

Memorandum

To: City of Tukwila

From: Bangyu Wang, PhD, PE and Mingwei Shen, PE; HDR

Date: August 22, 2025

Subject: Allentown EIS Intersection Study—Alternative 6 Addendum

Introduction

This memorandum summarizes the traffic analysis conducted to evaluate an additional scenario, Alternative 6, to supplement the Allentown Final Environmental Impact Statement (FEIS) completed in March 2025. The analysis evaluated the following seven study intersections anticipated to be affected by the proposed access route to the BNSF Railway's South Seattle Intermodal Facility (BNSF facility) under Alternative 6:

- **Intersection 6:** Martin Luther King (MLK) Jr. Way S and S 129th Street
- **Intersection 7:** Tukwila International Boulevard and S 116th Way
- **Intersection 8:** S Boeing Access Road and E Marginal Way
- **Intersection 9:** S Boeing Access Road and MLK Jr. Way S
- **Intersection 10:** MLK Jr. Way S and 68th Avenue S
- **Intersection 11:** SW Sunset Boulevard and Rainier Avenue S
- **Intersection 12:** SW Grady Way and Rainier Avenue S

These intersections are depicted in Figure 1 below.

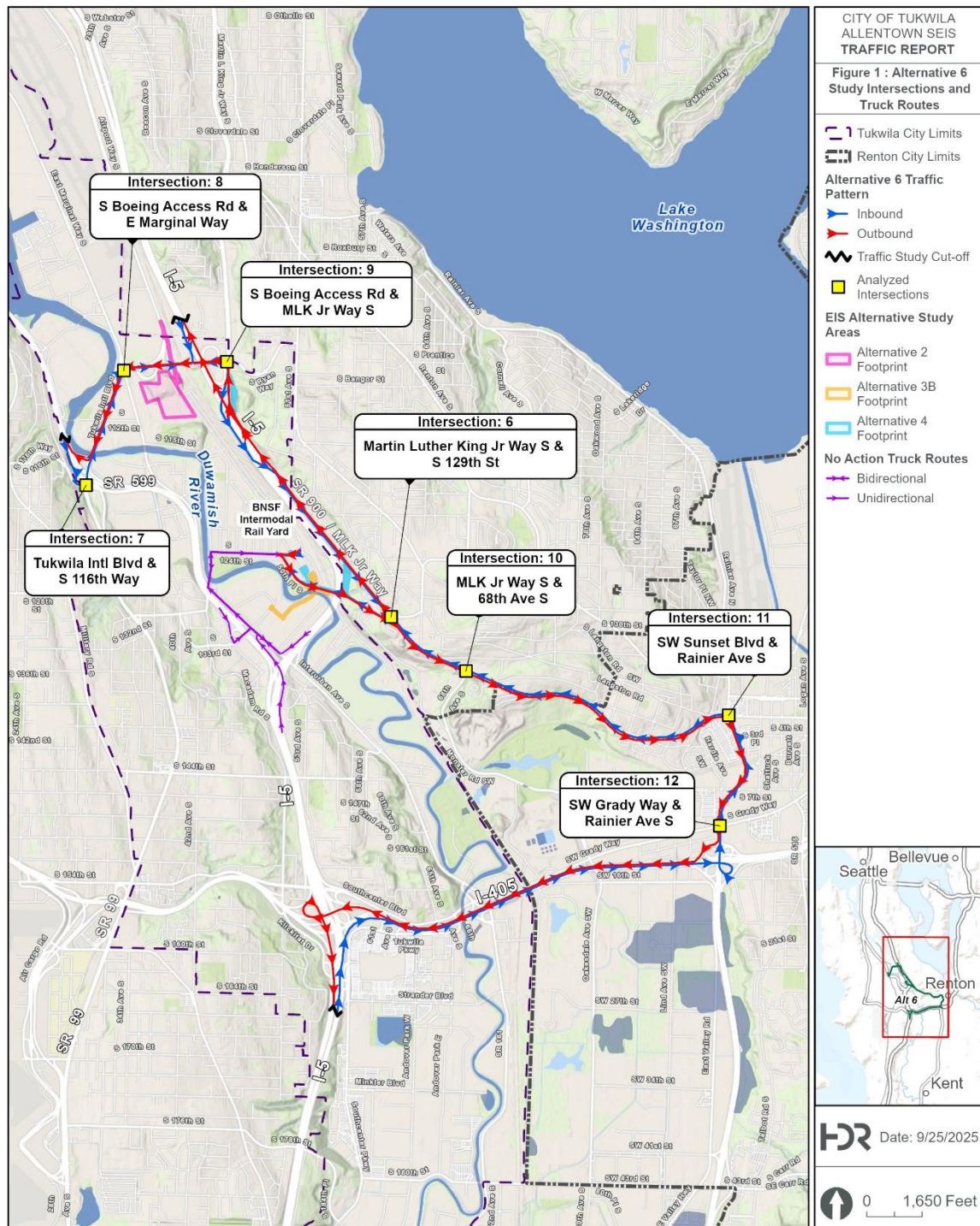


Figure 1. Alternative 6 study intersections and truck routes

Alternative 6

Alternative 6 would maintain the same entrance to the railyard as the existing configuration. Site truck traffic would use S 129th Street to reach MLK Jr. Way S (State Route [SR] 900) and then connect to other highways such as Interstate (I-) 5 and SR 99. Because of topographical constraints in the area, trucks traveling to and from the south are routed via SR 900, Rainier Avenue, and I-405. The study intersections and the inbound and outbound travel routes for this alternative are shown in Figure 1.

Data Collection and Assumptions

This supplemental analysis follows the same methodology used in the FEIS and includes afternoon peak hour intersection analysis with Synchro, truck traffic vehicle miles traveled (VMT) analysis, and crash analysis. Existing, future no-action, and future Alternative 6 scenarios were evaluated.

Recent afternoon peak hour traffic counts were obtained from the City of Tukwila (City) and the City of Renton. Traffic volumes were adjusted to align with the 2024 turning movement volumes analyzed for adjacent intersections in the FEIS. Future traffic conditions in 2045 were projected using an annual growth rate of 1 percent. Annual average daily traffic (AADT) and crash data were sourced from the same Washington State Department of Transportation (WSDOT) databases referenced in the FEIS. The site-generated truck traffic is assumed to be the same as that presented in the FEIS.

Synchro Analysis

This section provides results of the intersection performance analysis conducted by the Synchro models for the study intersections. The traffic volumes analyzed vary across the scenarios because of the differences in analysis years and travel patterns. Level-of-service (LOS) and delay results for each scenario are shown in Table 1 through Table 3. The detailed Synchro results report for each scenario is provided in Appendix A.

Table 1. 2024 existing scenario with bridge closure Synchro results summary

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/87.0	B/13.3	A/9.4	B/10.2	D/51.5
7: Tukwila International Blvd. and S 116th Way	B/16.1	C/28.9	C/31.2	NA	C/21.1
8: S Boeing Access Rd. and E Marginal Way	C/33.9	E/57.0	D/48.9	D/40.1	D/40.2
9: S Boeing Access Rd. and MLK Jr. Way S	D/46.5	D/44.4	D/44.6	E/58.6	D/46.5
10: MLK Jr. Way S and 68th Ave. S	NA	E/70.0	C/21.4	B/15.6	C/27.5
11: SW Sunset Blvd. and Rainier Ave. S	D/38.6	D/49.8	D/49.6	NA	D/44.9
12: SW Grady Way and Rainier Ave. S	E/59.9	F/109.5	F/82.9	E/63.0	F/82.3

Table 2. 2045 no-action scenario Synchro results summary

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/186.0	B/15.5	A/9.4	B/10.2	F/107.2
7: Tukwila International Blvd. and S 116th Way	C/24.5	D/47.8	D/40.5	NA	C/31.4
8: S Boeing Access Rd. and E Marginal Way	D/53.3	E/69.3	E/57.2	D/49.4	D/53.9
9: S Boeing Access Rd. and MLK Jr. Way S	E/56.6	D/46.0	D/51.1	E/77.9	D/54.7
10: MLK Jr. Way S and 68th Ave. S	NA	E/72.5	D/37.1	B/19.7	D/38.7
11: SW Sunset Blvd. and Rainier Ave. S	E/79.9	D/52.0	D/47.3	NA	E/62.9
12: SW Grady Way and Rainier Ave. S	F/112.4	F/191.2	F/82.9	E/64.4	F/126.9

Table 3. 2045 BNSF build Alternative 6 Synchro results summary

Study intersection LOS/delay (s/veh)	Southbound	Northbound	Eastbound	Westbound	Overall
6: MLK Jr. Way S and S 129th St.	F/194.9	B/16.3	A/9.5	B/10.3	F/108.9
7: Tukwila International Blvd. and S 116th Way	C/24.8	D/48.5	D/40.6	NA	C/31.7
8: S Boeing Access Rd. and E Marginal Way	D/53.5	E/69.3	E/57.4	D/49.9	D/54.3
9: S Boeing Access Rd. and MLK Jr. Way S	E/56.8	D/46.1	D/51.3	E/78.1	D/54.9
10: MLK Jr. Way S and 68th Ave. S	NA	E/72.5	D/37.6	B/19.7	D/38.9
11: SW Sunset Blvd. and Rainier Ave. S	F/83.9	D/51.9	D/47.4	NA	E/64.5
12: SW Grady Way and Rainier Ave. S	F/115.2	F/190.9	F/82.9	E/64.4	F/127.7

Truck Traffic Analysis

This section provides analysis of truck percentage changes and truck VMT changes for each travel route alternative to assess the impact of site-generated truck traffic. A truck AADT of 900 vehicles is assumed to be generated by the site. Table 4 provides detailed truck AADT and percentage calculations for segments on the detour routes for Alternative 6.

Table 4. New truck percentage for Alternative 6

Segment difference	Existing AADT	Existing truck percentage	Existing truck AADT	New AADT	New truck AADT	New truck percentage
Tukwila International Blvd. S	21,000	4.0%	840	21,225	1,065	5.02%
Boeing Access Rd.	33,000	4.0%	1,320	33,225	1,545	4.65%
MLK Jr. Way S	26,000	3.5%	910	26,900	1,810	6.73%
Rainier Ave. S	380,00	4.5%	1,710	38,900	2,610	6.71%
I-405	167,000	8.0%	13,360	167,450	13,810	8.25%

The truck VMT is calculated by multiplying site truck AADT, segment length for each alternative, and 365 days in a year. Because Alternative 6 includes a longer truck travel route via I-405, the truck traffic study boundary was extended 1.59 miles south on I-5. To maintain consistency across all alternatives, the truck VMT calculations for all other alternatives previously analyzed in the FEIS have been updated to account for the additional travel distance on I-5. Table 5 shows the

annual truck VMT for each alternative. Alternative 6 results in higher truck VMT than the No-Action Alternative, Alternative 2, and Alternative 3B, but lower compared than Alternative 4.

Table 5. Annual truck VMT for alternatives

Alternative scenario	Length (miles)	Site truck AADT (veh/day)	VMT (annual)	Percent change from No-Action Alternative
Truck VMT for no-action travel route	17.4	900	5,716,000	0%, (no change)
Truck VMT for travel route Alternative 2	17.0	900	5,585,000	2.29% decrease
Truck VMT for travel route Alternative 3B	12.7	900	4,172,000	27% decrease
Truck VMT for travel route Alternative 4	28.0	900	9,198,000	60% increase
Truck VMT for travel route Alternative 6	19.7	900	6,472,000	13% increase

Crash Analysis

Crash data for the study intersections were obtained for a 5-year period, from January 1, 2019, to December 31, 2023, through the WSDOT Public Disclosure Request Center¹. The data show a total of 363 crashes. Among the study intersections, SW Grady Way and Rainier Avenue S (intersection 12) had the highest number of recorded crashes. There was one recorded fatality during the study period at SW Sunset Boulevard and Rainier Avenue S (intersection 11), and 2 out of the 363 crashes involved serious injuries. Additionally, 124 out of 363 crashes (34 percent) resulted in minor or possible injuries. Table 6 summarizes the crash data by year, and Table 7 summarizes the crash data by severity.

Table 6. Crash data summary by year

Intersection	2019	2020	2021	2022	2023	Total
6: MLK Jr. Way S and S 129th St.	13	15	13	12	9	62
7: Tukwila International Blvd. and S 116th Way	4	7	5	3	5	24
8: S Boeing Access Rd. and E Marginal Way	12	5	10	20	13	60
9: S Boeing Access Rd. and MLK Jr. Way S	14	8	13	11	16	62
10: MLK Jr. Way S and 68th Ave. S	9	8	4	2	2	25
11: SW Sunset Blvd. and Rainier Ave. S	13	9	12	7	12	53
12: SW Grady Way and Rainier Ave. S	17	11	14	14	21	77

¹ [https://wsdot.mycusthelp.com/WEBAPP/_rs/\(S\(sps3y5vjac3yrqoja0tnn0hu\)\)/supporthome.aspx](https://wsdot.mycusthelp.com/WEBAPP/_rs/(S(sps3y5vjac3yrqoja0tnn0hu))/supporthome.aspx)

Table 7. Crash data summary by severity

Intersection	Fatal	Serious injury	Minor injury	Possible injury	No injury	Total
6: MLK Jr. Way S and S 129th St.	0	0	7	17	38	62
7: Tukwila International Blvd. and S 116th Way	0	0	3	6	15	24
8: S Boeing Access Rd. and E Marginal Way	0	0	4	5	51	60
9: S Boeing Access Rd. and MLK Jr. Way S	0	0	11	19	32	62
10: MLK Jr. Way S and 68th Ave. S	0	0	0	10	15	25
11: SW Sunset Blvd. and Rainier Ave. S	1	1	5	13	33	53
12: SW Grady Way and Rainier Ave. S	0	1	8	16	52	77

Crash rates are defined as the frequency of crashes reported by law enforcement agencies, specifically through police reports. Reportable crashes must meet criteria of (1) having property damage of at least \$1,000 or injury of an individual, (2) being on a public roadway, (3) involving at least one motorized vehicle, and (4) not involving an intentional act or legal intervention or being medically caused. The overall calculated crash rate for all study intersections ranges between 0.5 and 1.0, which is lower than the Washington State average of 1.0 to 1.5. This indicates that the crash rates for most study intersections range from lower than to equal to Washington State averages.

Findings and Recommendations

Existing traffic conditions are generally acceptable at study intersections, with most intersections operating at LOS D or better. However, intersection 12 at SW Grady Way and Rainier Avenue S, located near the I-405 interchange, experiences significant delays on all approaches and operates at LOS F. Future traffic projections for 2045 indicate that, without improvements, several intersections will experience significant congestion in the no-action scenario.

Intersection 12, at SW Grady Way and Rainier Avenue S, is expected to continue facing substantial delay, resulting in LOS F conditions. Intersection 6, at MLK Jr. Way S and S 129th Street, is expected to operate at LOS F, and intersection 11, at SW Sunset Boulevard and Rainier Avenue S, is expected to operate at LOS E. Because the site truck traffic is minimal during the afternoon peak hour, the traffic performance at study intersections under the Alternative 6 scenario are similar to the no-action scenario, indicating minimal impact caused by the truck route shift. In the long term, signal timing adjustments could be implemented to mitigate the traffic impact at several key intersections to alleviate congestion and improve traffic flow.

The truck traffic analysis shows that Alternative 6 would generate higher truck VMT than the no-action scenario and most of the other alternatives previously evaluated.

The crash analysis indicates that the intersections along the Alternative 6 routes have a higher number of crashes than other alternatives. One fatality crash occurred at SW Sunset Boulevard

and Rainier Avenue S (intersection 11). Improvements, such as added signage, pavement markings, and dedicated turn lanes, could be applied as a countermeasure to reduce crash potential and frequency at intersections that experience crashes and fatalities.

Appendix A: Synchro Model Reports

Appendix A – Synchro Model Reports

HCM 6th Signalized Intersection Summary

6: MLK Jr Way S & S 129th St

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	39	69	138	160	134	103	116	1517	20	92	748	71
Future Volume (veh/h)	39	69	138	160	134	103	116	1517	20	92	748	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	75	150	174	146	112	126	1649	0	100	813	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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	223	445	537	748	634	329	1421		180	1421	
Arrive On Green	0.40	0.40	0.43	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	1121	557	1113	1156	1870	1585	671	3647	0	303	3647	0
Grp Volume(v), veh/h	42	0	225	174	146	112	126	1649	0	100	813	0
Grp Sat Flow(s),veh/h/ln	1121	0	1670	1156	1870	1585	671	1777	0	303	1777	0
Q Serve(g_s), s	1.0	0.0	3.7	4.9	2.0	1.8	7.2	16.0	0.0	0.0	7.1	0.0
Cycle Q Clear(g_c), s	3.0	0.0	3.7	8.6	2.0	1.8	14.3	16.0	0.0	16.0	7.1	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	572	0	668	537	748	634	329	1421		180	1421	
V/C Ratio(X)	0.07	0.00	0.34	0.32	0.20	0.18	0.38	1.16		0.56	0.57	
Avail Cap(c_a), veh/h	572	0	668	537	748	634	329	1421		180	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	8.1	11.3	7.8	7.7	14.9	12.0	0.0	20.0	9.3	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	1.6	0.6	0.6	3.4	80.3	0.0	11.8	1.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	1.2	0.7	0.6	1.2	20.3	0.0	1.4	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.0	0.0	9.4	12.9	8.4	8.4	18.3	92.3	0.0	31.8	11.0	0.0
LnGrp LOS	A		A	B	A	A	B	F		C	B	
Approach Vol, veh/h		267			432			1775			913	
Approach Delay, s/veh		9.4			10.2			87.0			13.3	
Approach LOS		A			B			F			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		5.7		18.0		10.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			51.2									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NWR, SER] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

7: Tukwila Intl Blvd & S 116th Way/SR 599 EB On-Ramp

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	279	104	22	0	0	0	29	334	64	681	765	549
Future Volume (veh/h)	279	104	22	0	0	0	29	334	64	681	765	549
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	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	208	246	24				32	363	0	740	832	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, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	337	354	300				80	729		816	2198	
Arrive On Green	0.19	0.19	0.19				0.04	0.21	0.00	0.46	0.62	0.00
Sat Flow, veh/h	1781	1870	1585				1781	3647	0	1781	3554	1585
Grp Volume(v), veh/h	208	246	24				32	363	0	740	832	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585				1781	1777	0	1781	1777	1585
Q Serve(g_s), s	8.4	9.6	1.0				1.4	7.1	0.0	30.0	9.1	0.0
Cycle Q Clear(g_c), s	8.4	9.6	1.0				1.4	7.1	0.0	30.0	9.1	0.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	337	354	300				80	729		816	2198	
V/C Ratio(X)	0.62	0.69	0.08				0.40	0.50		0.91	0.38	
Avail Cap(c_a), veh/h	788	827	701				240	797		1290	2893	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	29.5	26.0				36.2	27.4	0.0	19.6	7.4	0.0
Incr Delay (d2), s/veh	1.8	2.5	0.1				3.2	0.5	0.0	6.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.5	0.0				0.6	2.8	0.0	12.3	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.9	32.0	26.1				39.4	28.0	0.0	25.8	7.5	0.0
LnGrp LOS	C	C	C				D	C		C	A	
Approach Vol, veh/h	478						395			1572		
Approach Delay, s/veh	31.2						28.9			16.1		
Approach LOS	C						C			B		
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	39.2	20.5		18.3	7.0	52.7						
Change Period (Y+Rc), s	4.5	5.5		4.5	4.5	5.5						
Max Green Setting (Gmax), s	55.5	16.5		33.5	9.5	62.5						
Max Q Clear Time (g_c+I1), s	32.0	9.1		11.6	3.4	11.1						
Green Ext Time (p_c), s	2.7	1.2		2.2	0.0	6.9						

Intersection Summary

HCM 6th Ctrl Delay, s/veh	21.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM Signalized Intersection Capacity Analysis

8: Tukwila Intl Blvd/S Boeing Access Rd & E Marginal Wy S

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	483	16	376	789	180	0	67	264	566	353	769
Future Volume (vph)	121	483	16	376	789	180	0	67	264	566	353	769
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		0.95	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3523		1770	3539	1583		3539	1583	3433	1863	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3523		1770	3539	1583		3539	1583	3433	1863	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	525	17	409	858	196	0	73	287	615	384	836
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	213	0	0	21
Lane Group Flow (vph)	132	540	0	409	858	196	0	73	74	615	384	815
Confl. Peds. (#/hr)				3			2		4	4		2
Confl. Bikes (#/hr)									1			
Turn Type	Split	NA		Split	NA	Free		NA	Prot	Split	NA	custom
Protected Phases	2	2		3	3			1	1	4	4	1 4 2
Permitted Phases		2				Free						
Actuated Green, G (s)	30.0	30.0		41.8	41.8	136.5		14.7	14.7	34.0	34.0	86.7
Effective Green, g (s)	31.0	31.0		42.8	42.8	136.5		15.7	15.7	35.0	35.0	87.7
Actuated g/C Ratio	0.23	0.23		0.31	0.31	1.00		0.12	0.12	0.26	0.26	0.64
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	779	800		554	1109	1583		407	182	880	477	1790
v/s Ratio Prot	0.04	c0.15		0.23	c0.24			0.02	0.05	0.18	c0.21	c0.29
v/s Ratio Perm						0.12						
v/c Ratio	0.17	0.68		0.74	0.77	0.12		0.18	0.41	0.70	0.81	0.46
Uniform Delay, d1	42.4	48.2		41.8	42.5	0.0		54.6	56.1	46.0	47.6	12.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.3		5.1	3.4	0.2		0.2	1.5	2.4	9.6	0.2
Delay (s)	42.5	50.4		47.0	45.9	0.2		54.8	57.5	48.4	57.1	12.5
Level of Service	D	D		D	D	A		D	E	D	E	B
Approach Delay (s/veh)		48.9			40.1			57.0			33.9	
Approach LOS		D			D			E			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			40.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			136.5				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			67.5%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9: S Boeing Access Rd/S Ryan Wy & MLK Jr Way S

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	734	639	222	225	26	123	717	239	76	850	474
Future Volume (vph)	350	734	639	222	225	26	123	717	239	76	850	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		1.00	0.95		1.00	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2748	1770	3485		1770	3392		1770	5085	2708
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2748	1770	3485		1770	3392		1770	5085	2708
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	798	695	241	245	28	134	779	260	83	924	515
RTOR Reduction (vph)	0	0	437	0	6	0	0	22	0	0	0	299
Lane Group Flow (vph)	380	798	258	241	267	0	134	1017	0	83	924	216
Confl. Peds. (#/hr)	2		2				2		2	2		2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	7		8	4		2	6		5	1	
Permitted Phases			7									1
Actuated Green, G (s)	35.1	39.8	39.8	21.9	26.6		19.6	48.7		7.2	36.3	36.3
Effective Green, g (s)	35.1	39.8	39.8	21.9	26.6		19.6	48.7		7.2	36.3	36.3
Actuated g/C Ratio	0.26	0.30	0.30	0.16	0.20		0.15	0.36		0.05	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	465	1054	818	290	693		259	1236		95	1381	735
v/s Ratio Prot	c0.21	c0.23		c0.14	0.08		0.08	c0.30		c0.05	0.18	
v/s Ratio Perm			0.09									0.08
v/c Ratio	0.82	0.76	0.32	0.83	0.38		0.52	0.82		0.87	0.67	0.29
Uniform Delay, d1	46.2	42.5	36.3	54.1	46.4		52.6	38.5		62.7	43.3	38.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.7	3.2	0.2	18.0	0.4		1.7	4.5		53.5	1.2	0.2
Delay (s)	56.9	45.7	36.6	72.0	46.8		54.4	43.1		116.2	44.5	38.7
Level of Service	E	D	D	E	D		D	D		F	D	D
Approach Delay (s/veh)		44.6			58.6			44.4			46.5	
Approach LOS		D			E			D			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			46.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			133.6			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			77.6%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: 68th Ave S & MLK Jr Way S

08/14/2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	
Traffic Volume (veh/h)	1333	472	44	572	339	90
Future Volume (veh/h)	1333	472	44	572	339	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1449	513	48	622	368	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2129	960	73	2358	396	106
Arrive On Green	0.60	0.60	0.04	0.66	0.29	0.29
Sat Flow, veh/h	3647	1585	1781	3647	1368	364
Grp Volume(v), veh/h	1449	513	48	622	467	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1736	0
Q Serve(g_s), s	41.4	28.3	4.0	10.7	39.2	0.0
Cycle Q Clear(g_c), s	41.4	28.3	4.0	10.7	39.2	0.0
Prop In Lane		1.00	1.00		0.79	0.21
Lane Grp Cap(c), veh/h	2129	960	73	2358	503	0
V/C Ratio(X)	0.68	0.53	0.65	0.26	0.93	0.00
Avail Cap(c_a), veh/h	2129	960	101	2358	619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.4	17.2	70.9	10.3	51.8	0.0
Incr Delay (d2), s/veh	1.8	2.1	9.4	0.3	18.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	11.1	2.0	4.3	19.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	22.1	19.4	80.3	10.6	70.0	0.0
LnGrp LOS	C	B	F	B	E	
Approach Vol, veh/h	1962			670	467	
Approach Delay, s/veh	21.4			15.6	70.0	
Approach LOS	C			B	E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.7	93.4			103.0	47.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	7.5	76.5			88.5	52.5
Max Q Clear Time (g_c+l1), s	6.0	43.4			12.7	41.2
Green Ext Time (p_c), s	0.0	18.0			5.0	1.3
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			27.5			
HCM 6th LOS			C			

HCM Signalized Intersection Capacity Analysis

11: Rainier Ave S & SW Sunset Blvd/S 3rd St

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	497	272	0	0	0	264	853	193	171	1195	345
Future Volume (vph)	189	497	272	0	0	0	264	853	193	171	1195	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5				3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.91	0.91	1.00				0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	540	296	0	0	0	287	927	210	186	1299	375
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	148	0	0	111
Lane Group Flow (vph)	184	561	275	0	0	0	287	927	62	186	1299	264
Turn Type	Perm	NA	custom				Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4	3 4 5				3 5	2		1	6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	35.6	35.6	76.8				32.2	46.5	46.5	37.5	74.2	74.2
Effective Green, g (s)	36.6	36.6	77.8				34.2	47.5	47.5	38.5	75.2	75.2
Actuated g/C Ratio	0.23	0.23	0.49				0.21	0.30	0.30	0.24	0.47	0.47
Clearance Time (s)	4.5	4.5						4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	368	774	769				733	1509	469	425	1663	744
v/s Ratio Prot			0.17				c0.08	0.18		c0.11	c0.37	
v/s Ratio Perm	0.11	0.17							0.04			0.17
v/c Ratio	0.50	0.72	0.36				0.39	0.61	0.13	0.44	0.78	0.35
Uniform Delay, d1	53.7	57.0	25.6				54.0	48.4	41.2	51.6	35.5	27.0
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	3.4	0.3				0.3	1.9	0.6	3.3	3.7	1.3
Delay (s)	54.8	60.4	25.8				54.3	50.3	41.8	54.8	39.2	28.3
Level of Service	D	E	C				D	D	D	D	D	C
Approach Delay (s/veh)		49.6			0.0			49.8			38.6	
Approach LOS		D			A			D			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			44.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			14.0		
Intersection Capacity Utilization			64.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

12: Rainier Ave S & SW Grady Wy

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	664	543	503	321	106	196	753	661	170	1103	241
Future Volume (veh/h)	258	664	543	503	321	106	196	753	661	170	1103	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	280	722	0	547	349	0	213	818	718	185	1199	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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	814		625	899		383	1242	554	268	1458	
Arrive On Green	0.16	0.23	0.00	0.18	0.25	0.00	0.21	0.35	0.35	0.15	0.29	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	1781	3554	1585	1781	5106	1585
Grp Volume(v), veh/h	280	722	0	547	349	0	213	818	718	185	1199	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	1777	1585	1781	1702	1585
Q Serve(g_s), s	24.5	30.7	0.0	24.0	12.7	0.0	16.6	30.3	54.5	15.4	34.2	0.0
Cycle Q Clear(g_c), s	24.5	30.7	0.0	24.0	12.7	0.0	16.6	30.3	54.5	15.4	34.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	814		625	899		383	1242	554	268	1458	
V/C Ratio(X)	1.00	0.89		0.87	0.39		0.56	0.66	1.30	0.69	0.82	
Avail Cap(c_a), veh/h	280	877		742	1082		383	1242	554	268	1458	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	58.2	0.0	62.2	48.3	0.0	54.6	42.9	50.7	62.8	52.0	0.0
Incr Delay (d2), s/veh	54.0	10.4	0.0	10.0	0.3	0.0	5.7	2.7	146.0	13.6	5.4	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	15.4	15.0	0.0	11.5	5.7	0.0	8.1	13.9	44.0	8.0	15.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.8	68.6	0.0	72.2	48.5	0.0	60.4	45.6	196.8	76.4	57.4	0.0
LnGrp LOS	F	E		E	D		E	D	F	E	E	
Approach Vol, veh/h	1002			896			1749			1384		
Approach Delay, s/veh	82.9			63.0			109.5			59.9		
Approach LOS	F			E			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	58.0	31.7	39.2	37.0	48.0	28.0	43.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	45.5	32.5	37.5	32.5	35.5	23.5	46.5				
Max Q Clear Time (g_c+I1), s	17.4	56.5	26.0	32.7	18.6	36.2	26.5	14.7				
Green Ext Time (p_c), s	0.2	0.0	1.2	2.1	0.5	0.0	0.0	2.4				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 82.3

HCM 6th LOS F

Notes

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

HCM 6th Signalized Intersection Summary

6: MLK Jr Way S & S 129th St

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	39	69	138	160	134	103	140	1836	24	111	905	86
Future Volume (veh/h)	39	69	138	160	134	103	140	1836	24	111	905	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	75	150	174	146	112	152	1996	0	121	984	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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	223	445	537	748	634	277	1421		180	1421	
Arrive On Green	0.40	0.40	0.43	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	1121	557	1113	1156	1870	1585	572	3647	0	216	3647	0
Grp Volume(v), veh/h	42	0	225	174	146	112	152	1996	0	121	984	0
Grp Sat Flow(s),veh/h/ln	1121	0	1670	1156	1870	1585	572	1777	0	216	1777	0
Q Serve(g_s), s	1.0	0.0	3.7	4.9	2.0	1.8	6.8	16.0	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s	3.0	0.0	3.7	8.6	2.0	1.8	16.0	16.0	0.0	16.0	9.2	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	572	0	668	537	748	634	277	1421		180	1421	
V/C Ratio(X)	0.07	0.00	0.34	0.32	0.20	0.18	0.55	1.40		0.67	0.69	
Avail Cap(c_a), veh/h	572	0	668	537	748	634	277	1421		180	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	8.1	11.3	7.8	7.7	17.8	12.0	0.0	20.0	10.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	1.6	0.6	0.6	7.6	186.2	0.0	18.3	2.8	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	0.2	0.0	1.2	1.2	0.7	0.6	1.8	41.2	0.0	1.9	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.0	0.0	9.4	12.9	8.4	8.4	25.4	198.2	0.0	38.3	12.7	0.0
LnGrp LOS	A		A	B	A	A	C	F		D	B	
Approach Vol, veh/h		267			432			2148			1105	
Approach Delay, s/veh		9.4			10.2			186.0			15.5	
Approach LOS		A			B			F			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		5.7		18.0		10.6				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			107.2									
HCM 6th LOS			F									
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NWR, SER] is excluded from calculations of the approach delay and intersection delay.												

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	337	126	27	0	0	0	35	404	77	823	926	664
Future Volume (veh/h)	337	126	27	0	0	0	35	404	77	823	926	664
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	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	252	297	29				38	439	0	895	1007	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, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	364	382	324				75	559		936	2276	
Arrive On Green	0.20	0.20	0.20				0.04	0.16	0.00	0.53	0.64	0.00
Sat Flow, veh/h	1781	1870	1585				1781	3647	0	1781	3554	1585
Grp Volume(v), veh/h	252	297	29				38	439	0	895	1007	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585				1781	1777	0	1781	1777	1585
Q Serve(g_s), s	13.3	15.3	1.5				2.1	12.1	0.0	48.8	14.5	0.0
Cycle Q Clear(g_c), s	13.3	15.3	1.5				2.1	12.1	0.0	48.8	14.5	0.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	382	324				75	559		936	2276	
V/C Ratio(X)	0.69	0.78	0.09				0.51	0.79		0.96	0.44	
Avail Cap(c_a), veh/h	604	634	537				184	611		989	2276	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.5	38.3	32.8				47.7	41.2	0.0	23.0	9.2	0.0
Incr Delay (d2), s/veh	2.4	3.4	0.1				5.2	6.2	0.0	18.5	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	7.4	0.0				1.0	5.5	0.0	23.3	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.9	41.7	32.9				52.9	47.4	0.0	41.5	9.3	0.0
LnGrp LOS	D	D	C				D	D		D	A	
Approach Vol, veh/h		578						477			1902	
Approach Delay, s/veh		40.5						47.8			24.5	
Approach LOS		D						D			C	
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	57.0	20.5		24.3	7.8	69.7						
Change Period (Y+Rc), s	4.5	5.5		4.5	4.5	5.5						
Max Green Setting (Gmax), s	55.5	16.5		33.5	9.5	62.5						
Max Q Clear Time (g_c+I1), s	50.8	14.1		17.3	4.1	16.5						
Green Ext Time (p_c), s	1.7	0.6		2.5	0.0	8.9						
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			31.4									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

8: Tukwila Intl Blvd/S Boeing Access Rd & E Marginal Wy S

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 		 		 
Traffic Volume (vph)	146	584	19	455	955	218	0	81	319	685	427	930
Future Volume (vph)	146	584	19	455	955	218	0	81	319	685	427	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		0.95	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	635	21	495	1038	237	0	88	347	745	464	1011
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	211	0	0	22
Lane Group Flow (vph)	159	654	0	495	1038	237	0	88	136	745	464	989
Confl. Peds. (#/hr)				3			2		4	4		2
Confl. Bikes (#/hr)									1			
Turn Type	Split	NA		Split	NA	Free		NA	Prot	Split	NA	custom
Protected Phases	2	2		3	3			1	1	4	4	1 4 2
Permitted Phases		2				Free						
Actuated Green, G (s)	32.7	32.7		47.1	47.1	147.1		17.2	17.2	34.1	34.1	92.0
Effective Green, g (s)	33.7	33.7		48.1	48.1	147.1		18.2	18.2	35.1	35.1	93.0
Actuated g/C Ratio	0.23	0.23		0.33	0.33	1.00		0.12	0.12	0.24	0.24	0.63
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	786	806		578	1157	1583		437	195	819	444	1762
v/s Ratio Prot	0.05	c0.19		0.28	c0.29			0.02	c0.09	0.22	c0.25	0.35
v/s Ratio Perm						0.15						
v/c Ratio	0.20	0.81		0.86	0.90	0.15		0.20	0.70	0.91	1.05	0.56
Uniform Delay, d1	45.8	53.7		46.3	47.1	0.0		57.9	61.8	54.5	56.0	15.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.3		11.9	9.3	0.2		0.2	10.3	13.9	55.0	0.4
Delay (s)	46.0	60.0		58.2	56.5	0.2		58.1	72.1	68.3	111.0	15.8
Level of Service	D	E		E	E	A		E	E	E	F	B
Approach Delay (s/veh)		57.2			49.4			69.3			53.3	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			53.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			147.1				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			78.2%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9: S Boeing Access Rd/S Ryan Wy & MLK Jr Way S

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	888	773	269	272	31	149	868	1	92	1029	574
Future Volume (vph)	424	888	773	269	272	31	149	868	1	92	1029	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		1.00	0.95		1.00	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	965	840	292	296	34	162	943	1	100	1118	624
RTOR Reduction (vph)	0	0	428	0	7	0	0	22	0	0	0	295
Lane Group Flow (vph)	461	965	412	292	323	0	162	922	0	100	1118	329
Confl. Peds. (#/hr)	2		2				2		2	2		2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	7		8	4		2	6		5	1	
Permitted Phases			7									1
Actuated Green, G (s)	42.0	44.5	44.5	24.0	26.5		18.2	51.1		7.0	39.9	39.9
Effective Green, g (s)	42.0	44.5	44.5	24.0	26.5		18.2	51.1		7.0	39.9	39.9
Actuated g/C Ratio	0.29	0.31	0.31	0.17	0.19		0.13	0.36		0.05	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	521	1104	857	297	647		225	1268		86	1422	757
v/s Ratio Prot	0.26	c0.27		c0.17	0.09		0.09	c0.26		c0.06	c0.22	
v/s Ratio Perm			0.15									0.12
v/c Ratio	0.88	0.87	0.48	0.98	0.50		0.72	0.73		1.16	0.79	0.43
Uniform Delay, d1	48.0	46.4	39.7	59.1	52.1		59.8	39.7		67.8	47.4	42.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.3	7.9	0.4	47.3	0.6		10.8	2.1		147.5	2.9	0.4
Delay (s)	64.3	54.3	40.1	106.4	52.7		70.5	41.8		215.3	50.4	42.5
Level of Service	E	D	D	F	D		E	D		F	D	D
Approach Delay (s/veh)		51.1			77.9			46.0			56.6	
Approach LOS		D			E			D			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			54.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			142.6				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			81.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: 68th Ave S & MLK Jr Way S

08/14/2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	
Traffic Volume (veh/h)	1613	571	53	692	410	109
Future Volume (veh/h)	1613	571	53	692	410	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1753	621	58	752	446	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1920	867	86	2173	469	124
Arrive On Green	0.54	0.54	0.05	0.61	0.34	0.34
Sat Flow, veh/h	3647	1585	1781	3647	1371	363
Grp Volume(v), veh/h	1753	621	58	752	565	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1737	0
Q Serve(g_s), s	67.1	43.8	4.8	15.6	47.6	0.0
Cycle Q Clear(g_c), s	67.1	43.8	4.8	15.6	47.6	0.0
Prop In Lane		1.00	1.00		0.79	0.21
Lane Grp Cap(c), veh/h	1920	867	86	2173	594	0
V/C Ratio(X)	0.91	0.72	0.68	0.35	0.95	0.00
Avail Cap(c_a), veh/h	1920	867	101	2173	619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	25.3	70.3	14.4	48.2	0.0
Incr Delay (d2), s/veh	8.2	5.0	13.5	0.4	24.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.3	17.8	2.5	6.5	24.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	39.5	30.4	83.8	14.8	72.5	0.0
LnGrp LOS	D	C	F	B	E	
Approach Vol, veh/h	2374			810	565	
Approach Delay, s/veh	37.1			19.7	72.5	
Approach LOS	D			B	E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.7	84.5			95.2	54.8
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	7.5	76.5			88.5	52.5
Max Q Clear Time (g_c+I1), s	6.8	69.1			17.6	49.6
Green Ext Time (p_c), s	0.0	6.5			6.4	0.7
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			38.7			
HCM 6th LOS			D			

HCM Signalized Intersection Capacity Analysis

11: Rainier Ave S & SW Sunset Blvd/S 3rd St

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 					 	  			 	
Traffic Volume (vph)	228	601	330	0	0	0	320	1032	233	207	1446	417
Future Volume (vph)	228	601	330	0	0	0	320	1032	233	207	1446	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5				3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.91	0.91	1.00				0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	653	359	0	0	0	348	1122	253	225	1572	453
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	153	0	0	123
Lane Group Flow (vph)	223	678	340	0	0	0	348	1122	100	225	1572	330
Turn Type	Perm	NA	custom				Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4	3 4 5				3 5	2		1	6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	40.4	40.4	85.9				36.5	46.5	46.5	30.0	65.1	65.1
Effective Green, g (s)	41.4	41.4	86.9				38.5	47.5	47.5	31.0	66.1	66.1
Actuated g/C Ratio	0.26	0.26	0.54				0.24	0.30	0.30	0.19	0.41	0.41
Clearance Time (s)	4.5	4.5						4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	416	875	859				826	1509	469	342	1462	653
v/s Ratio Prot			0.21				c0.10	0.22		c0.13	c0.44	
v/s Ratio Perm	0.14	0.20							0.06			0.21
v/c Ratio	0.54	0.77	0.40				0.42	0.74	0.21	0.66	1.08	0.50
Uniform Delay, d1	51.0	55.0	21.3				51.3	50.8	42.2	59.6	47.0	34.8
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	4.3	0.3				0.3	3.4	1.0	9.5	46.6	2.8
Delay (s)	52.4	59.3	21.6				51.7	54.1	43.3	69.1	93.6	37.6
Level of Service	D	E	C				D	D	D	E	F	D
Approach Delay (s/veh)		47.3			0.0			52.0			79.9	
Approach LOS		D			A			D			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			62.9				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			14.0		
Intersection Capacity Utilization			75.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

12: Rainier Ave S & SW Grady Wy

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	664	543	608	389	128	237	911	800	206	1334	291
Future Volume (veh/h)	258	664	543	608	389	128	237	911	800	206	1334	291
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	280	722	0	661	423	0	258	990	870	224	1450	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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	814		722	998		383	1143	510	268	1315	
Arrive On Green	0.16	0.23	0.00	0.21	0.28	0.00	0.21	0.32	0.32	0.15	0.26	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	1781	3554	1585	1781	5106	1585
Grp Volume(v), veh/h	280	722	0	661	423	0	258	990	870	224	1450	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	1777	1585	1781	1702	1585
Q Serve(g_s), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	40.9	50.2	19.1	40.2	0.0
Cycle Q Clear(g_c), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	40.9	50.2	19.1	40.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	814		722	998		383	1143	510	268	1315	
V/C Ratio(X)	1.00	0.89		0.92	0.42		0.67	0.87	1.71	0.83	1.10	
Avail Cap(c_a), veh/h	280	877		742	1082		383	1143	510	268	1315	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	58.2	0.0	60.4	45.8	0.0	56.2	49.8	52.9	64.4	57.9	0.0
Incr Delay (d2), s/veh	54.0	10.4	0.0	15.8	0.3	0.0	9.2	8.9	326.3	25.3	58.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	15.0	0.0	14.4	6.8	0.0	10.4	19.6	66.1	10.6	24.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.8	68.6	0.0	76.1	46.1	0.0	65.4	58.7	379.3	89.7	115.9	0.0
LnGrp LOS	F	E		E	D		E	E	F	F	F	
Approach Vol, veh/h	1002			1084			2118			1674		
Approach Delay, s/veh	82.9			64.4			191.2			112.4		
Approach LOS	F			E			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	53.7	36.1	39.2	37.0	43.7	28.0	47.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	45.5	32.5	37.5	32.5	35.5	23.5	46.5				
Max Q Clear Time (g_c+I1), s	21.1	52.2	31.2	32.7	22.7	42.2	26.5	17.2				
Green Ext Time (p_c), s	0.1	0.0	0.4	2.1	0.5	0.0	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 126.9

HCM 6th LOS F

Notes

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

HCM 6th Signalized Intersection Summary

6: MLK Jr Way S & S 129th St

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	49	69	148	160	134	103	34	1836	24	121	905	86
Future Volume (veh/h)	49	69	148	160	134	103	34	1836	24	121	905	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	75	161	174	146	112	37	1996	0	132	984	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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	212	455	527	748	634	277	1421		180	1421	
Arrive On Green	0.40	0.40	0.43	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	1121	529	1136	1144	1870	1585	572	3647	0	216	3647	0
Grp Volume(v), veh/h	53	0	236	174	146	112	37	1996	0	132	984	0
Grp Sat Flow(s),veh/h/ln	1121	0	1666	1144	1870	1585	572	1777	0	216	1777	0
Q Serve(g_s), s	1.3	0.0	3.9	5.0	2.0	1.8	2.3	16.0	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s	3.3	0.0	3.9	8.9	2.0	1.8	11.5	16.0	0.0	16.0	9.2	0.0
Prop In Lane	1.00		0.68	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	572	0	666	527	748	634	277	1421		180	1421	
V/C Ratio(X)	0.09	0.00	0.35	0.33	0.20	0.18	0.13	1.40		0.73	0.69	
Avail Cap(c_a), veh/h	572	0	666	527	748	634	277	1421		180	1421	
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(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.1	11.5	7.8	7.7	14.7	12.0	0.0	20.0	10.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.5	1.7	0.6	0.6	1.0	186.2	0.0	23.1	2.8	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	0.3	0.0	1.3	1.2	0.7	0.6	0.3	41.2	0.0	2.2	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	0.0	9.6	13.1	8.4	8.4	15.7	198.2	0.0	43.1	12.7	0.0
LnGrp LOS	A		A	B	A	A	B	F		D	B	
Approach Vol, veh/h		289			432			2033			1116	
Approach Delay, s/veh		9.5			10.3			194.9			16.3	
Approach LOS		A			B			F			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		18.0		5.9		18.0		10.9				
Green Ext Time (p_c), s		0.0		1.1		0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			108.9									
HCM 6th LOS			F									
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NWR, SER] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

7: Tukwila Intl Blvd & S 116th Way/SR 599 EB On-Ramp

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	126	27	0	0	0	35	404	77	823	926	664
Future Volume (veh/h)	342	126	27	0	0	0	35	404	77	823	926	664
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	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	302	29				38	439	0	895	1007	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, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	368	387	328				75	555		935	2271	
Arrive On Green	0.21	0.21	0.21				0.04	0.16	0.00	0.52	0.64	0.00
Sat Flow, veh/h	1781	1870	1585				1781	3647	0	1781	3554	1585
Grp Volume(v), veh/h	255	302	29				38	439	0	895	1007	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585				1781	1777	0	1781	1777	1585
Q Serve(g_s), s	13.6	15.6	1.5				2.1	12.2	0.0	49.1	14.6	0.0
Cycle Q Clear(g_c), s	13.6	15.6	1.5				2.1	12.2	0.0	49.1	14.6	0.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	387	328				75	555		935	2271	
V/C Ratio(X)	0.69	0.78	0.09				0.51	0.79		0.96	0.44	
Avail Cap(c_a), veh/h	600	630	534				183	607		983	2271	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	38.4	32.8				48.0	41.6	0.0	23.2	9.3	0.0
Incr Delay (d2), s/veh	2.3	3.5	0.1				5.2	6.5	0.0	18.8	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	7.5	0.0				1.0	5.6	0.0	23.6	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.9	41.9	32.9				53.2	48.1	0.0	42.0	9.4	0.0
LnGrp LOS	D	D	C				D	D		D	A	
Approach Vol, veh/h	586						477			1902		
Approach Delay, s/veh	40.6						48.5			24.8		
Approach LOS	D						D			C		
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	57.2	20.5		24.7	7.8	69.9						
Change Period (Y+Rc), s	4.5	5.5		4.5	4.5	5.5						
Max Green Setting (Gmax), s	55.5	16.5		33.5	9.5	62.5						
Max Q Clear Time (g_c+I1), s	51.1	14.2		17.6	4.1	16.6						
Green Ext Time (p_c), s	1.6	0.6		2.5	0.0	8.9						
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				31.7								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

8: Tukwila Intl Blvd/S Boeing Access Rd & E Marginal Wy S

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	589	19	455	960	218	0	81	319	685	427	930
Future Volume (vph)	146	589	19	455	960	218	0	81	319	685	427	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		0.95	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3522		1770	3539	1583		3539	1583	3433	1863	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	640	21	495	1043	237	0	88	347	745	464	1011
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	211	0	0	22
Lane Group Flow (vph)	159	659	0	495	1043	237	0	88	136	745	464	989
Confl. Peds. (#/hr)				3			2		4	4		2
Confl. Bikes (#/hr)									1			
Turn Type	Split	NA		Split	NA	Free		NA	Prot	Split	NA	custom
Protected Phases	2	2		3	3			1	1	4	4	1 4 2
Permitted Phases		2				Free						
Actuated Green, G (s)	32.8	32.8		47.1	47.1	147.2		17.2	17.2	34.1	34.1	92.1
Effective Green, g (s)	33.8	33.8		48.1	48.1	147.2		18.2	18.2	35.1	35.1	93.1
Actuated g/C Ratio	0.23	0.23		0.33	0.33	1.00		0.12	0.12	0.24	0.24	0.63
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	788	808		578	1156	1583		437	195	818	444	1762
v/s Ratio Prot	0.05	c0.19		0.28	c0.29			0.02	c0.09	0.22	c0.25	0.35
v/s Ratio Perm						0.15						
v/c Ratio	0.20	0.82		0.86	0.90	0.15		0.20	0.70	0.91	1.05	0.56
Uniform Delay, d1	45.8	53.8		46.3	47.3	0.0		58.0	61.9	54.5	56.0	15.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.4		11.9	9.9	0.2		0.2	10.3	14.2	55.0	0.4
Delay (s)	45.9	60.1		58.2	57.2	0.2		58.2	72.2	68.7	111.0	15.8
Level of Service	D	E		E	E	A		E	E	E	F	B
Approach Delay (s/veh)		57.4			49.9			69.3			53.5	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			54.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			147.2				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			78.3%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9: S Boeing Access Rd/S Ryan Wy & MLK Jr Way S

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	888	783	269	272	31	154	868	1	92	1029	574
Future Volume (vph)	424	888	783	269	272	31	154	868	1	92	1029	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		1.00	0.95		1.00	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	2748	1770	3485		1770	3539		1770	5085	2707
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	965	851	292	296	34	167	943	1	100	1118	624
RTOR Reduction (vph)	0	0	428	0	7	0	0	22	0	0	0	296
Lane Group Flow (vph)	461	965	423	292	323	0	167	922	0	100	1118	328
Confl. Peds. (#/hr)	2		2				2		2	2		2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	7		8	4		2	6		5	1	
Permitted Phases			7									1
Actuated Green, G (s)	42.1	44.5	44.5	24.0	26.4		18.5	51.4		7.0	39.9	39.9
Effective Green, g (s)	42.1	44.5	44.5	24.0	26.4		18.5	51.4		7.0	39.9	39.9
Actuated g/C Ratio	0.29	0.31	0.31	0.17	0.18		0.13	0.36		0.05	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	521	1102	855	297	643		229	1272		86	1419	755
v/s Ratio Prot	0.26	c0.27		c0.17	0.09		0.09	c0.26		c0.06	c0.22	
v/s Ratio Perm			0.15									0.12
v/c Ratio	0.88	0.88	0.49	0.98	0.50		0.73	0.72		1.16	0.79	0.44
Uniform Delay, d1	48.1	46.6	40.0	59.2	52.4		59.8	39.6		68.0	47.6	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.3	8.0	0.5	47.3	0.6		11.0	2.1		147.5	3.0	0.4
Delay (s)	64.4	54.6	40.5	106.5	53.0		70.8	41.7		215.5	50.6	42.7
Level of Service	E	D	D	F	D		E	D		F	D	D
Approach Delay (s/veh)		51.3			78.1			46.1			56.8	
Approach LOS		D			E			D			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			54.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			142.9			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			81.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: 68th Ave S & MLK Jr Way S

08/14/2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	
Traffic Volume (veh/h)	1623	571	53	702	410	109
Future Volume (veh/h)	1623	571	53	702	410	109
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1764	621	58	763	446	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1920	867	86	2173	469	124
Arrive On Green	0.54	0.54	0.05	0.61	0.34	0.34
Sat Flow, veh/h	3647	1585	1781	3647	1371	363
Grp Volume(v), veh/h	1764	621	58	763	565	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1737	0
Q Serve(g_s), s	68.0	43.8	4.8	15.9	47.6	0.0
Cycle Q Clear(g_c), s	68.0	43.8	4.8	15.9	47.6	0.0
Prop In Lane		1.00	1.00		0.79	0.21
Lane Grp Cap(c), veh/h	1920	867	86	2173	594	0
V/C Ratio(X)	0.92	0.72	0.68	0.35	0.95	0.00
Avail Cap(c_a), veh/h	1920	867	101	2173	619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.5	25.3	70.3	14.4	48.2	0.0
Incr Delay (d2), s/veh	8.6	5.0	13.5	0.4	24.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.8	17.8	2.5	6.6	24.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	40.1	30.4	83.8	14.9	72.5	0.0
LnGrp LOS	D	C	F	B	E	
Approach Vol, veh/h	2385			821	565	
Approach Delay, s/veh	37.6			19.7	72.5	
Approach LOS	D			B	E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.7	84.5			95.2	54.8
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	7.5	76.5			88.5	52.5
Max Q Clear Time (g_c+I1), s	6.8	70.0			17.9	49.6
Green Ext Time (p_c), s	0.0	5.8			6.5	0.7
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			38.9			
HCM 6th LOS			D			

HCM Signalized Intersection Capacity Analysis

11: Rainier Ave S & SW Sunset Blvd/S 3rd St

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	601	340	0	0	0	330	1032	233	207	1446	417
Future Volume (vph)	228	601	340	0	0	0	330	1032	233	207	1446	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5				3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.91	0.91	1.00				0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85				1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00				0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3384	1583				3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	653	370	0	0	0	359	1122	253	225	1572	453
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	153	0	0	124
Lane Group Flow (vph)	223	678	351	0	0	0	359	1122	100	225	1572	329
Turn Type	Perm	NA	custom				Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4	3 4 5				3 5	2		1	6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	40.1	40.1	86.7				37.6	46.5	46.5	29.5	64.3	64.3
Effective Green, g (s)	41.1	41.1	87.7				39.6	47.5	47.5	30.5	65.3	65.3
Actuated g/C Ratio	0.26	0.26	0.55				0.25	0.30	0.30	0.19	0.41	0.41
Clearance Time (s)	4.5	4.5						4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	413	869	867				849	1509	469	337	1444	646
v/s Ratio Prot			0.22				c0.10	0.22		c0.13	c0.44	
v/s Ratio Perm	0.14	0.20							0.06			0.21
v/c Ratio	0.54	0.78	0.41				0.42	0.74	0.21	0.67	1.09	0.51
Uniform Delay, d1	51.3	55.3	21.0				50.6	50.8	42.2	60.0	47.4	35.4
Progression Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	4.6	0.3				0.3	3.4	1.0	10.1	51.7	2.8
Delay (s)	52.7	59.8	21.3				50.9	54.1	43.3	70.1	99.1	38.2
Level of Service	D	E	C				D	D	D	E	F	D
Approach Delay (s/veh)		47.4			0.0			51.9			83.9	
Approach LOS		D			A			D			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			64.5				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			14.0		
Intersection Capacity Utilization			76.0%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

12: Rainier Ave S & SW Grady Wy

08/14/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	664	543	608	389	128	237	921	800	206	1344	291
Future Volume (veh/h)	258	664	543	608	389	128	237	921	800	206	1344	291
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	280	722	0	661	423	0	258	1001	870	224	1461	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	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	814		722	998		383	1143	510	268	1315	
Arrive On Green	0.16	0.23	0.00	0.21	0.28	0.00	0.21	0.32	0.32	0.15	0.26	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	1781	3554	1585	1781	5106	1585
Grp Volume(v), veh/h	280	722	0	661	423	0	258	1001	870	224	1461	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	1777	1585	1781	1702	1585
Q Serve(g_s), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	41.5	50.2	19.1	40.2	0.0
Cycle Q Clear(g_c), s	24.5	30.7	0.0	29.2	15.2	0.0	20.7	41.5	50.2	19.1	40.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	814		722	998		383	1143	510	268	1315	
V/C Ratio(X)	1.00	0.89		0.92	0.42		0.67	0.88	1.71	0.83	1.11	
Avail Cap(c_a), veh/h	280	877		742	1082		383	1143	510	268	1315	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	58.2	0.0	60.4	45.8	0.0	56.2	50.0	52.9	64.4	57.9	0.0
Incr Delay (d2), s/veh	54.0	10.4	0.0	15.8	0.3	0.0	9.2	9.5	326.3	25.3	61.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	15.0	0.0	14.4	6.8	0.0	10.4	20.0	66.1	10.6	24.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.8	68.6	0.0	76.1	46.1	0.0	65.4	59.5	379.3	89.7	119.1	0.0
LnGrp LOS	F	E		E	D		E	E	F	F	F	
Approach Vol, veh/h		1002			1084			2129			1685	
Approach Delay, s/veh		82.9			64.4			190.9			115.2	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	53.7	36.1	39.2	37.0	43.7	28.0	47.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	45.5	32.5	37.5	32.5	35.5	23.5	46.5				
Max Q Clear Time (g_c+I1), s	21.1	52.2	31.2	32.7	22.7	42.2	26.5	17.2				
Green Ext Time (p_c), s	0.1	0.0	0.4	2.1	0.5	0.0	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay, s/veh

127.7

HCM 6th LOS

F

Notes

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