delay (s)	7.7	0	-	12	11.1	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	75	4	4	145	171	66
Future Volume (vph)	75	4	4	145	171	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35	35		35	
Link Distance (ft)		699	561		2528	
Travel Time (s)		13.6	10.9		49.2	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	11%	0%	25%	11%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	4	4	145	171	66
Future Vol, veh/h	75	4	4	145	171	66
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	80	80	80	80	80	80
Heavy Vehicles, %	11	0	25	11	3	3
Mvmt Flow	94	5	5	181	214	83

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	186	0	-	0	289	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	193	-
Critical Hdwy	4.21	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.299	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1336	-	-	-	699	958
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1336	-	-	-	649	958
Mov Cap-2 Maneuver	-	-	-	-	649	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	837	-

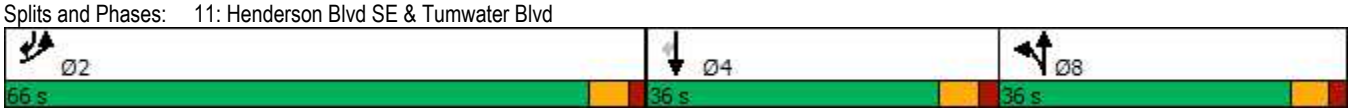
Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	13.6
HCM LOS			B

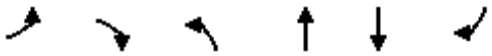
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1336	-	-	-	713
HCM Lane V/C Ratio	0.07	-	-	-	0.415
HCM Control Delay (s)	7.9	0	-	-	13.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	489	22	17	221	255	438
Future Volume (vph)	489	22	17	221	255	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			125
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	844			630	421	
Travel Time (s)	16.4			12.3	8.2	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	2%	5%
Shared Lane Traffic (%)						
Turn Type	Prot		Split	NA	NA	pm+ov
Protected Phases	2		8	8	4	2
Permitted Phases						4
Detector Phase	2		8	8	4	2
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	32.0		14.0	14.0	32.0	32.0
Total Split (s)	66.0		36.0	36.0	36.0	66.0
Total Split (%)	47.8%		26.1%	26.1%	26.1%	47.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min		None	None	None	Min

Intersection Summary	
Area Type:	Other
Cycle Length: 138	
Actuated Cycle Length: 106.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Henderson Blvd SE & Tumwater Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	489	22	17	221	255	438
Future Volume (veh/h)	489	22	17	221	255	438
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1900	1900	1885	1870	1826
Adj Flow Rate, veh/h	532	24	18	240	277	279
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	1	2	5
Cap, veh/h	633	29	24	319	416	344
Arrive On Green	0.37	0.37	0.18	0.18	0.22	0.22
Sat Flow, veh/h	1692	76	131	1748	1870	1547
Grp Volume(v), veh/h	557	0	258	0	277	279
Grp Sat Flow(s),veh/h/ln	1772	0	1879	0	1870	1547
Q Serve(g_s), s	23.4	0.0	10.6	0.0	11.0	14.0
Cycle Q Clear(g_c), s	23.4	0.0	10.6	0.0	11.0	14.0
Prop In Lane	0.96	0.04	0.07			1.00
Lane Grp Cap(c), veh/h	663	0	343	0	416	344
V/C Ratio(X)	0.84	0.00	0.75	0.00	0.67	0.81
Avail Cap(c_a), veh/h	1302	0	690	0	687	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	31.6	0.0	29.0	30.1
Incr Delay (d2), s/veh	6.1	0.0	6.9	0.0	1.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	5.3	0.0	4.9	5.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.4	0.0	38.5	0.0	30.8	34.7
LnGrp LOS	C	A	D	A	C	C
Approach Vol, veh/h	557			258	556	
Approach Delay, s/veh	29.4			38.5	32.8	
Approach LOS	C			D	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	36.6	24.2	20.9
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	60.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	25.4	16.0	12.6
Green Ext Time (p_c), s	5.1	2.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

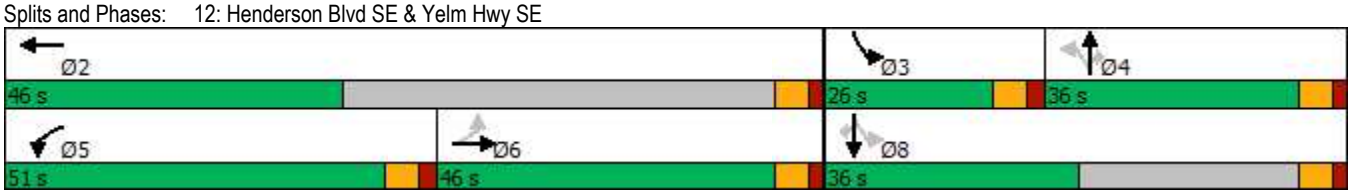
Notes

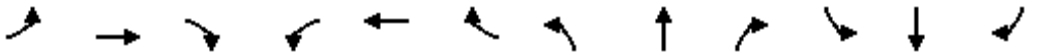
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	731	79	489	543	66	64	127	533	77	184	24
Future Volume (vph)	21	731	79	489	543	66	64	127	533	77	184	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	450		0	150		125	0		125
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1049			946			585			420	
Travel Time (s)		20.4			18.4			11.4			8.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	3%	2%	1%	4%	2%	1%	1%	5%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Prot	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		6		5	2			4		3	8	
Permitted Phases	6						4		4	8		8
Detector Phase	6	6		5	2		4	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.0	6.0		6.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	23.0	23.0		11.0	33.0		34.0	34.0	34.0	11.0	32.0	32.0
Total Split (s)	46.0	46.0		51.0	46.0		36.0	36.0	36.0	26.0	36.0	36.0
Total Split (%)	28.9%	28.9%		32.1%	28.9%		22.6%	22.6%	22.6%	16.4%	22.6%	22.6%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes		
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 159	
Actuated Cycle Length: 130.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 12: Henderson Blvd SE & Yelm Hwy SE





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	731	79	489	543	66	64	127	533	77	184	24
Future Volume (veh/h)	21	731	79	489	543	66	64	127	533	77	184	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1841	1870	1885	1885	1826	1900	1900
Adj Flow Rate, veh/h	21	746	81	499	554	67	65	130	0	79	188	24
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	3	2	1	4	2	1	1	5	0	0
Cap, veh/h	309	945	103	571	2161	261	181	175		198	393	333
Arrive On Green	0.29	0.29	0.29	0.32	0.67	0.67	0.09	0.09	0.00	0.05	0.21	0.21
Sat Flow, veh/h	816	3259	354	1781	3218	388	1170	1885	1598	1739	1900	1610
Grp Volume(v), veh/h	21	410	417	499	308	313	65	130	0	79	188	24
Grp Sat Flow(s),veh/h/ln	816	1791	1822	1781	1791	1815	1170	1885	1598	1739	1900	1610
Q Serve(g_s), s	1.9	20.8	20.8	26.1	6.7	6.8	5.3	6.6	0.0	3.9	8.6	1.2
Cycle Q Clear(g_c), s	1.9	20.8	20.8	26.1	6.7	6.8	5.3	6.6	0.0	3.9	8.6	1.2
Prop In Lane	1.00		0.19	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	519	528	571	1202	1219	181	175		198	393	333
V/C Ratio(X)	0.07	0.79	0.79	0.87	0.26	0.26	0.36	0.74		0.40	0.48	0.07
Avail Cap(c_a), veh/h	403	726	738	812	1202	1219	428	573		457	577	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	32.3	32.3	31.6	6.4	6.4	43.0	43.6	0.0	36.3	34.4	31.5
Incr Delay (d2), s/veh	0.1	4.4	4.4	10.7	0.1	0.1	0.4	2.4	0.0	0.5	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	9.3	9.5	12.5	2.2	2.3	1.5	3.2	0.0	1.7	4.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	36.7	36.6	42.4	6.5	6.6	43.5	46.0	0.0	36.8	35.5	31.6
LnGrp LOS	C	D	D	D	A	A	D	D		D	D	C
Approach Vol, veh/h		848			1120			195	A		291	
Approach Delay, s/veh		36.4			22.5			45.2			35.5	
Approach LOS		D			C			D			D	

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		72.3	11.3	15.1	37.6	34.6		26.4				
Change Period (Y+Rc), s		6.0	6.0	6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		40.0	20.0	30.0	45.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s		8.8	5.9	8.6	28.1	22.8		10.6				
Green Ext Time (p_c), s		4.0	0.1	0.5	3.5	5.8		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

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

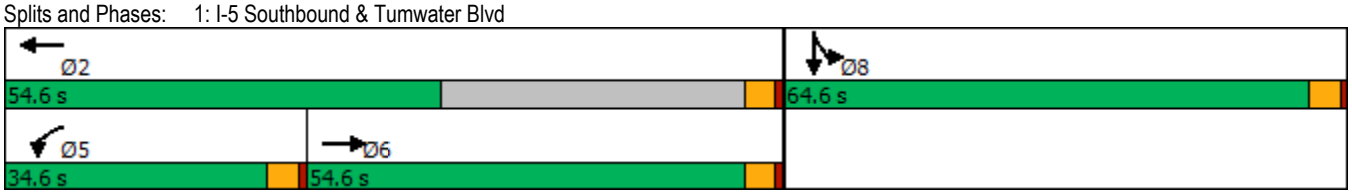
2023 With Project

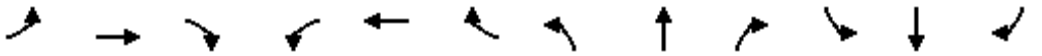
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	899	68	263	223	0	0	0	0	1243	6	216
Future Volume (vph)	0	899	68	263	223	0	0	0	0	1243	6	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	0		0	310		0	0		0	300		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		1022			789			640			375	
Travel Time (s)		19.9			15.4			10.9			6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	10%	3%	0%	0%	0%	0%	6%	100%	2%
Shared Lane Traffic (%)										40%		
Turn Type		NA		Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases												
Detector Phase		6		5	2					8	8	
Switch Phase												
Minimum Initial (s)		10.0		6.0	10.0					5.0	5.0	
Minimum Split (s)		29.6		10.6	26.6					32.6	32.6	
Total Split (s)		54.6		34.6	54.6					64.6	64.6	
Total Split (%)		35.5%		22.5%	35.5%					42.0%	42.0%	
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6					4.6	4.6	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Min		None	Min					None	None	

Intersection Summary

Area Type: Other
Cycle Length: 153.8
Actuated Cycle Length: 151.6
Natural Cycle: 130
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-5 Southbound & Tumwater Blvd





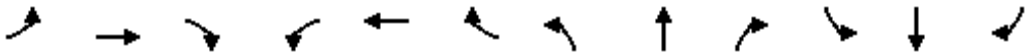
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	899	68	263	223	0	0	0	0	1243	6	216
Future Volume (veh/h)	0	899	68	263	223	0	0	0	0	1243	6	216
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1788	1847	1752	1856	0				1811	418	1870
Adj Flow Rate, veh/h	0	977	74	286	242	0				1575	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	4	0	10	3	0				6	100	2
Cap, veh/h	0	1037	79	307	999	0				1380	167	0
Arrive On Green	0.00	0.32	0.32	0.18	0.54	0.00				0.40	0.00	0.00
Sat Flow, veh/h	0	3289	242	1668	1856	0				3450	418	0
Grp Volume(v), veh/h	0	518	533	286	242	0				1575	0	0
Grp Sat Flow(s),veh/h/ln	0	1698	1744	1668	1856	0				1725	418	0
Q Serve(g_s), s	0.0	44.5	44.5	25.3	10.4	0.0				60.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	44.5	44.5	25.3	10.4	0.0				60.0	0.0	0.0
Prop In Lane	0.00		0.14	1.00		0.00				1.00		0.00
Lane Grp Cap(c), veh/h	0	550	565	307	999	0				1380	167	0
V/C Ratio(X)	0.00	0.94	0.94	0.93	0.24	0.00				1.14	0.00	0.00
Avail Cap(c_a), veh/h	0	566	582	334	999	0				1380	167	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	49.3	49.3	60.3	18.4	0.0				45.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	24.0	23.6	31.1	0.1	0.0				72.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	22.4	22.9	13.3	4.5	0.0				38.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	73.4	73.0	91.4	18.5	0.0				117.6	0.0	0.0
LnGrp LOS	A	E	E	F	B	A				F	A	A
Approach Vol, veh/h		1051			528						1575	
Approach Delay, s/veh		73.2			58.0						117.6	
Approach LOS		E			E						F	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		85.3			32.2	53.2		64.6				
Change Period (Y+Rc), s		4.6			4.6	4.6		4.6				
Max Green Setting (Gmax), s		50.0			30.0	50.0		60.0				
Max Q Clear Time (g_c+I1), s		12.4			27.3	46.5		62.0				
Green Ext Time (p_c), s		1.4			0.2	2.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			92.8									
HCM 6th LOS			F									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	438	1674	0	0	397	648	83	2	453	0	0	0
Future Volume (vph)	438	1674	0	0	397	648	83	2	453	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Storage Length (ft)	225		0	0		0	0		150	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		789			886			278			339	
Travel Time (s)		15.4			17.3			4.7			5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	0%	6%	10%	4%	0%	5%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	321.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	438	1674	0	0	397	648	83	2	453	0	0	0
Future Vol, veh/h	438	1674	0	0	397	648	83	2	453	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	225	-	-	-	-	0	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	6	0	0	6	10	4	0	5	0	0	0
Mvmt Flow	476	1820	0	0	432	704	90	2	492	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	432	0	-	-	-	0	3204	3204	910
Stage 1	-	-	-	-	-	-	2772	2772	-
Stage 2	-	-	-	-	-	-	432	432	-
Critical Hdwy	4.13	-	-	-	-	-	6.66	6.5	6.975
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.5	-
Follow-up Hdwy	2.219	-	-	-	-	-	3.538	4	3.3475
Pot Cap-1 Maneuver	1126	-	0	0	-	0	~ 9	10	~ 273
Stage 1	-	-	0	0	-	0	~ 33	42	-
Stage 2	-	-	0	0	-	0	649	586	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1126	-	-	-	-	-	~ 5	0	~ 273
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 5	0	-
Stage 1	-	-	-	-	-	-	~ 19	0	-
Stage 2	-	-	-	-	-	-	649	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	$ 1810.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT
Capacity (veh/h)	5	273	1126	-	-
HCM Lane V/C Ratio	18.478	1.804	0.423	-	-
HCM Control Delay (s)	$ 9289.3	$ 407.3	10.5	-	-
HCM Lane LOS	F	F	B	-	-
HCM 95th %tile Q(veh)	13.5	33	2.1	-	-

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2024	81	0	986	0	2
Future Volume (vph)	2024	81	0	986	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			3%	0%	
Link Speed (mph)	35			35	30	
Link Distance (ft)	886			556	563	
Travel Time (s)	17.3			10.8	12.8	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	6%	0%	0%	8%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2024	81	0	986	0	2
Future Vol, veh/h	2024	81	0	986	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	3	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	6	0	0	8	0	0
Mvmt Flow	2439	98	0	1188	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1269
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	-	0	162
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	162
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	27.6
HCM LOS			D

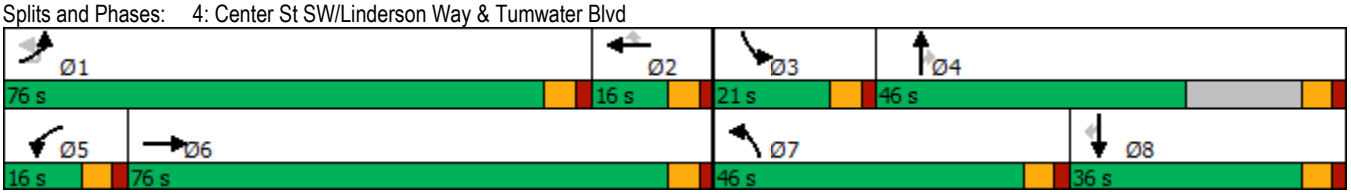
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	162	-	-	-
HCM Lane V/C Ratio	0.015	-	-	-
HCM Control Delay (s)	27.6	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

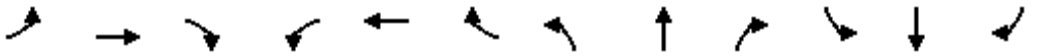
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1046	765	228	110	635	72	195	166	72	56	156	209
Future Volume (vph)	1046	765	228	110	635	72	195	166	72	56	156	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	275		250	250		100	300		0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		347			996			489			318	
Travel Time (s)		6.8			19.4			9.5			6.2	
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	19%	2%	7%	3%	21%	8%	4%	16%	15%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2			4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	33.0		12.0	33.0	33.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (s)	76.0	76.0		16.0	16.0	16.0	46.0	46.0	46.0	21.0	36.0	36.0
Total Split (%)	43.7%	43.7%		9.2%	9.2%	9.2%	26.4%	26.4%	26.4%	12.1%	20.7%	20.7%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 174
Actuated Cycle Length: 137.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Center St SW/Linderson Way & Tumwater Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1046	765	228	110	635	72	195	166	72	56	156	209
Future Volume (veh/h)	1046	765	228	110	635	72	195	166	72	56	156	209
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1826	1618	1870	1796	1856	1589	1781	1841	1663	1678	1856
Adj Flow Rate, veh/h	1137	832	248	120	690	78	212	180	78	61	170	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	19	2	7	3	21	8	4	16	15	3
Cap, veh/h	1330	1051	313	148	331	153	246	435	381	76	218	
Arrive On Green	0.38	0.40	0.40	0.08	0.10	0.10	0.16	0.24	0.24	0.05	0.13	0.00
Sat Flow, veh/h	3456	2634	785	1781	3413	1572	1513	1781	1558	1584	1678	1572
Grp Volume(v), veh/h	1137	548	532	120	690	78	212	180	78	61	170	0
Grp Sat Flow(s),veh/h/ln	1728	1735	1685	1781	1706	1572	1513	1781	1558	1584	1678	1572
Q Serve(g_s), s	32.1	29.5	29.5	7.0	10.3	5.0	14.5	9.0	4.2	4.1	10.4	0.0
Cycle Q Clear(g_c), s	32.1	29.5	29.5	7.0	10.3	5.0	14.5	9.0	4.2	4.1	10.4	0.0
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1330	692	672	148	331	153	246	435	381	76	218	
V/C Ratio(X)	0.86	0.79	0.79	0.81	2.08	0.51	0.86	0.41	0.20	0.80	0.78	
Avail Cap(c_a), veh/h	2274	1142	1109	167	331	153	569	670	586	223	473	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.0	28.1	28.1	48.0	48.0	45.6	43.4	33.8	32.0	50.1	44.8	0.0
Incr Delay (d2), s/veh	2.0	2.5	2.6	23.9	497.7	3.4	10.3	0.8	0.3	20.0	7.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	12.2	11.9	4.1	27.2	2.1	6.0	3.9	1.6	2.0	4.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	30.6	30.7	71.9	545.7	49.0	53.7	34.5	32.3	70.2	51.8	0.0
LnGrp LOS	C	C	C	E	F	D	D	C	C	E	D	
Approach Vol, veh/h		2217			888			470			231	A
Approach Delay, s/veh		31.3			438.1			42.8			56.7	
Approach LOS		C			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.9	16.3	11.1	32.0	14.8	48.4	23.3	19.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	70.0	10.0	15.0	40.0	10.0	70.0	40.0	30.0
Max Q Clear Time (g_c+I1), s	34.1	12.3	6.1	11.0	9.0	31.5	16.5	12.4
Green Ext Time (p_c), s	6.8	0.0	0.1	1.5	0.0	10.9	0.8	0.9

Intersection Summary	
HCM 6th Ctrl Delay	129.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

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

LANE SUMMARY

Site: 101 [5 - New Market St SW / Tumwater Blvd (AM Peak Hour) (Site Folder: 2023 With Project)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: New Market St SW													
Lane 1	14	0.0	662	0.022	100	12.5	LOS B	0.1	2.0	Full	1600	0.0	0.0
Lane 2[d]	53	6.8	913	0.058	100	5.9	LOS A	0.2	6.0	Full	1600	0.0	0.0
Approach	67	5.3		0.058		7.3	LOS A	0.2	6.0				
East: Tumwater Blvd													
Lane 1	477	5.2	1184	0.403	100	5.4	LOS A	2.7	69.0	Full	1600	0.0	0.0
Lane 2[d]	593	4.4	1473	0.403	100	4.2	LOS A	2.8	71.7	Full	1600	0.0	0.0
Approach	1070	4.8		0.403		4.7	LOS A	2.8	71.7				
North: New Market St SW													
Lane 1	33	11.1	565	0.058	100	12.9	LOS B	0.2	5.7	Full	1600	0.0	0.0
Lane 2[d]	82	11.4	853	0.096	100	6.0	LOS A	0.4	10.7	Full	1600	0.0	0.0
Approach	114	11.3		0.096		7.9	LOS A	0.4	10.7				
West: Tumwater Blvd													
Lane 1	514	4.7	1346	0.382	100	6.9	LOS A	2.6	66.5	Full	1600	0.0	0.0
Lane 2[d]	607	5.6	1588	0.382	100	3.4	LOS A	2.6	68.3	Full	1600	0.0	0.0
Approach	1122	5.2		0.382		5.0	LOS A	2.6	68.3				
Intersection	2373	5.3		0.403		5.1	LOS A	2.8	71.7				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: New Market St SW

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	13	1	-	14	0.0	662	0.022	100	NA	NA
Lane 2	-	-	53	53	6.8	913	0.058	100	NA	NA
Approach	13	1	53	67	5.3		0.058			

East: Tumwater Blvd

Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	1	64	412	-	477	5.2	1184	0.403	100	NA	NA
Lane 2	-	-	467	127	593	4.4	1473	0.403	100	NA	NA
Approach	1	64	878	127	1070	4.8		0.403			

North: New Market St SW

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	4	-	33	11.1	565	0.058	100	NA	NA
Lane 2	-	-	82	82	11.4	853	0.096	100	NA	NA
Approach	29	4	82	114	11.3		0.096			

West: Tumwater Blvd

Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	202	283	-	514	4.7	1346	0.382	100	NA	NA
Lane 2	-	-	579	28	607	5.6	1588	0.382	100	NA	NA
Approach	29	202	863	28	1122	5.2		0.382			

	Total	%HV	Deg.Satn (v/c)
Intersection	2373	5.3	0.403

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

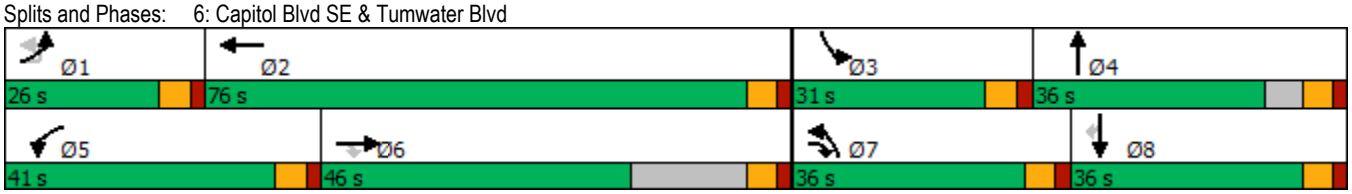
Merge Analysis

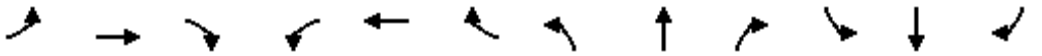
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	359	109	254	752	16	117	210	244	16	277	72
Future Volume (vph)	55	359	109	254	752	16	117	210	244	16	277	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	225		0	150		0	225		250
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		463			747			690			587	
Travel Time (s)		9.0			14.6			13.4			11.4	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	8%	5%	4%	9%	4%	25%	15%	5%	7%	6%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6									8
Detector Phase	1	6	7	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.0	35.0	12.0	12.0	35.0		12.0	40.0		12.0	40.0	40.0
Total Split (s)	26.0	46.0	36.0	41.0	76.0		36.0	36.0		31.0	36.0	36.0
Total Split (%)	14.9%	26.4%	20.7%	23.6%	43.7%		20.7%	20.7%		17.8%	20.7%	20.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min		None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 174	
Actuated Cycle Length: 116.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 6: Capitol Blvd SE & Tumwater Blvd





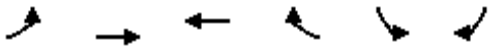
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	359	109	254	752	16	117	210	244	16	277	72
Future Volume (veh/h)	55	359	109	254	752	16	117	210	244	16	277	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1826	1841	1767	1841	1530	1678	1826	1796	1811	1856	1900
Adj Flow Rate, veh/h	66	433	131	306	906	19	141	253	294	19	334	87
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	8	5	4	9	4	25	15	5	7	6	3	0
Cap, veh/h	89	515	538	347	1527	32	207	398	355	43	662	302
Arrive On Green	0.05	0.28	0.28	0.21	0.44	0.44	0.07	0.23	0.23	0.03	0.19	0.19
Sat Flow, veh/h	1697	1826	1538	1682	3503	73	3100	1735	1547	1725	3526	1610
Grp Volume(v), veh/h	66	433	131	306	452	473	141	253	294	19	334	87
Grp Sat Flow(s),veh/h/ln	1697	1826	1538	1682	1749	1827	1550	1735	1547	1725	1763	1610
Q Serve(g_s), s	3.6	20.8	5.7	16.5	18.4	18.4	4.2	12.3	16.9	1.0	7.9	4.3
Cycle Q Clear(g_c), s	3.6	20.8	5.7	16.5	18.4	18.4	4.2	12.3	16.9	1.0	7.9	4.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	515	538	347	762	797	207	398	355	43	662	302
V/C Ratio(X)	0.74	0.84	0.24	0.88	0.59	0.59	0.68	0.64	0.83	0.44	0.50	0.29
Avail Cap(c_a), veh/h	363	782	763	631	1311	1370	996	557	497	462	1132	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	31.6	21.7	35.9	20.0	20.0	42.6	32.5	34.2	44.9	34.0	32.6
Incr Delay (d2), s/veh	11.2	5.8	0.3	7.3	0.9	0.9	1.5	1.7	8.0	2.6	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	9.6	2.0	7.2	7.2	7.5	1.6	5.2	6.9	0.5	3.4	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	37.4	21.9	43.2	20.9	20.9	44.1	34.1	42.2	47.5	34.6	33.1
LnGrp LOS	D	D	C	D	C	C	D	C	D	D	C	C
Approach Vol, veh/h		630			1231			688			440	
Approach Delay, s/veh		36.0			26.5			39.6			34.9	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	46.7	8.3	27.4	25.3	32.3	12.2	23.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	70.0	25.0	30.0	35.0	40.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	5.6	20.4	3.0	18.9	18.5	22.8	6.2	9.9
Green Ext Time (p_c), s	0.1	8.7	0.0	2.5	0.8	3.4	0.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	52	66	156	76	116
Future Volume (vph)	131	52	66	156	76	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35	35		35	
Link Distance (ft)		699	561		1557	
Travel Time (s)		13.6	10.9		30.3	
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles (%)	5%	2%	0%	5%	12%	1%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

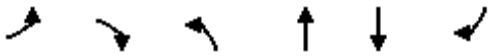
Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	131	52	66	156	76	116
Future Vol, veh/h	131	52	66	156	76	116
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	63	63	63	63	63	63
Heavy Vehicles, %	5	2	0	5	12	1
Mvmt Flow	208	83	105	248	121	184

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	353	0	-	0	728	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	499	-
Critical Hdwy	4.15	-	-	-	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.245	-	-	-	3.608	3.309
Pot Cap-1 Maneuver	1189	-	-	-	376	813
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1189	-	-	-	307	813
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	23.5
HCM LOS			C

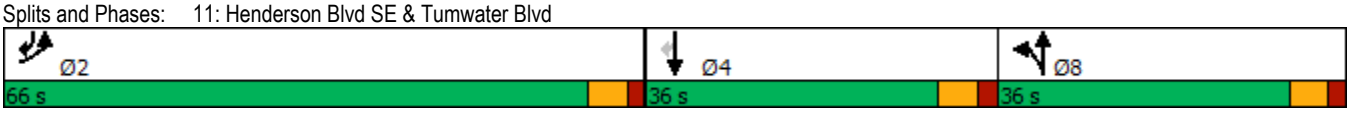
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1189	-	-	-	492
HCM Lane V/C Ratio	0.175	-	-	-	0.619
HCM Control Delay (s)	8.7	0	-	-	23.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	4.1

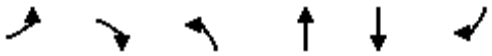


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	230	10	38	160	153	547
Future Volume (vph)	230	10	38	160	153	547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			125
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	844			630	421	
Travel Time (s)	16.4			12.3	8.2	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	10%	3%	3%	2%	2%
Shared Lane Traffic (%)						
Turn Type	Prot		Split	NA	NA	pm+ov
Protected Phases	2		8	8	4	2
Permitted Phases						4
Detector Phase	2		8	8	4	2
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	32.0		14.0	14.0	32.0	32.0
Total Split (s)	66.0		36.0	36.0	36.0	66.0
Total Split (%)	47.8%		26.1%	26.1%	26.1%	47.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min		None	None	None	Min

Intersection Summary	
Area Type:	Other
Cycle Length: 138	
Actuated Cycle Length: 73.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Henderson Blvd SE & Tumwater Blvd





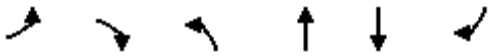
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	230	10	38	160	153	547
Future Volume (veh/h)	230	10	38	160	153	547
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1752	1856	1856	1870	1870
Adj Flow Rate, veh/h	267	12	44	186	178	277
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	7	10	3	3	2	2
Cap, veh/h	378	17	67	283	439	372
Arrive On Green	0.23	0.23	0.19	0.19	0.23	0.23
Sat Flow, veh/h	1623	73	352	1486	1870	1585
Grp Volume(v), veh/h	280	0	230	0	178	277
Grp Sat Flow(s),veh/h/ln	1702	0	1838	0	1870	1585
Q Serve(g_s), s	7.9	0.0	6.1	0.0	4.2	8.5
Cycle Q Clear(g_c), s	7.9	0.0	6.1	0.0	4.2	8.5
Prop In Lane	0.95	0.04	0.19			1.00
Lane Grp Cap(c), veh/h	396	0	350	0	439	372
V/C Ratio(X)	0.71	0.00	0.66	0.00	0.41	0.74
Avail Cap(c_a), veh/h	1941	0	1048	0	1066	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	19.7	0.0	17.0	18.7
Incr Delay (d2), s/veh	4.9	0.0	4.4	0.0	0.6	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	2.7	0.0	1.7	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	0.0	24.1	0.0	17.6	21.7
LnGrp LOS	C	A	C	A	B	C
Approach Vol, veh/h	280			230	455	
Approach Delay, s/veh	23.4			24.1	20.1	
Approach LOS	C			C	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	18.2	18.3	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	60.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	9.9	10.5	8.1
Green Ext Time (p_c), s	2.3	1.8	2.3

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	1	6	274	220	101
Future Volume (vph)	34	1	6	274	220	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			35	35	
Link Distance (ft)	290			539	432	
Travel Time (s)	6.6			10.5	8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	0%	0%	6%	6%	5%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

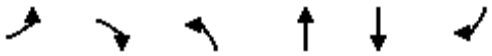
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	1	6	274	220	101
Future Vol, veh/h	34	1	6	274	220	101
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, %	12	0	0	6	6	5
Mvmt Flow	37	1	7	298	239	110

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	606	294	349	0	-	0
Stage 1	294	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.52	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	444	750	1221	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	441	750	1221	-	-	-
Mov Cap-2 Maneuver	441	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	720	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1221	-	446	-	-
HCM Lane V/C Ratio	0.005	-	0.085	-	-
HCM Control Delay (s)	8	0	13.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	3	19	269	188	33
Future Volume (vph)	11	3	19	269	188	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	20			35	35	
Link Distance (ft)	212			1557	539	
Travel Time (s)	7.2			30.3	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	0%	0%	6%	6%	6%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	19	269	188	33
Future Vol, veh/h	11	3	19	269	188	33
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, %	9	0	0	6	6	6
Mvmt Flow	12	3	21	292	204	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	556	222	240	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.49	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	480	823	1339	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	471	823	1339	-	-	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.5	0
HCM LOS	B		

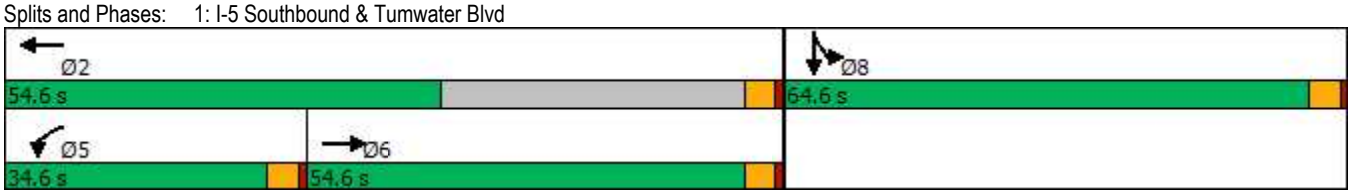
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1339	-	519	-	-
HCM Lane V/C Ratio	0.015	-	0.029	-	-
HCM Control Delay (s)	7.7	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

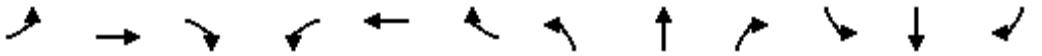
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	388	107	366	313	0	0	0	0	525	2	227
Future Volume (vph)	0	388	107	366	313	0	0	0	0	525	2	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	0		0	310		0	0		0	300		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		1022			789			640			375	
Travel Time (s)		19.9			15.4			10.9			6.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	2%	0%	0%
Shared Lane Traffic (%)										26%		
Turn Type		NA		Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases												
Detector Phase		6		5	2					8	8	
Switch Phase												
Minimum Initial (s)		10.0		6.0	10.0					5.0	5.0	
Minimum Split (s)		29.6		10.6	26.6					32.6	32.6	
Total Split (s)		54.6		34.6	54.6					64.6	64.6	
Total Split (%)		35.5%		22.5%	35.5%					42.0%	42.0%	
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6					4.6	4.6	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Min		None	Min					None	None	

Intersection Summary

Area Type: Other
Cycle Length: 153.8
Actuated Cycle Length: 102.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-5 Southbound & Tumwater Blvd





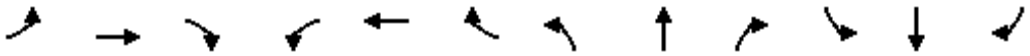
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	388	107	366	313	0	0	0	0	525	2	227
Future Volume (veh/h)	0	388	107	366	313	0	0	0	0	525	2	227
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1832	1847	1900	1885	0				1870	1900	1900
Adj Flow Rate, veh/h	0	441	122	416	356	0				428	238	258
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	1	0	0	1	0				2	0	0
Cap, veh/h	0	603	165	467	1016	0				618	289	314
Arrive On Green	0.00	0.22	0.22	0.26	0.54	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	2791	740	1810	1885	0				1781	834	904
Grp Volume(v), veh/h	0	283	280	416	356	0				428	0	496
Grp Sat Flow(s),veh/h/ln	0	1741	1699	1810	1885	0				1781	0	1737
Q Serve(g_s), s	0.0	12.2	12.4	17.8	8.7	0.0				16.6	0.0	21.0
Cycle Q Clear(g_c), s	0.0	12.2	12.4	17.8	8.7	0.0				16.6	0.0	21.0
Prop In Lane	0.00		0.44	1.00		0.00				1.00		0.52
Lane Grp Cap(c), veh/h	0	389	379	467	1016	0				618	0	603
V/C Ratio(X)	0.00	0.73	0.74	0.89	0.35	0.00				0.69	0.00	0.82
Avail Cap(c_a), veh/h	0	1080	1054	673	1169	0				1326	0	1293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.0	29.1	28.8	10.6	0.0				22.6	0.0	24.0
Incr Delay (d2), s/veh	0.0	2.6	2.8	10.3	0.2	0.0				1.4	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	5.1	8.6	3.2	0.0				6.6	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.7	31.9	39.1	10.8	0.0				24.0	0.0	26.9
LnGrp LOS	A	C	C	D	B	A				C	A	C
Approach Vol, veh/h		563			772						924	
Approach Delay, s/veh		31.8			26.1						25.6	
Approach LOS		C			C						C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.0			25.4	22.6		32.6				
Change Period (Y+Rc), s		4.6			4.6	4.6		4.6				
Max Green Setting (Gmax), s		50.0			30.0	50.0		60.0				
Max Q Clear Time (g_c+I1), s		10.7			19.8	14.4		23.0				
Green Ext Time (p_c), s		2.2			1.0	3.7		5.0				

Intersection Summary												
HCM 6th Ctrl Delay			27.3									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	720	0	0	610	1510	87	0	283	0	0	0
Future Volume (vph)	193	720	0	0	610	1510	87	0	283	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Storage Length (ft)	225		0	0		0	0		150	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		789			907			278			339	
Travel Time (s)		15.4			17.7			4.7			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	7%	0%	0%	1%	3%	0%	0%	10%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	34.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	193	720	0	0	610	1510	87	0	283	0	0	0
Future Vol, veh/h	193	720	0	0	610	1510	87	0	283	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	225	-	-	-	-	0	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	7	0	0	1	3	0	0	10	0	0	0
Mvmt Flow	219	818	0	0	693	1716	99	0	322	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	693	0	-	-	-	0	1949	1949	409
Stage 1	-	-	-	-	-	-	1256	1256	-
Stage 2	-	-	-	-	-	-	693	693	-
Critical Hdwy	4.13	-	-	-	-	-	6.6	6.5	7.05
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.219	-	-	-	-	-	3.5	4	3.395
Pot Cap-1 Maneuver	900	-	0	0	-	0	~ 64	65	574
Stage 1	-	-	0	0	-	0	235	245	-
Stage 2	-	-	0	0	-	0	500	448	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	900	-	-	-	-	-	~ 48	0	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 48	0	-
Stage 1	-	-	-	-	-	-	178	0	-
Stage 2	-	-	-	-	-	-	500	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	173
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT
Capacity (veh/h)	48	574	900	-	-
HCM Lane V/C Ratio	2.06	0.56	0.244	-	-
HCM Control Delay (s)	$ 673.9	19	10.3	-	-
HCM Lane LOS	F	C	B	-	-
HCM 95th %tile Q(veh)	10	3.4	1	-	-

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	974	25	0	2087	0	9
Future Volume (vph)	974	25	0	2087	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			3%	0%	
Link Speed (mph)	35			35	30	
Link Distance (ft)	907			494	563	
Travel Time (s)	17.7			9.6	12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	16%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	974	25	0	2087	0	9
Future Vol, veh/h	974	25	0	2087	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	3	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	16	0	2	0	0
Mvmt Flow	1082	28	0	2319	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	555
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	-	0	480
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	480
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

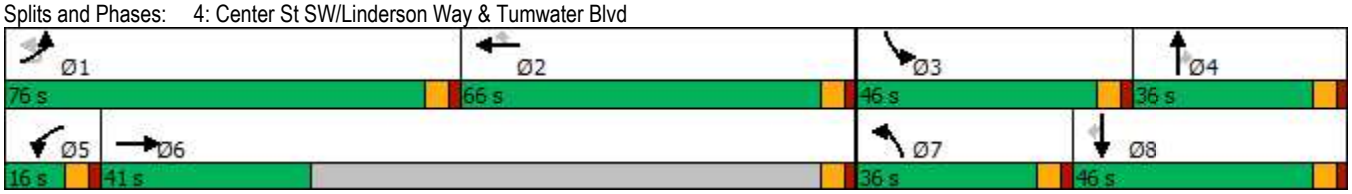
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	480	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Control Delay (s)	12.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

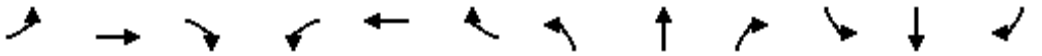
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	639	186	70	817	26	280	129	47	68	116	1008
Future Volume (vph)	138	639	186	70	817	26	280	129	47	68	116	1008
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	275		250	250		100	300		0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		387			996			489			318	
Travel Time (s)		7.5			19.4			9.5			6.2	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	14%	5%	2%	0%	9%	2%	6%	9%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2			4			8
Detector Phase	1	6		5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	33.0		12.0	33.0	33.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (s)	76.0	41.0		16.0	66.0	66.0	36.0	36.0	36.0	46.0	46.0	46.0
Total Split (%)	33.9%	18.3%		7.1%	29.5%	29.5%	16.1%	16.1%	16.1%	20.5%	20.5%	20.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 224
Actuated Cycle Length: 156.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Center St SW/Linderson Way & Tumwater Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	639	186	70	817	26	280	129	47	68	116	1008
Future Volume (veh/h)	138	639	186	70	817	26	280	129	47	68	116	1008
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1693	1826	1870	1900	1767	1870	1811	1767	1856	1900
Adj Flow Rate, veh/h	150	695	202	76	888	28	304	140	51	74	126	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	14	5	2	0	9	2	6	9	3	0
Cap, veh/h	246	920	267	101	1228	556	351	466	382	97	182	
Arrive On Green	0.07	0.36	0.36	0.06	0.35	0.35	0.21	0.25	0.25	0.06	0.10	0.00
Sat Flow, veh/h	3456	2564	745	1739	3554	1609	1682	1870	1535	1682	1856	1610
Grp Volume(v), veh/h	150	455	442	76	888	28	304	140	51	74	126	0
Grp Sat Flow(s),veh/h/ln	1728	1678	1631	1739	1777	1609	1682	1870	1535	1682	1856	1610
Q Serve(g_s), s	3.7	20.7	20.7	3.7	18.9	1.0	15.1	5.3	2.2	3.8	5.7	0.0
Cycle Q Clear(g_c), s	3.7	20.7	20.7	3.7	18.9	1.0	15.1	5.3	2.2	3.8	5.7	0.0
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	602	585	101	1228	556	351	466	382	97	182	
V/C Ratio(X)	0.61	0.76	0.76	0.75	0.72	0.05	0.87	0.30	0.13	0.76	0.69	
Avail Cap(c_a), veh/h	2790	677	658	201	2459	1113	582	647	531	776	856	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.1	24.5	24.5	40.2	24.8	18.9	33.2	26.4	25.3	40.3	37.8	0.0
Incr Delay (d2), s/veh	2.9	4.6	4.7	12.7	1.0	0.0	8.6	0.4	0.2	13.9	5.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.5	8.3	1.9	7.7	0.4	6.8	2.3	0.8	1.9	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	29.0	29.2	52.9	25.7	18.9	41.7	26.9	25.5	54.2	43.5	0.0
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	D	
Approach Vol, veh/h		1047			992			495			200	A
Approach Delay, s/veh		31.0			27.6			35.9			47.4	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	36.0	11.0	27.6	11.0	37.1	24.1	14.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	70.0	60.0	40.0	30.0	10.0	35.0	30.0	40.0
Max Q Clear Time (g_c+I1), s	5.7	20.9	5.8	7.3	5.7	22.7	17.1	7.7
Green Ext Time (p_c), s	0.7	9.1	0.2	1.0	0.1	5.3	1.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

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

LANE SUMMARY

Site: 101 [5 - New Market St SW / Tumwater Blvd (PM Peak Hour) (Site Folder: 2023 With Project)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: New Market St SW													
Lane 1	27	4.0	798	0.034	100	11.8	LOS B	0.1	3.0	Full	1600	0.0	0.0
Lane 2[d]	42	7.7	990	0.043	100	5.6	LOS A	0.2	4.1	Full	1600	0.0	0.0
Approach	70	6.3		0.043		8.0	LOS A	0.2	4.1				
East: Tumwater Blvd													
Lane 1	443	2.9	1341	0.331	100	4.2	LOS A	2.0	50.9	Full	1600	0.0	0.0
Lane 2[d]	523	4.4	1582	0.331	100	3.5	LOS A	2.0	52.4	Full	1600	0.0	0.0
Approach	966	3.7		0.331		3.8	LOS A	2.0	52.4				
North: New Market St SW													
Lane 1	18	17.7	518	0.036	100	13.8	LOS B	0.1	3.4	Full	1600	0.0	0.0
Lane 2[d]	74	5.9	971	0.076	100	5.6	LOS A	0.3	7.7	Full	1600	0.0	0.0
Approach	92	8.3		0.076		7.3	LOS A	0.3	7.7				
West: Tumwater Blvd													
Lane 1	388	10.7	1315	0.295	100	5.1	LOS A	1.7	47.4	Full	1600	0.0	0.0
Lane 2[d]	487	5.0	1648	0.295	100	3.2	LOS A	1.8	46.1	Full	1600	0.0	0.0
Approach	875	7.5		0.295		4.0	LOS A	1.8	47.4				
Intersection	2003	5.7		0.331		4.2	LOS A	2.0	52.4				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: New Market St SW

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	2	-	27	4.0	798	0.034	100	NA	NA
Lane 2	-	-	42	42	7.7	990	0.043	100	NA	NA
Approach	25	2	42	70	6.3		0.043			

East: Tumwater Blvd

Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	1	33	410	-	443	2.9	1341	0.331	100	NA	NA
Lane 2	-	-	476	47	523	4.4	1582	0.331	100	NA	NA
Approach	1	33	886	47	966	3.7		0.331			

North: New Market St SW

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	17	1	-	18	17.7		518	0.036	100	NA	NA
Lane 2	-	-	74	74	5.9		971	0.076	100	NA	NA
Approach	17	1	74	92	8.3			0.076			

West: Tumwater Blvd

Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	38	46	305	-	388	10.7	1315	0.295	100	NA	NA
Lane 2	-	-	475	12	487	5.0	1648	0.295	100	NA	NA
Approach	38	46	779	12	875	7.5		0.295			

	Total	%HV	Deg.Satn (v/c)
Intersection	2003	5.7	0.331

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

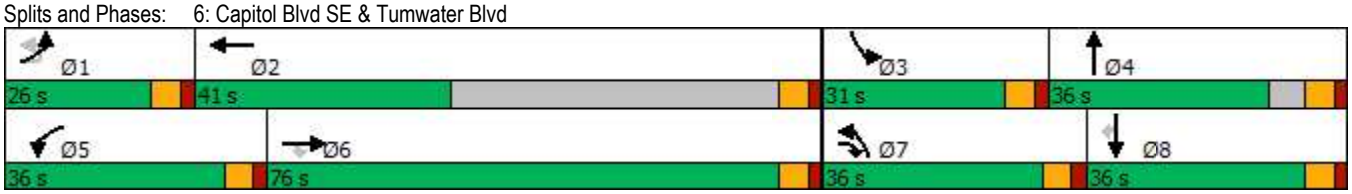
Merge Analysis

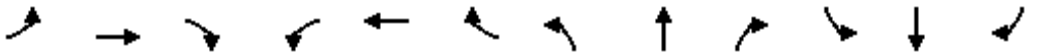
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: New Market St SW Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Tumwater Blvd Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	399	304	101	408	18	246	370	22	136	579	133
Future Volume (vph)	86	399	304	101	408	18	246	370	22	136	579	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	225		0	150		0	225		250
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		463			766			690			587	
Travel Time (s)		9.0			14.9			13.4			11.4	
Confl. Peds. (#/hr)			1	1			3		6	6		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6									8
Detector Phase	1	6	7	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	12.0	35.0	12.0	12.0	35.0		12.0	40.0		12.0	40.0	40.0
Total Split (s)	26.0	76.0	36.0	36.0	41.0		36.0	36.0		31.0	36.0	36.0
Total Split (%)	14.1%	41.3%	19.6%	19.6%	22.3%		19.6%	19.6%		16.8%	19.6%	19.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min		None	None		None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 184	
Actuated Cycle Length: 121.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 6: Capitol Blvd SE & Tumwater Blvd





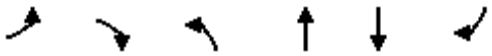
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	399	304	101	408	18	246	370	22	136	579	133
Future Volume (veh/h)	86	399	304	101	408	18	246	370	22	136	579	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	443	338	112	453	20	273	411	24	151	643	148
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	7	7	7	1	1	1	2	2	2	2	2	2
Cap, veh/h	123	555	628	145	1111	49	358	833	48	186	870	385
Arrive On Green	0.07	0.31	0.31	0.08	0.32	0.32	0.10	0.24	0.24	0.10	0.24	0.24
Sat Flow, veh/h	1711	1796	1521	1795	3494	154	3456	3411	199	1781	3554	1573
Grp Volume(v), veh/h	96	443	338	112	232	241	273	213	222	151	643	148
Grp Sat Flow(s),veh/h/ln	1711	1796	1521	1795	1791	1857	1728	1777	1833	1781	1777	1573
Q Serve(g_s), s	5.1	20.7	15.4	5.6	9.3	9.3	7.1	9.5	9.5	7.6	15.3	7.2
Cycle Q Clear(g_c), s	5.1	20.7	15.4	5.6	9.3	9.3	7.1	9.5	9.5	7.6	15.3	7.2
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	123	555	628	145	570	591	358	434	447	186	870	385
V/C Ratio(X)	0.78	0.80	0.54	0.77	0.41	0.41	0.76	0.49	0.50	0.81	0.74	0.38
Avail Cap(c_a), veh/h	373	1371	1318	587	683	709	1130	581	599	485	1162	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	29.1	20.3	41.3	24.5	24.5	40.0	29.8	29.8	40.2	31.9	28.9
Incr Delay (d2), s/veh	10.2	3.2	0.9	8.4	0.6	0.5	1.3	0.9	0.8	3.3	1.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	9.0	5.3	2.8	3.9	4.0	3.0	4.0	4.2	3.4	6.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	32.3	21.2	49.7	25.1	25.1	41.3	30.6	30.7	43.5	33.7	29.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		877			585			708			942	
Approach Delay, s/veh		30.2			29.8			34.7			34.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	35.2	15.6	28.4	13.4	34.4	15.5	28.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	35.0	25.0	30.0	30.0	70.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	7.1	11.3	9.6	11.5	7.6	22.7	9.1	17.3
Green Ext Time (p_c), s	0.2	3.3	0.2	2.3	0.3	5.6	0.5	3.9

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	4	1	450	357	5
Future Volume (vph)	5	4	1	450	357	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	35			35	35	
Link Distance (ft)	579			477	489	
Travel Time (s)	11.3			9.3	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	0%	0%	6%	7%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

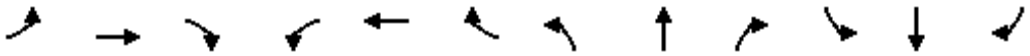
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	450	357	5
Future Vol, veh/h	5	4	1	450	357	5
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, %	40	0	0	6	7	0
Mvmt Flow	5	4	1	489	388	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	882	391	393	0	-	0
Stage 1	391	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Critical Hdwy	6.8	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	273	662	1177	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	273	662	1177	-	-	-
Mov Cap-2 Maneuver	273	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	544	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1177	-	369	-	-
HCM Lane V/C Ratio	0.001	-	0.027	-	-
HCM Control Delay (s)	8.1	0	15	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	8	0	10	12	41	2	346	44	15	284	62
Future Volume (vph)	64	8	0	10	12	41	2	346	44	15	284	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		551			457			1032			477	
Travel Time (s)		10.7			8.9			20.1			9.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	0%	0%	10%	25%	17%	50%	5%	11%	53%	4%	13%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

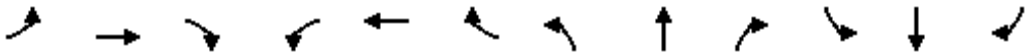
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	64	8	0	10	12	41	2	346	44	15	284	62
Future Vol, veh/h	64	8	0	10	12	41	2	346	44	15	284	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	0	0	10	25	17	50	5	11	53	4	13
Mvmt Flow	68	9	0	11	13	44	2	368	47	16	302	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	791	786	335	768	796	392	368	0	0	415	0	0
Stage 1	367	367	-	396	396	-	-	-	-	-	-	-
Stage 2	424	419	-	372	400	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.2	7.2	6.75	6.37	4.6	-	-	4.63	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.2	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.2	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.3	3.59	4.225	3.453	2.65	-	-	2.677	-	-
Pot Cap-1 Maneuver	306	326	712	309	295	625	969	-	-	917	-	-
Stage 1	650	626	-	614	566	-	-	-	-	-	-	-
Stage 2	606	593	-	632	564	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	270	318	712	297	288	625	969	-	-	917	-	-
Mov Cap-2 Maneuver	270	318	-	297	288	-	-	-	-	-	-	-
Stage 1	648	612	-	612	564	-	-	-	-	-	-	-
Stage 2	549	591	-	610	552	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.1	14.5	0	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	969	-	-	275	447	917	-	-
HCM Lane V/C Ratio	0.002	-	-	0.279	0.15	0.017	-	-
HCM Control Delay (s)	8.7	0	-	23.1	14.5	9	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.5	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	11	0	17	1	373	1	2	291	1
Future Volume (vph)	2	0	1	11	0	17	1	373	1	2	291	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		408			554			434			1032	
Travel Time (s)		9.3			12.6			8.5			20.1	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	3%	100%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

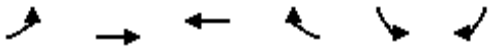
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	11	0	17	1	373	1	2	291	1
Future Vol, veh/h	2	0	1	11	0	17	1	373	1	2	291	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	3	100
Mvmt Flow	2	0	1	13	0	20	1	434	1	2	338	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	791	781	340	780	781	435	340	0	0	435	0	0
Stage 1	344	344	-	437	437	-	-	-	-	-	-	-
Stage 2	447	437	-	343	344	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	310	329	707	315	329	625	1230	-	-	1135	-	-
Stage 1	676	640	-	602	583	-	-	-	-	-	-	-
Stage 2	595	583	-	676	640	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	299	328	706	314	328	625	1229	-	-	1135	-	-
Mov Cap-2 Maneuver	299	328	-	314	328	-	-	-	-	-	-	-
Stage 1	675	638	-	601	582	-	-	-	-	-	-	-
Stage 2	576	582	-	674	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	13.6	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1229	-	-	370	450	1135	-	-
HCM Lane V/C Ratio	0.001	-	-	0.009	0.072	0.002	-	-
HCM Control Delay (s)	7.9	0	-	14.8	13.6	8.2	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	4	4	151	183	71
Future Volume (vph)	77	4	4	151	183	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		35	35		35	
Link Distance (ft)		699	561		1516	
Travel Time (s)		13.6	10.9		29.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	0%	25%	11%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

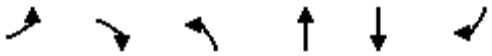
Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	77	4	4	151	183	71
Future Vol, veh/h	77	4	4	151	183	71
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	80	80	80	80	80	80
Heavy Vehicles, %	10	0	25	11	3	3
Mvmt Flow	96	5	5	189	229	89

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	194	0	-	0	297	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	4.2	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.29	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1333	-	-	-	692	953
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	834	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1333	-	-	-	642	953
Mov Cap-2 Maneuver	-	-	-	-	642	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	14.2
HCM LOS			B

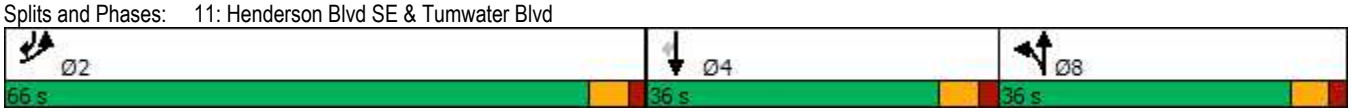
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	706
HCM Lane V/C Ratio	0.072	-	-	-	0.45
HCM Control Delay (s)	7.9	0	-	-	14.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.3

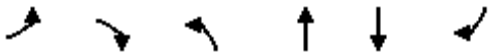


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	503	22	17	221	255	445
Future Volume (vph)	503	22	17	221	255	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			125
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	844			630	421	
Travel Time (s)	16.4			12.3	8.2	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	2%	5%
Shared Lane Traffic (%)						
Turn Type	Prot		Split	NA	NA	pm+ov
Protected Phases	2		8	8	4	2
Permitted Phases						4
Detector Phase	2		8	8	4	2
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	8.0
Minimum Split (s)	32.0		14.0	14.0	32.0	32.0
Total Split (s)	66.0		36.0	36.0	36.0	66.0
Total Split (%)	47.8%		26.1%	26.1%	26.1%	47.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min		None	None	None	Min

Intersection Summary	
Area Type:	Other
Cycle Length: 138	
Actuated Cycle Length: 108.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Henderson Blvd SE & Tumwater Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	503	22	17	221	255	445
Future Volume (veh/h)	503	22	17	221	255	445
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1900	1900	1885	1870	1826
Adj Flow Rate, veh/h	547	24	18	240	277	285
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	1	2	5
Cap, veh/h	646	28	24	317	420	347
Arrive On Green	0.38	0.38	0.18	0.18	0.22	0.22
Sat Flow, veh/h	1695	74	131	1748	1870	1547
Grp Volume(v), veh/h	572	0	258	0	277	285
Grp Sat Flow(s),veh/h/ln	1772	0	1879	0	1870	1547
Q Serve(g_s), s	24.9	0.0	11.0	0.0	11.4	14.8
Cycle Q Clear(g_c), s	24.9	0.0	11.0	0.0	11.4	14.8
Prop In Lane	0.96	0.04	0.07			1.00
Lane Grp Cap(c), veh/h	676	0	340	0	420	347
V/C Ratio(X)	0.85	0.00	0.76	0.00	0.66	0.82
Avail Cap(c_a), veh/h	1259	0	668	0	665	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	32.8	0.0	29.8	31.1
Incr Delay (d2), s/veh	6.2	0.0	7.2	0.0	1.8	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.0	5.5	0.0	5.1	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.1	0.0	40.0	0.0	31.6	36.6
LnGrp LOS	C	A	D	A	C	D
Approach Vol, veh/h	572			258	562	
Approach Delay, s/veh	30.1			40.0	34.1	
Approach LOS	C			D	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	38.2	24.9	21.3
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	60.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	26.9	16.8	13.0
Green Ext Time (p_c), s	5.3	2.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

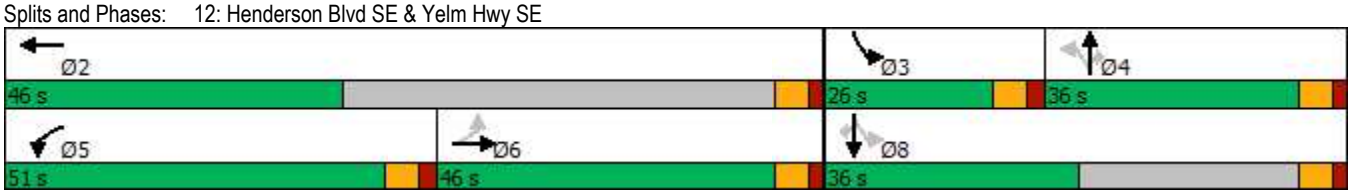
Notes

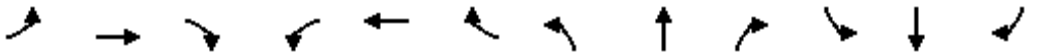
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	731	79	494	543	66	65	130	548	77	185	24
Future Volume (vph)	21	731	79	494	543	66	65	130	548	77	185	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	450		0	150		125	0		125
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1049			946			585			420	
Travel Time (s)		20.4			18.4			11.4			8.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	3%	2%	1%	3%	2%	1%	1%	5%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Prot	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		6		5	2			4		3	8	
Permitted Phases	6						4		4	8		8
Detector Phase	6	6		5	2		4	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.0	6.0		6.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	23.0	23.0		11.0	33.0		34.0	34.0	34.0	11.0	32.0	32.0
Total Split (s)	46.0	46.0		51.0	46.0		36.0	36.0	36.0	26.0	36.0	36.0
Total Split (%)	28.9%	28.9%		32.1%	28.9%		22.6%	22.6%	22.6%	16.4%	22.6%	22.6%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes		
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 159	
Actuated Cycle Length: 131.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 12: Henderson Blvd SE & Yelm Hwy SE





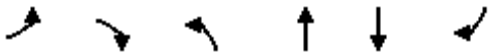
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	731	79	494	543	66	65	130	548	77	185	24
Future Volume (veh/h)	21	731	79	494	543	66	65	130	548	77	185	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1856	1870	1885	1856	1870	1885	1885	1826	1900	1900
Adj Flow Rate, veh/h	21	746	81	504	554	67	66	133	0	79	189	24
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	3	2	1	3	2	1	1	5	0	0
Cap, veh/h	308	942	102	575	2162	261	182	177		196	395	335
Arrive On Green	0.29	0.29	0.29	0.32	0.67	0.67	0.09	0.09	0.00	0.05	0.21	0.21
Sat Flow, veh/h	816	3259	354	1781	3218	388	1168	1885	1598	1739	1900	1610
Grp Volume(v), veh/h	21	410	417	504	308	313	66	133	0	79	189	24
Grp Sat Flow(s),veh/h/ln	816	1791	1822	1781	1791	1815	1168	1885	1598	1739	1900	1610
Q Serve(g_s), s	1.9	21.0	21.1	26.7	6.8	6.8	5.4	6.9	0.0	4.0	8.7	1.2
Cycle Q Clear(g_c), s	1.9	21.0	21.1	26.7	6.8	6.8	5.4	6.9	0.0	4.0	8.7	1.2
Prop In Lane	1.00		0.19	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	518	526	575	1203	1220	182	177		196	395	335
V/C Ratio(X)	0.07	0.79	0.79	0.88	0.26	0.26	0.36	0.75		0.40	0.48	0.07
Avail Cap(c_a), veh/h	399	718	730	804	1203	1220	424	567		452	571	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	32.7	32.7	31.9	6.5	6.5	43.4	44.0	0.0	36.6	34.8	31.8
Incr Delay (d2), s/veh	0.1	4.6	4.6	11.1	0.1	0.1	0.5	2.4	0.0	0.5	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	9.5	9.6	12.8	2.3	2.3	1.6	3.3	0.0	1.7	4.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	37.3	37.3	43.0	6.6	6.6	43.8	46.4	0.0	37.1	35.8	31.9
LnGrp LOS	C	D	D	D	A	A	D	D		D	D	C
Approach Vol, veh/h		848			1125			199	A		292	
Approach Delay, s/veh		37.0			22.9			45.6			35.9	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	73.0	11.3	15.4	38.2	34.8	26.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	40.0	20.0	30.0	45.0	40.0	30.0
Max Q Clear Time (g_c+I1), s	8.8	6.0	8.9	28.7	23.1	10.7
Green Ext Time (p_c), s	4.0	0.1	0.5	3.5	5.8	1.2

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	116	4	2	259	253	50
Future Volume (vph)	116	4	2	259	253	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			35	35	
Link Distance (ft)	304			578	434	
Travel Time (s)	6.9			11.3	8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	0%	0%	5%	2%	10%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

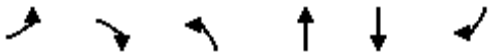
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	116	4	2	259	253	50
Future Vol, veh/h	116	4	2	259	253	50
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, %	4	0	0	5	2	10
Mvmt Flow	126	4	2	282	275	54

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	588	302	329	0	-	0
Stage 1	302	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Critical Hdwy	6.44	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	468	742	1242	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	467	742	1242	-	-	-
Mov Cap-2 Maneuver	467	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	758	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1242	-	473	-	-
HCM Lane V/C Ratio	0.002	-	0.276	-	-
HCM Control Delay (s)	7.9	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	13	6	222	241	16
Future Volume (vph)	39	13	6	222	241	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			35	35	
Link Distance (ft)	259			1516	578	
Travel Time (s)	5.9			29.5	11.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	0%	5%	1%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	13	6	222	241	16
Future Vol, veh/h	39	13	6	222	241	16
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, %	5	0	0	5	1	13
Mvmt Flow	42	14	7	241	262	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	526	271	279	0	-	0
Stage 1	271	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.45	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	507	773	1295	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	504	773	1295	-	-	-
Mov Cap-2 Maneuver	504	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1295	-	552	-	-
HCM Lane V/C Ratio	0.005	-	0.102	-	-
HCM Control Delay (s)	7.8	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Appendix C

Existing Conditions Safety Analysis

Input Worksheet for Crossroad Ramp Terminals														
Clear	Echo Input Values	Check Input Values	Terminal 1		Terminal 2		Terminal 3		Terminal 4		Terminal 5		Terminal 6	
	(View results in Column T)	(View results in Advisory Messages)	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period
Basic Intersection Data														
Ramp terminal configuration:			D4	D4	D4	D4		0		0		0		0
Ramp terminal description:			1 - I-5 SB/Tumwater Blvd		2 - I-5 NB/Tumwater Blvd									
Ramp terminal traffic control type:			Signal	Signal	One stop	One stop		0		0		0		0
Is a non-ramp public street leg present at the terminal (I_{ps})?:			No	No										
Alignment Data														
Exit ramp skew angle (I_{sk}), degrees:					14	14								
Distance to the next public street intersection on the outside crossroad leg (L_{str}), mi:			0.14	0.14	0.16572	0.16572								
Distance to the adjacent ramp terminal (L_{rmp}), mi:			0.155303	0.155303	0.155303	0.155303								
Traffic Control														
Left-Turn Operational Mode														
Crossroad	Inside approach	Protected-only mode ($I_{p,lt,in}$)?:	Yes	Yes										
	Outside approach	Protected-only mode ($I_{p,lt,out}$)?:												
Right-Turn Control Type														
Ramp	Exit ramp approach	Right-turn control type	Signal	Signal	Stop	Stop								
Cross Section Data														
Crossroad median width (W_m), ft:			12	12	10	10								
Number of Lanes														
Crossroad	Both approaches	Lanes serving through vehicles (n_{th}):	3	3	3	3		0		0		0		0
	Inside approach	Lanes serving through vehicles ($n_{th,in}$):	1	1										0
	Outside approach	Lanes serving through vehicles ($n_{th,out}$):	2	2									0	0
Ramp	Exit ramp approach	All lanes (n_{ex}):	2	2	2	2		0		0		0		0
Right-Turn Channelization		see note ↗												
Crossroad	Inside approach	Channelization present ($I_{ch,in}$)?:												
	Outside approach	Channelization present ($I_{ch,out}$)?:	No	Yes										
Ramp	Exit ramp approach	Channelization present ($I_{ch,ex}$)?:	No	No										
Left-Turn Lane or Bay														
Crossroad	Inside approach	Lane or bay present ($I_{bay,lt,in}$)?:	Yes	Yes	Yes	Yes								
		Width of lane or bay ($W_{b,in}$), ft:	11	11	11	11								
	Outside approach	Lane or bay present ($I_{bay,lt,out}$)?:												
		Width of lane or bay ($W_{b,out}$), ft:												
Right-Turn Lane or Bay														
Crossroad	Inside approach	Lane or bay present ($I_{bay,rt,in}$)?:												
	Outside approach	Lane or bay present ($I_{bay,rt,out}$)?:	No	No	Yes	Yes								
Access Data														
Number of driveways on the outside crossroad leg (n_{dw}):			0	0										
Number of public street approaches on the outside crossroad leg (n_{ps}):														
Traffic Data		Year												
Inside Crossroad Leg Data		2016												
Average daily traffic ($AADT_{in}$) by year, veh/d:		2017												
(enter data only for those years for whic		2018												
it is available, leave other years blanl		2019												
		2020	11,000		11,000									
		2021												
		2022												
		2023	12,300		12,300									
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Outside Crossroad Leg Data		2016												
Average daily traffic ($AADT_{out}$) by year, veh/d:		2017												
(enter data only for those years for whic		2018												
it is available, leave other years blanl		2019												
		2020	7,400		20,600									
		2021												
		2022												
		2023	8,300		22,900									
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												

Terminal 1		Terminal 2		Terminal 3		Terminal 4		Terminal 5		Terminal 6	
Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period
D4	D4	A2	A2	D3ex	D3ex	D4	D4	B4	B4	A4	A4
NB exit ramp at Main		SB exit ramp at Main			Alt 1						
Signal	Signal	One stop	One stop	One stop	One stop	All stop	All stop	One stop	One stop	Signal	Signal
No	No									No	No
0.0	0.0	1.0	1.0	15.0	15.0	0.0	0.0	52.0	52.0	0.0	0.0
0.14	0.14	0.13	0.13	0.57	0.57	0.55	0.55	0.12	0.12	0.08	0.08
0.12	0.12	0.15	0.15	0.15	0.15	0.09	0.09	0.16	0.16	0.17	0.17
Yes	Yes										
Signal	Signal	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Yield	Yield
12.0	12.0	15.0	15.0	16.0	16.0	0.0	0.0	12.0	12.0	0.0	0.0
4	4	2	2	4	4	2	2	2	2	5	5
2	2	0	0	0	0	0	0	0	0	2	2
2	2	0	0	0	0	0	0	0	0	3	3
3	3	1	1	1	1	1	1	1	1	2	2
										No	No
Yes	Yes									No	No
No	No									Yes	Yes
Yes	Yes							Yes	Yes		
10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	10.0	0.0	0.0
		Yes	Yes								
0.0	0.0	12.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Yes	Yes							Yes	Yes
Yes	Yes							No	No	Yes	Yes
1	1	0	0	0	0	0	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	0
49887		6985		0		3677		8814		23500	
0		7000		0		0		0		0	
50000		0		7142		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
52000		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
49887		0		0		3677		8814		0	
0		6985		7142		0		0		0	
50000		7000		7142		0		0		23500	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	
0		0		0		0		0		0	

	2034							0		0		0		0		0	
	2035							0		0		0		0		0	
	2036							0		0		0		0		0	
	2037							0		0		0		0		0	
	2038							0		0		0		0		0	
	2039							0		0		0		0		0	
Exit Ramp Data	2016							12683		806		2580		958		1782	
Average daily traffic ($AADT_{ea}$) by year, veh/d:	2017							0		0		2580		0		0	
(enter data only for those years for whic	2018							0		0		2580		0		0	
it is available, leave other years blanl	2019							0		0		0		0		0	
	2020	6800	2300					0		0		0		0		0	
For a B4 terminal configuration, enter the AADT for the	2021							0		0		0		0		0	
diagonal exit ramp (not the loop exit ramp).	2022							0		0		0		0		0	
	2023	7700	2600					0		0		0		0		0	
	2024							0		0		0		0		0	
	2025							0		0		0		0		0	
	2026							0		0		0		0		0	
	2027							0		0		0		0		0	
	2028							0		0		0		0		0	
	2029							0		0		0		0		0	
	2030							0		0		0		0		0	
	2031							0		0		0		0		0	
	2032							0		0		0		0		0	
	2033							0		0		0		0		0	
	2034							0		0		0		0		0	
	2035							0		0		0		0		0	
	2036							0		0		0		0		0	
	2037							0		0		0		0		0	
	2038							0		0		0		0		0	
	2039							0		0		0		0		0	
Entrance Ramp Data	2016							0		0		0		3437		0	
Average daily traffic ($AADT_{ea}$) by year, veh/d:	2017							0		4050		0		0		4610	
(enter data only for those years for whic	2018							7807		0		0		0		0	
it is available, leave other years blanl	2019							0		0		0		0		0	
	2020	2500	7500					0		0		0		0		0	
For an A4 terminal configuration, enter the AADT for the	2021							0		0		0		0		0	
diagonal entrance ramp (not the loop entrance ramp).	2022							0		0		0		0		0	
	2023	2900	8500					0		0		0		0		0	
	2024							0		0		0		0		0	
	2025							0		0		0		0		0	
	2026							0		0		0		0		0	
	2027							0		0		0		0		0	
	2028							0		0		0		0		0	
	2029							0		0		0		0		0	
	2030							0		0		0		0		0	
	2031							0		0		0		0		0	
	2032							0		0		0		0		0	
	2033							0		0		0		0		0	
	2034							0		0		0		0		0	
	2035							0		0		0		0		0	
	2036							0		0		0		0		0	
	2037							0		0		0		0		0	
	2038							0		0		0		0		0	
	2039							0		0		0		0		0	
Crash Data	**Year**	Ramp Terminal Crashes -->															
Count of Fatal-and-Injury (FI) Crashes by Year																	
($N_{o,w,ac,at,fi}$)	2016	2	0									12	0	0	0	2	1
	2017	7	1									12	1	0	0	2	2
	2018	2	0									12	1	0	0	2	1
	2019	1	1									0	0	0	0	0	0
	2020	0	1									0	0	0	0	0	0
Count of Property-Damage-Only (PDO) Crashes by Year																	
($N_{o,w,ac,at,pdo}$)	2016	8	4									10	0	1	0	1	2
	2017	7	2									10	1	1	0	1	2
	2018	6	2									10	0	0	0	0	3
	2019	4	2									0	0	0	0	0	0
	2020	3	1									0	0	0	0	0	0

Advisory Messages

Variable Limits												
Number of Lanes												
Both approaches	6	6	4	4	4	4	4	4	4	4	4	4
Ramp	4	4	2	2	2	2	2	2	2	2	2	2

Output Worksheet for Crossroad Ramp Terminals														
Signal = signalized intersection model Unsig = unsignalized intersection model	Applicable Models		Terminal 1		Terminal 2		Terminal 3		Terminal 4		Terminal 5		Terminal 6	
			Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period	Crash Period	Study Period
Crash Modification Factors														
Fatal-and-Injury Crash CMFs														
Non-ramp public street leg ($CMF_{19,w,SG,at,fi}$):	Signal		1.000	1.000										
Segment length ($CMF_{14,w,x,at,fi}$):	Signal	Unsig	0.783	0.783	0.843	0.843								
Protected left-turn operation ($CMF_{16,w,SG,at,fi}$):	Signal													
	Year:	2016	0.657	0.657										
		2017	0.657	0.657										
		2018	0.657	0.657										
		2019	0.657	0.657										
		2020	0.657	0.657										
		2021	0.658	0.658										
		2022	0.659	0.659										
		2023	0.659	0.659										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Channelized right turn on crossroad ($CMF_{17,w,SG,at,fi}$):	Signal													
	Year:	2016	1.000	1.159										
		2017	1.000	1.159										
		2018	1.000	1.159										
		2019	1.000	1.159										
		2020	1.000	1.159										
		2021	1.000	1.158										
		2022	1.000	1.158										
		2023	1.000	1.158										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												

		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Channelized right turn on exit ramp ($CMF_{18,w,SG,at,fi}$):	Signal													
	Year:	2016	1.000	1.000										
		2017	1.000	1.000										
		2018	1.000	1.000										
		2019	1.000	1.000										
		2020	1.000	1.000										
		2021	1.000	1.000										
		2022	1.000	1.000										
		2023	1.000	1.000										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Access point frequency ($CMF_{13,w,x,at,fi}$):	Signal	Unsig												
	Year:	2016	1.000	1.000	1.000	1.000								
		2017	1.000	1.000	1.000	1.000								
		2018	1.000	1.000	1.000	1.000								
		2019	1.000	1.000	1.000	1.000								
		2020	1.000	1.000	1.000	1.000								
		2021	1.000	1.000	1.000	1.000								
		2022	1.000	1.000	1.000	1.000								
		2023	1.000	1.000	1.000	1.000								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												

		2039												
Crossroad left-turn lane ($CMF_{11,w,x,at,fi}$):	Signal	Unsig												
	Year:	2016	0.861	0.861	0.891	0.891								
		2017	0.861	0.861	0.891	0.891								
		2018	0.861	0.861	0.891	0.891								
		2019	0.861	0.861	0.891	0.891								
		2020	0.861	0.861	0.891	0.891								
		2021	0.861	0.861	0.891	0.891								
		2022	0.862	0.862	0.891	0.891								
		2023	0.862	0.862	0.891	0.891								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Crossroad right-turn lane ($CMF_{12,w,x,at,fi}$):	Signal	Unsig												
	Year:	2016	1.000	1.000	0.935	0.935								
		2017	1.000	1.000	0.935	0.935								
		2018	1.000	1.000	0.935	0.935								
		2019	1.000	1.000	0.935	0.935								
		2020	1.000	1.000	0.935	0.935								
		2021	1.000	1.000	0.935	0.935								
		2022	1.000	1.000	0.936	0.936								
		2023	1.000	1.000	0.936	0.936								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Median width ($CMF_{15,w,x,at,fi}$):	Signal	Unsig												
	Year:	2016	1.000	1.000	1.000	1.000								
		2017	1.000	1.000	1.000	1.000								

		2018	1.000	1.000	1.000	1.000								
		2019	1.000	1.000	1.000	1.000								
		2020	1.000	1.000	1.000	1.000								
		2021	1.000	1.000	1.000	1.000								
		2022	1.000	1.000	1.000	1.000								
		2023	1.000	1.000	1.000	1.000								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Exit ramp capacity ($CMF_{10,w,x,at,fi}$):	Signal	Unsig												
	Year:	2016	1.141	1.141	1.023	1.023								
		2017	1.141	1.141	1.023	1.023								
		2018	1.141	1.141	1.023	1.023								
		2019	1.141	1.141	1.023	1.023								
		2020	1.141	1.141	1.023	1.023								
		2021	1.149	1.149	1.024	1.024								
		2022	1.158	1.158	1.026	1.026								
		2023	1.166	1.166	1.027	1.027								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Skew angle ($CMF_{20,w,ST,at,fi}$):		Unsig												
	Year:	2016			1.012	1.012								
		2017			1.012	1.012								
		2018			1.012	1.012								
		2019			1.012	1.012								
		2020			1.012	1.012								
		2021			1.012	1.012								
		2022			1.013	1.013								

		2023			1.013	1.013								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
All-way stop control (CMF_{awsc}):		Unsig												
Property-Damage-Only Crash CMFs														
Non-ramp public street leg ($CMF_{19,w,SG,at,pdo}$):	Signal		1.000	1.000										
Segment length ($CMF_{14,w,x,at,pdo}$):	Signal		0.782	0.782										
Protected left-turn operation ($CMF_{16,w,SG,at,pdo}$):	Signal													
	Year:	2016	0.761	0.761										
		2017	0.761	0.761										
		2018	0.761	0.761										
		2019	0.761	0.761										
		2020	0.761	0.761										
		2021	0.762	0.762										
		2022	0.762	0.762										
		2023	0.762	0.762										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Channelized right turn on crossroad ($CMF_{17,w,SG,at,pdo}$):	Signal													
	Year:	2016	1.000	1.158										
		2017	1.000	1.158										
		2018	1.000	1.158										
		2019	1.000	1.158										
		2020	1.000	1.158										
		2021	1.000	1.158										
		2022	1.000	1.158										

		2023	1.000	1.157										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Channelized right turn on exit ramp ($CMF_{18,w,SG,at,pdo}$):	Signal													
	Year:	2016	1.000	1.000										
		2017	1.000	1.000										
		2018	1.000	1.000										
		2019	1.000	1.000										
		2020	1.000	1.000										
		2021	1.000	1.000										
		2022	1.000	1.000										
		2023	1.000	1.000										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Access point frequency ($CMF_{13,w,x,at,pdo}$):	Signal													
	Year:	2016	1.000	1.000										
		2017	1.000	1.000										
		2018	1.000	1.000										
		2019	1.000	1.000										
		2020	1.000	1.000										
		2021	1.000	1.000										
		2022	1.000	1.000										
		2023	1.000	1.000										
		2024												
		2025												
		2026												
		2027												

		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Crossroad left-turn lane ($CMF_{11,w,x,at,pdo}$):	Signal	Unsig												
	Year:	2016	0.873	0.873	0.888	0.888								
		2017	0.873	0.873	0.888	0.888								
		2018	0.873	0.873	0.888	0.888								
		2019	0.873	0.873	0.888	0.888								
		2020	0.873	0.873	0.888	0.888								
		2021	0.873	0.873	0.888	0.888								
		2022	0.874	0.874	0.888	0.888								
		2023	0.874	0.874	0.888	0.888								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Crossroad right-turn lane ($CMF_{12,w,x,at,pdo}$):	Signal	Unsig												
	Year:	2016	1.000	1.000	0.846	0.846								
		2017	1.000	1.000	0.846	0.846								
		2018	1.000	1.000	0.846	0.846								
		2019	1.000	1.000	0.846	0.846								
		2020	1.000	1.000	0.846	0.846								
		2021	1.000	1.000	0.846	0.846								
		2022	1.000	1.000	0.846	0.846								
		2023	1.000	1.000	0.847	0.847								
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												

		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Median width ($CMF_{15,w,x,at,pdo}$):	Signal													
	Year:	2016	1.000	1.000										
		2017	1.000	1.000										
		2018	1.000	1.000										
		2019	1.000	1.000										
		2020	1.000	1.000										
		2021	1.000	1.000										
		2022	1.000	1.000										
		2023	1.000	1.000										
		2024												
		2025												
		2026												
		2027												
		2028												
		2029												
		2030												
		2031												
		2032												
		2033												
		2034												
		2035												
		2036												
		2037												
		2038												
		2039												
Expected Average Crash Frequency														
Fatal-and-Injury Crash Frequency														
Ramp Terminal Crash Analysis		**Year**												
Overdispersion parameter ($k_{w,x,at,fi}$):			0.087		0.388									
Observed crash count ($N^*_{o,w,x,at,fi}$), crashes:			12		3									
Reference year (r):			2016		2016									
Predicted average crash freq. for reference year ($N_{p,w,x,at,fi,r}$), crashes/yr:			0.785		0.821									
Equivalent years associated with crash count ($C_{b,w,x,at,fi,r}$), yr:			5.000		5.000									
Expected average crash freq. for reference year given N^*_o ($N_{a,w,x,at,fi,r}$), crashes/yr:			1.196		0.685									
Expected average crash frequency		2016	1.196		0.685									
($N_{e,w,x,at,fi}$), crashes/yr:		2017	1.196		0.685									
		2018	1.196		0.685									
		2019	1.196		0.685									
		2020	1.196		0.685									
		2021		1.472		0.719								
		2022		1.562		0.752								
		2023		1.653		0.786								
		2024												
		2025												
		2026												
		2027												
		2028												

	2029												
	2030												
	2031												
	2032												
	2033												
	2034												
	2035												
	2036												
	2037												
	2038												
	2039												
Property-Damage-Only Crash Frequency													
Ramp Terminal Crash Analysis	**Year**												
Overdispersion parameter ($k_{w,x,at,pdo}$):		0.139		0.234									
Observed crash count ($N^*_{o,w,x,at,pdo}$), crashes:		28		11									
Reference year (r):		2016		2016									
Predicted average crash freq. for reference year ($N_{p,w,x,at,pdo,r}$), crashes/yr:		1.419		2.015									
Equivalent years associated with crash count ($C_{b,w,x,at,pdo,r}$), yr:		5.000		5.000									
Expected average crash freq. for reference year given N^*_o ($N_{a,w,x,at,pdo,r}$), crashes/yr:		3.493		2.145									
Expected average crash frequency	2016	3.493		2.145									
($N_{e,w,x,at,pdo}$), crashes/yr:	2017	3.493		2.145									
	2018	3.493		2.145									
	2019	3.493		2.145									
	2020	3.493		2.145									
	2021		4.296		2.261								
	2022		4.551		2.378								
	2023		4.810		2.496								
	2024												
	2025												
	2026												
	2027												
	2028												
	2029												
	2030												
	2031												
	2032												
	2033												
	2034												
	2035												
	2036												
	2037												
	2038												
	2039												
Crash Severity Distribution (during Study Period)													
Fatal crash frequency ($N^*_{e,w,x,at,K}$), crashes:			0.004		0.012								
Incapacitating injury crash freq. ($N^*_{e,w,x,at,A}$), crashes:			0.107		0.063								
Non-incapacitating inj. crash freq. ($N^*_{e,w,x,at,B}$), crashes:			0.704		0.406								
Possible injury crash freq. ($N^*_{e,w,x,at,C}$), crashes:			3.871		1.776								
Total fatal-and-injury crash freq. ($N^*_{e,w,x,at,fi}$), crashes:			4.687		2.256								
Property-damage-only crash freq. ($N^*_{e,w,x,at,pdo}$), crashes:			13.656		7.134								
Total crash frequency ($N^*_{e,w,x,at,as}$), crashes:			18.344		9.391								

Intermediate Results	Year												
Proportion of total leg AADT on the crossroad (P_{xrd}):	2016	0.664	0.664	0.763	0.763								
	2017	0.664	0.664	0.763	0.763								
	2018	0.664	0.664	0.763	0.763								
	2019	0.664	0.664	0.763	0.763								
	2020	0.664	0.664	0.763	0.763								
	2021	0.663	0.663	0.762	0.762								
	2022	0.661	0.661	0.761	0.761								
	2023	0.660	0.660	0.760	0.760								
	2024												
	2025												
	2026												
	2027												
	2028												
	2029												
	2030												
	2031												
	2032												
	2033												
	2034												
	2035												
	2036												
	2037												
	2038												
	2039												
Proportion of total leg AADT on the inside crossroad leg (P_{in}):	2016	0.397	0.397	0.266	0.266								
	2017	0.397	0.397	0.266	0.266								
	2018	0.397	0.397	0.266	0.266								
	2019	0.397	0.397	0.266	0.266								
	2020	0.397	0.397	0.266	0.266								
	2021	0.396	0.396	0.266	0.266								
	2022	0.395	0.395	0.266	0.266								
	2023	0.394	0.394	0.266	0.266								
	2024												
	2025												
	2026												
	2027												
	2028												
	2029												
	2030												
	2031												
	2032												
	2033												
	2034												
	2035												
	2036												
	2037												
	2038												
	2039												
Proportion of total leg AADT on the outside crossroad leg (P_{out}):	2016	0.267	0.267	0.498	0.498								
	2017	0.267	0.267	0.498	0.498								
	2018	0.267	0.267	0.498	0.498								
	2019	0.267	0.267	0.498	0.498								
	2020	0.267	0.267	0.498	0.498								

	2021	0.267	0.267	0.497	0.497								
	2022	0.266	0.266	0.496	0.496								
	2023	0.266	0.266	0.495	0.495								
	2024												
	2025												
	2026												
	2027												
	2028												
	2029												
	2030												
	2031												
	2032												
	2033												
	2034												
	2035												
	2036												
	2037												
	2038												
	2039												
Proportion of total leg AADT on the exit ramp leg (P_{ex}):	2016	0.245	0.245	0.056	0.056								
	2017	0.245	0.245	0.056	0.056								
	2018	0.245	0.245	0.056	0.056								
	2019	0.245	0.245	0.056	0.056								
	2020	0.245	0.245	0.056	0.056								
	2021	0.246	0.246	0.056	0.056								
	2022	0.246	0.246	0.056	0.056								
	2023	0.247	0.247	0.056	0.056								
	2024												
	2025												
	2026												
	2027												
	2028												
	2029												
	2030												
	2031												
	2032												
	2033												
	2034												
	2035												
	2036												
	2037												
	2038												
	2039												
Traffic Data	**Year**												
Inside Crossroad Leg Data	2016	11000		11000									
Average daily traffic ($AADT_{in}$) by year, veh/d:	2017	11000		11000									
	2018	11000		11000									
	2019	11000		11000									
	2020	11000		11000									
	2021	11433		11433									
	2022	11867		11867									
	2023	12300		12300									
	2024	12300		12300									
	2025	12300		12300									
	2026	12300		12300									

	2027	12300	12300					
	2028	12300	12300					
	2029	12300	12300					
	2030	12300	12300					
	2031	12300	12300					
	2032	12300	12300					
	2033	12300	12300					
	2034	12300	12300					
	2035	12300	12300					
	2036	12300	12300					
	2037	12300	12300					
	2038	12300	12300					
	2039	12300	12300					
Outside Crossroad Leg Data	2016	7400	20600					
Average daily traffic ($AADT_{out}$) by year, veh/d:	2017	7400	20600					
	2018	7400	20600					
	2019	7400	20600					
	2020	7400	20600					
	2021	7700	21367					
	2022	8000	22133					
	2023	8300	22900					
	2024	8300	22900					
	2025	8300	22900					
	2026	8300	22900					
	2027	8300	22900					
	2028	8300	22900					
	2029	8300	22900					
	2030	8300	22900					
	2031	8300	22900					
	2032	8300	22900					
	2033	8300	22900					
	2034	8300	22900					
	2035	8300	22900					
	2036	8300	22900					
	2037	8300	22900					
	2038	8300	22900					
	2039	8300	22900					
Exit Ramp Data	2016	6800	2300					
Average daily traffic ($AADT_{ex}$) by year, veh/d:	2017	6800	2300					
	2018	6800	2300					
	2019	6800	2300					
	2020	6800	2300					
	2021	7100	2400					
	2022	7400	2500					
	2023	7700	2600					
	2024	7700	2600					
	2025	7700	2600					
	2026	7700	2600					
	2027	7700	2600					
	2028	7700	2600					
	2029	7700	2600					
	2030	7700	2600					
	2031	7700	2600					
	2032	7700	2600					
	2033	7700	2600					

	2034	7700		2600								
	2035	7700		2600								
	2036	7700		2600								
	2037	7700		2600								
	2038	7700		2600								
	2039	7700		2600								
Entrance Ramp Data	2016	2500		7500								
Average daily traffic ($AADT_{en}$) by year, veh/d:	2017	2500		7500								
	2018	2500		7500								
	2019	2500		7500								
	2020	2500		7500								
	2021	2633		7833								
	2022	2767		8167								
	2023	2900		8500								
	2024	2900		8500								
	2025	2900		8500								
	2026	2900		8500								
	2027	2900		8500								
	2028	2900		8500								
	2029	2900		8500								
	2030	2900		8500								
	2031	2900		8500								
	2032	2900		8500								
	2033	2900		8500								
	2034	2900		8500								
	2035	2900		8500								
	2036	2900		8500								
	2037	2900		8500								
	2038	2900		8500								
	2039	2900		8500								

Appendix D

Trip Generation Calculations

South Sound Commerce Center
Trip Generation Summary

Land Use	Size [1]	ITE LUC [2]	Directional Distribution[2] In	Directional Distribution[2] Out	Trip Rate [2]	Total Trips Generated In	Total Trips Generated Out	Total Trips Generated Total	Trucks In	Trucks Out	Trucks Total	Non-Trucks In	Non-Trucks Out	Non-Trucks Total
DAILY														
Manufacturing	240,000 GFA	140	50%	50%	(T)=3.77(X)+201.98	554	553	1,107	54	54	108	500	499	999
Warehousing	240,000 GFA	150	50%	50%	(T)=1.58(X)+38.29	208	209	417	72	72	144	136	137	273
					Net Daily Trips =	762	762	1,524	126	126	252	636	636	1,272
AM PEAK HOUR														
Manufacturing	240,000 GFA	140	76%	24%	(T)=0.61(X)+9.54	119	37	156	4	3	7	115	34	149
Warehousing	240,000 GFA	150	77%	23%	(T)=0.12(X)+23.62	40	12	52	3	2	5	37	10	47
					Net AM Peak Hour Trips =	159	49	208	7	5	12	152	44	196
PM PEAK HOUR														
Manufacturing	240,000 GFA	140	31%	69%	(T)=0.87(X)-17.50	59	132	191	3	4	7	56	128	184
Warehousing	240,000 GFA	150	28%	72%	(T)=0.12(X)+26.48	15	40	55	4	3	7	11	37	48
					Net PM Peak Hour Trips =	74	172	246	7	7	14	67	165	232

Notes:

[1] GFA = Gross Floor Area.

[2] Land Use Code, directional distribution, and trip rates based on ITE *Trip Generation* Manual, 11th Edition (2021).

Appendix E

TRPC Model Distribution


2045 PM Trip Distribution-Industrial Park
All Vehicles
2021-08-04
Center St SW
Tumwater Blvd
Tumwater Blvd
75th Ave SW
76th Ave SW
78th Ave SW
New Market St SW
Center St SW
83rd Avenue
Kimmie St SW
Armstrong Rd SW
A
B
C
Disclaimer: This map is for general planning purposes only.
Thurston Regional Planning Council makes no representation
as to accuracy or fitness of the information for a particular purpose.
Aug 04, 2021
Made with Emme. Map tiles ©MapTiler ©OpenStreetMap contributors

2045 PM Trip Distribution-Industrial Park
All Vehicles
2021-08-05

OLYMPIA
Lacey
Tumwater
Capitol Blvd SE
Yelm Hwy
Henderson Blvd SE
Trosper St SW
Littlerock Rd SW
Israel Rd SW
Tumwater Blvd SE
Center St SW
83rd Ave SW
Armstrong Rd SW
Kimmie St SW
88th Ave SW
Old Hwy 99 SE
93rd Ave SE
Case Rd SW/88th Ave SW
Tilley Rd SW

Disclaimer: This map is for general planning purposes only. Thurston Regional Planning Council makes no representation as to accuracy or fitness of the information for a particular purpose. Aug 05, 2021

Appendix F

Thurston County Pro-Rata Mitigation Calculations

South Sound Commerce Center
Thurston County Pro-Rate Traffic Mitigation

County Road Project No.	Capital Facility Project Description	Project Cost	Constant Denominator	Per Trip Cost	New Trips	Mitigation
61325	Littlerock Rd Bridge and 113th Intersection	$800,000	1700	$471	1	$471.00
					TOTAL	**$471.00**

County Project Reviewer _____ Date _____

Permit Type _____ Ref. Traffic Analysis (Firm, Date) _____
Permit No. _____ Project Description _____
Permit Name _____ Number of New Trips _____

County Road Project No.	Capital Facility Project Description	Project Cost in Thousands of Dollars	Constant Denominato	Per Trip Cost	New Trips	Mitigation
61325	Littlerock Rd Bridge and 113th Intersection	$800,000	$1,700	$471	1	$471
Affected Jurisdicitions				**THURSTON COUNTY SUBTOTAL**		**$471**
				TOTAL		**$471**

NOTES:
1. This estimate was prepared with the best available information. The traffic mitigation estimate will be updated annually based on the most current Capital Facilities Plan (CFP).
2. All traffic mitigation unless otherwise noted are due prior to final plat approval, certificate of occupancy or final project acceptance.
3. Project Number: Accounting number for Capital Facility Project.
4. Trip "Hits": Project generated trips intersecting or passing through the project limits of a particular capital facilities project.
5. Project Cost: Please refer to the County Comprehensive Plan, Capital Facility Chapter for additional information.
6. Consistent Denominator: This number represents the capacity at or near Level of Service 'D' or 'C' in the urban and rural areas respectively under ideal conditions as described in the Highway Capacity Manual.