TECHNICAL MEMORANDUM *[FINAL]*

Client:	Seattle Department of Transportation
Project:	Rainier Ave S Corridor Improvement Phase 2 Traffic Analysis and Operating Plan
Submit to:	James Le (SDOT)
Cc:	Barbara Van de Fen (MIG|SVR)
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Date:	January 1, 2018

The Rainier Ave S Corridor Improvement Phase 2 project aims to redesign 1.8 miles of Rainier Ave S between S Kenny St and S Henderson St. The redesign of this roadway extends the rechannelization that was implemented in Phase I further south to the Rainier Beach area. In order to support the project's design effort, a multimodal traffic operations analysis was conducted to evaluate the benefits and impacts of a set of corridor improvements proposed to implement the rechannelization including roadway rechannelization, bus stop relocation, implementation of a business access and transit (BAT) lane, addition of protected bike lanes, and signal timing optimization. This memorandum summarizes the traffic analysis results and the proposed operating plans (**Appendix D1** and **Appendix D2**).

1. Study Area

The roadway segment to be redesigned in Phase 2 includes Rainier Ave S from S Kenny St to S Henderson St (**Figure 1**). This segment of Rainier corridor connects Hillman City and the Rainier Beach area with two travel lanes in both directions of travel. In this segment on-street parking is provided between S Kenny St and S Cloverdale St, a center turn lane is provided from S Cloverdale St to S Henderson St, and left turn pockets are provided at major intersections including S Graham St, S Othello St, S Cloverdale St, and S Henderson St. King Country Metro Route 7 serves Rainier Ave S with a headway of approximately 10 minutes during the PM peak period with in-lane stops in the study area.

In order to evaluate the traffic operations of the entire Rainier Ave S corridor, the Phase 2 traffic analysis study area also included all the intersections in the Phase 1 study. **Figure 1** shows the extent of the study area.

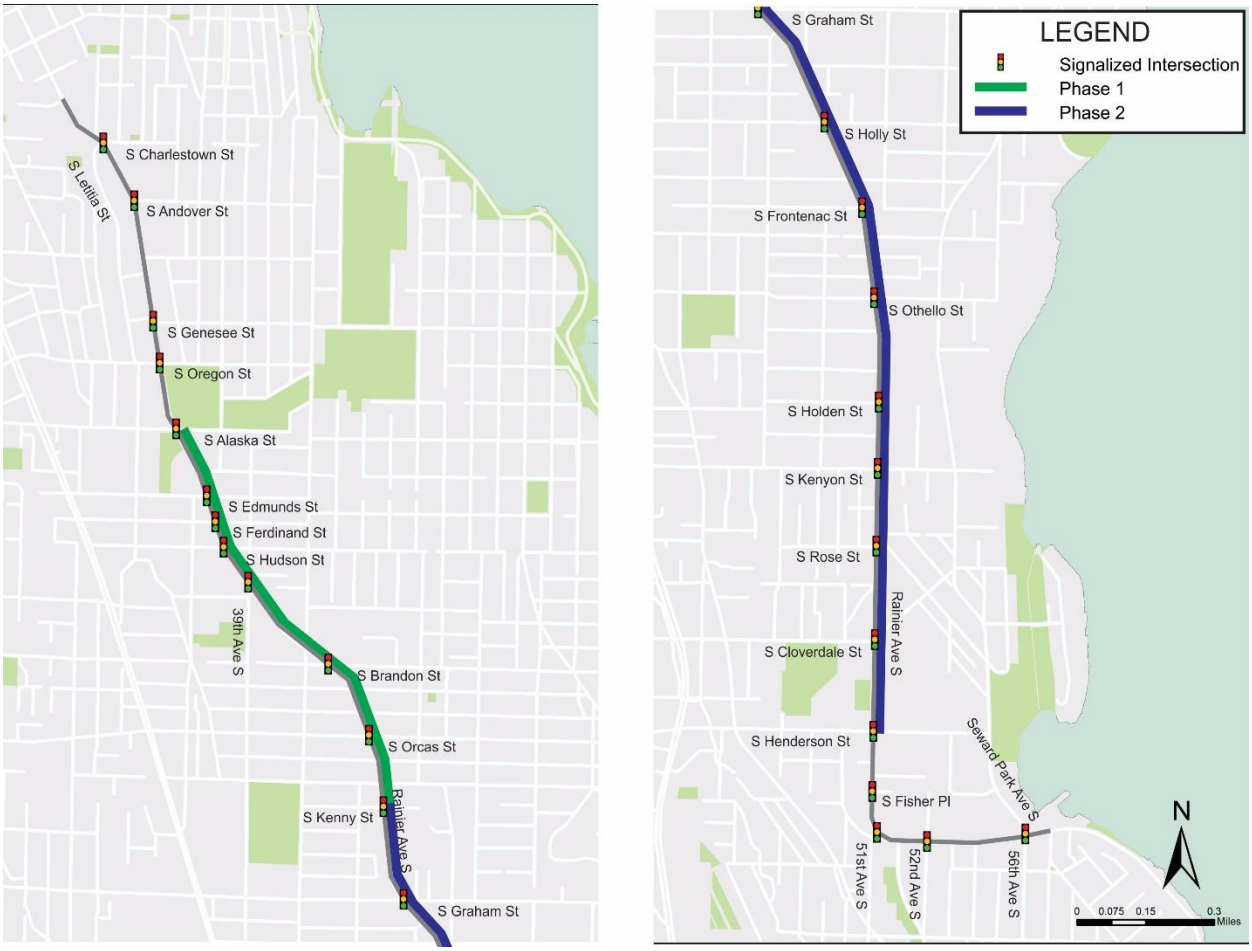


Figure 1: Rainier Ave S Corridor Study Area

2. Method and Assumptions

The analysis was performed with the following assumptions:

2.1 Analysis Period

The analysis year is 2017 and the analysis period is weekday PM peak hour from 4:15 to 5:15pm. The analysis period was determined based on traffic volume data collected by the Seattle Department of Transportation (SDOT) along the study corridor in January 2017.

2.2 Volumes

Weekday PM peak-hour turning movement counts for signalized intersections (**Figure 2**) from January 2017 were used in the traffic analysis for both the existing condition and proposed alternatives.

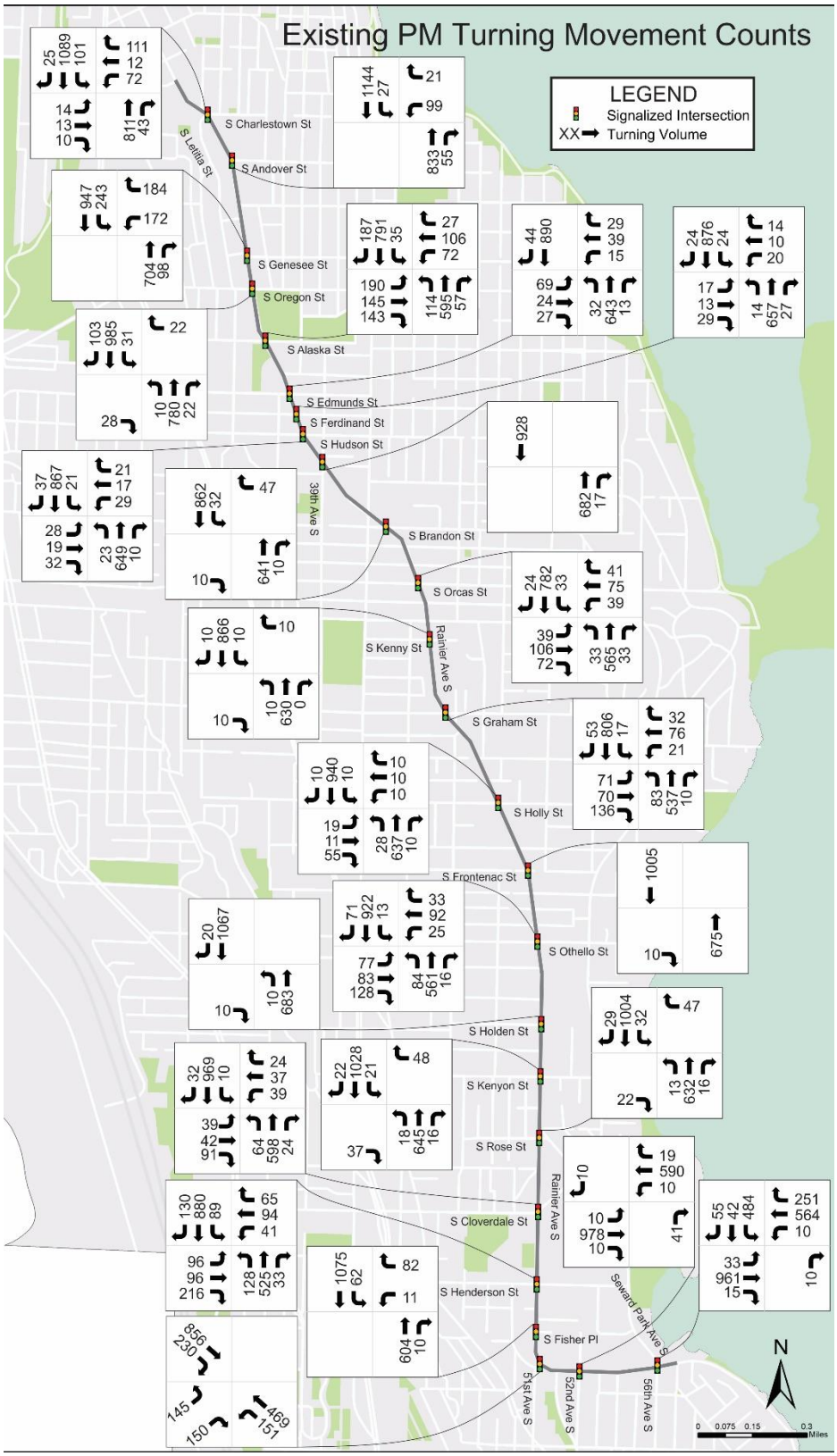


Figure 2: Existing PM Peak Hour Turning Movement Counts for Signalized Intersections

2.3 Speed Limits

Existing speed limits were used for both the existing condition and proposed alternatives traffic analysis. A speed limit map for the study corridor is included in **Figure 3**.

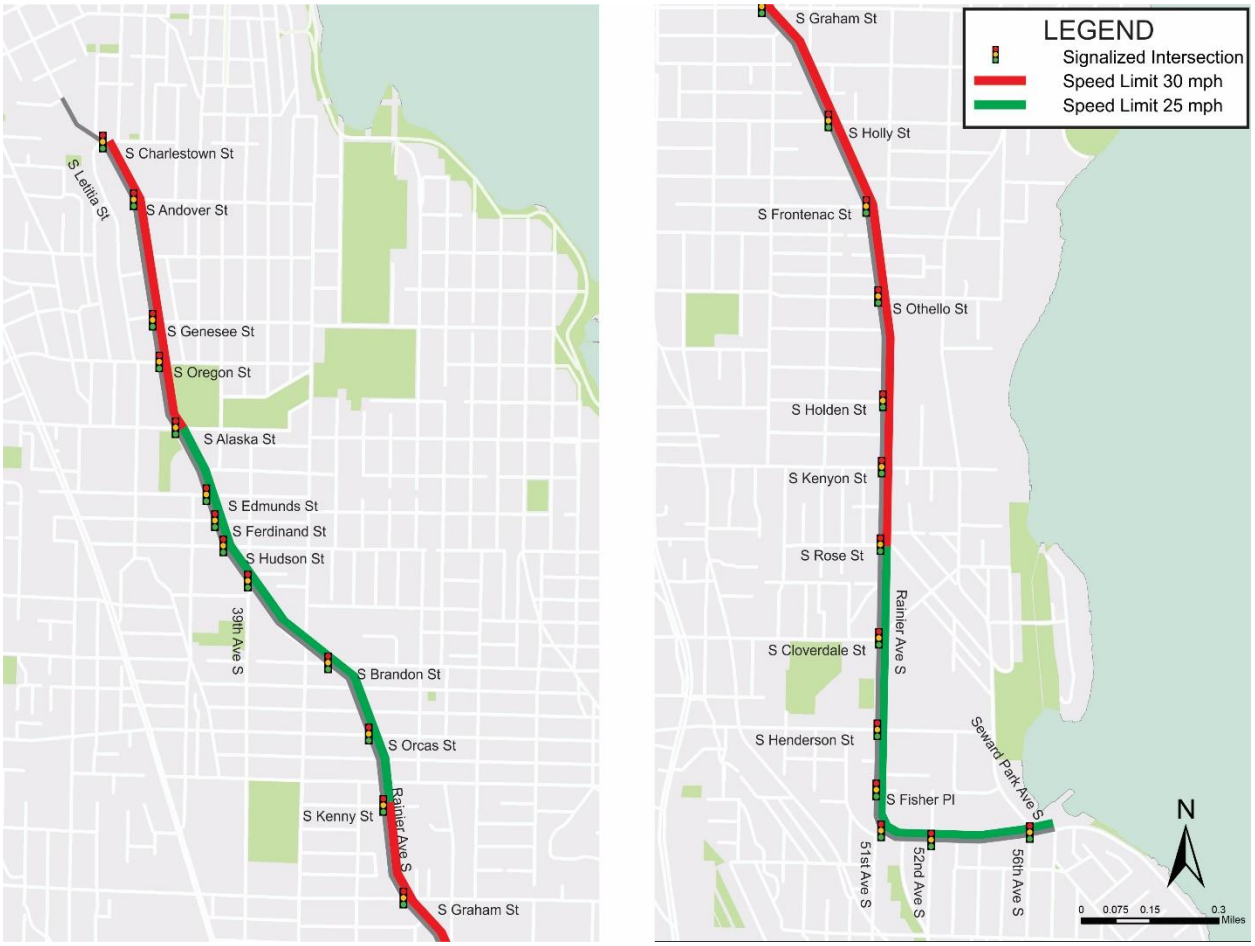


Figure 3: Existing Speed Limits on Rainier Ave S Corridor

2.4 Modeling Tools

Synchro 9 was used to perform signal timing optimization and to evaluate the traffic operations of alternative 1 condition. Vissim 7 was used to model traffic operations of both the existing and alternative 2 conditions.

2.5 Vissim Calibration Parameters

The existing PM peak condition model was developed using Vissim 7.0 and calibrated to the following parameters based on 11 Vissim simulation runs:

- General purpose vehicle travel time (NB and SB, difference within 10%)
- Average transit travel time using KC Metro OBS data (NB and SB, difference within 10%)

- Volume throughput at signalized intersections (GEH[1]value less than 5)

2.6 Measure of Effectiveness (MOE)

The following MOEs were compared between the existing condition and alternative models to evaluate the benefits and impacts of the alternatives:

- General purpose (GP) corridor travel time between the existing condition and alternative 2 using Vissim outputs
- Transit corridor travel time between the existing condition and alternative 2 using Vissim outputs
- Signalized intersection delay and Level of Service (LOS) between the existing condition, alternative 1, and alternative 2 using a combination of Synchro and Vissim outputs

3. Existing Condition Analysis

The existing PM peak-hour condition was modeled using both Synchro 9 and Vissim 7. The existing condition Vissim model was calibrated to less than a 10% difference from field collected GP traffic travel times and OBS transit travel times for both directions of travel. The throughput volumes were calibrated to a GEH value of less than 5 at each signalized intersection. Detailed calibration results are presented in **Appendix A**.

The PM peak hour travel time and intersection LOS results, calculated using Vissim outputs, are included in **Table 1 and Table 2**, respectively. During the PM peak hour period, the average GP traffic travel time is 15.6 minutes for the southbound approach and 12.5 minutes for the northbound approach to traverse the corridor. The average transit travel time is 17.7 minutes for southbound and 19.3 minutes for northbound. Signalized intersections operate at LOS C or better except for the S Alaska St intersection which operates at LOS E.

During the PM peak hour period, at the north end of the study area, the transition of the southbound roadway cross section from 4-lanes to 3-lanes between S Edmunds St and S Alaska St channelizes the traffic into one lane resulting in a traffic "metering" effect on southbound traffic.

Table 1: Existing PM Peak Condition Travel Time Results for GP and Transit

Scenario	Auto SB	Auto NB	Transit SB	Transit NB
Existing Condition	15.6 mins	12.5 mins	17.7 mins	19.3 mins

[1] GEH statistic is a formula used in traffic engineering and traffic modeling to compare two sets of traffic volumes. For traffic modeling work in the "baseline" scenario, a GEH of less than 5.0 is considered a good match between the modelled and observed hourly volumes. See WSDOT Vissim Protocol 6.2.4.1 Throughput Volumes for detail.

Table 2: Existing PM Peak Condition Intersection Delay and Level of Service (LOS)

Intersection	Existing Condition	
	Delay (s/veh)	LOS
S Charlestown St	11	B
S Andover St	10	A
S Genesee St	24	C
S Oregon St	10	B
S Alaska St	67	E
S Edmunds St	30	C
S Ferdinand St	8	A
S Hudson St	9	A
39th Ave S	7	A
S Brandon St	22	C
S Orcas St	32	C
S Kenny St	4	A
S Graham St	17	B
S Holly St	8	A
S Frontenac St	1	A
S Othello St	22	C
S Holden St	5	A
S Kenyon St	3	A
S Rose St	1	A
S Cloverdale St	10	A
S Henderson St	31	C
S Fisher St	5	A
51st Ave S	12	B
52nd Ave S	2	A
Seaward Park Ave S	32	C

4. Proposed Alternatives

Two alternatives were evaluated for the Rainier Ave S Phase 2 segment located between S Kenny St and S Henderson St. The typical cross sections for each alternative are presented in **Figure 5.**

Alternative 1 (Northbound Business Access and Transit Lane) would remove one existing travel lane for each direction and provide a northbound business access and transit (BAT) lane and a center turn lane. The existing east curbside on-street parking would be eliminated and consolidated to the west curbside on-street parking. In-lane bus stops are proposed within the Phase 2 segment.

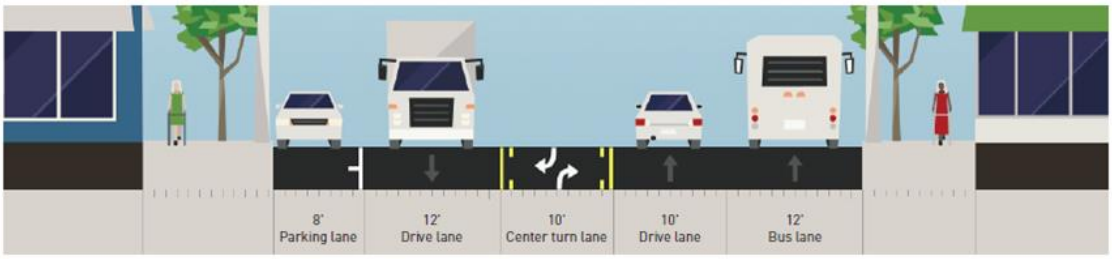
Alternative 2 (Protected Bike Lane) would re-channelize the phase 2 segment to provide one general purpose lane, one street parallel parking lane, and one protected bike lane for both directions. A left turn pocket is provided for both northbound and southbound left turn movements at the intersections of S Graham St, S Holly St, S Othello St, S Rose St, S Cloverdale St, and S Henderson St. No northbound or

southbound left turn pocket is provided for other intersections within the Phase 2 study area. A transit island would be installed for in-lane bus stops to provide a waiting area for transit riders. Two existing near side northbound bus stops at the S Graham St intersection and the S Cloverdale St intersection would be relocated to the far side of the intersection to accommodate the new channelization within the current right of way.

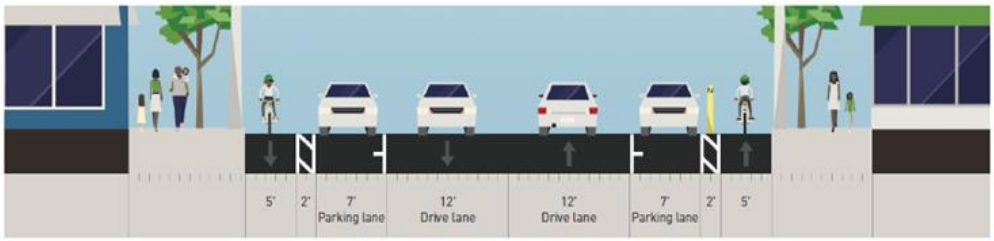
The signal timing and phasing were optimized for each alternative to improve corridor and intersection operations and safety. For both alternatives, signal timings were only adjusted for the signalized intersections south of and including S Kenny St. Signalized intersections north of S Kenny St would maintain the existing condition's signal timings.

Source: Seattle Department of Transportation (SDOT), August 2017

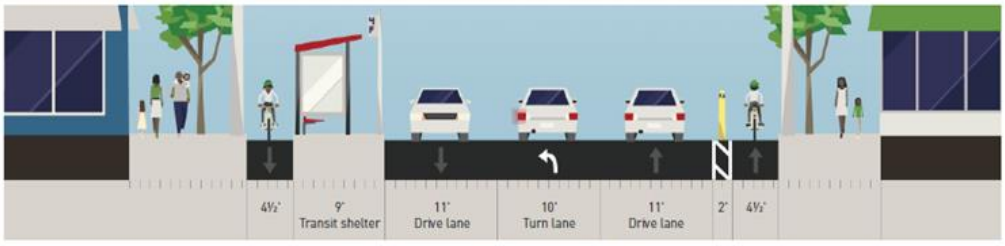
Alternative 1:



Alternative 2:



Cross section between intersections



Cross section at intersections

Figure 5: Typical Cross Section for Alternatives in Phase 2 Study Area

5. Alternative Analysis

5.1 Alternative 1: Northbound BAT Lane

The signal timing optimization treatments for the alternative 1 PM peak hour model include the following:

- Optimizing offsets and splits
- Converting half cycle (65s) to full cycle (130s) for two intersections: S Graham St and S Othello St
- Changing to protected-permissive (Flashing Yellow Arrow) leading left turn phasing for northbound left turn and southbound left turn for three intersections: S Graham St, S Othello St, and S Henderson St

A summary of the MOE comparison between the Alternative 1 model and the existing condition model is included in **Table 3**. The detailed delay and LOS results are included in **Appendix B**.

The results show that during the PM peak hour, Alternative 1 configuration would result in a slight increase in intersection delay for half-signal intersections and a longer increase for full-signal intersections. Under Alternative 1, all the half signals would operate at LOS B or better and all the full signals would operate at LOS C or better. The intersection that would experience the highest increase in delay is S Othello St where the delay would increase by 34 seconds per vehicle resulting in a degradation of LOS from B to D.

Table 3: Alternative 1 Synchro PM Peak Conditions Intersection Delay and Level of Service (LOS)

Type	Intersection	Existing Condition		Alternative 1	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
Half-Signal	S Kenny St	2	A	3	A
Full-Signal	S Graham St	15	B	30	C
Full-Signal	S Holly St	5	A	11	B
Half-Signal	S Frontenac St	0	A	2	A
Full-Signal	S Othello St	19	B	53	D
Half-Signal	S Holden St	4	A	12	B
Half-Signal	S Kenyon St	3	A	8	A
Half-Signal	S Rose St	2	A	8	A
Full-Signal	S Cloverdale St	7	A	15	B
Full-Signal	S Henderson St	28	C	28	C

5.2 Alternative 2: Protected Bike Lane

The signal timing optimization treatments for Alternative 2 PM peak hour include the following:

- Optimizing offsets and splits
- Converting half cycle (65s) to full cycle (130s) for all signalized intersections except for S Kenny St
- Changing to protected-permissive (Flashing Yellow Arrow) leading left turn phasings for northbound left turn and southbound left turn for three intersections: S Graham St, S Othello St, and S Henderson St
- Adding a northbound bus queue jump phase for the S Henderson St intersection

5.2.1 GP Travel Time

A summary of the GP travel time comparison between the Alternative 2 model and the existing condition model is included in **Figure 6** and **Figure 7** for southbound and northbound direction of travels, respectively.

The results demonstrate that during the PM peak hour, while the Alternative 2 configuration would have a slight impact on northbound GP traffic operations, its impact on the southbound general purpose traffic operations would be substantial. This substantial increase in corridor travel time is largely attributed to a combination of factors such as roadway capacity reduction from the rechannelization configuration and bus blockages introduced by in-lane bus operations.

5.2.2 Transit Travel Time

A summary of the transit travel time comparison between the Alternative 2 model and the existing condition model is included in **Figure 8** and **Figure 9** for southbound and northbound direction of travels, respectively.

The results demonstrate that during PM peak hour, while buses traveling northbound on Rainier Ave S would not experience an increase in travel time, buses traveling southbound would experience a substantial increase in travel time. Although this is consistent with what the GP traffic would experience under the Alternative 2 configuration, the increase in travel time is lower than that of the GP traffic due to in-lane bus stop operations in the Phase 2 segment.

5.2.3 Signalized Intersection LOS

A summary comparing intersection LOS and delay between the Alternative 2 model and the existing condition model is included in **Table 4**. Detailed intersection delay and LOS by movement are summarized in **Appendix C**.

The results show that under Alternative 2 configuration, the LOS of the following intersections would degrade to LOS E or worse:

- S Genesee St
- S Alaska St
- S Graham St
- S Holly St
- S Frontenac St

- S Othello St

Table 4: Alternative 2 Vissim PM Peak Conditions Intersection Delay and Level of Service (LOS)

Intersection	Existing Condition		Alternative 2	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS
S Charlestown St	11	B	21	C
S Andover St	10	A	25	C
S Genesee St	24	C	57	E
S Oregon St	10	B	34	C
S Alaska St	67	E	93	F
S Edmunds St	30	C	50	D
S Ferdinand St	8	A	15	B
S Hudson St	9	A	16	B
39th Ave S	7	A	17	B
S Brandon St	22	C	41	D
S Orcas St	32	C	49	D
S Kenny St	4	A	22	C
S Graham St	17	B	81	F
S Holly St	8	A	57	E
S Frontenac St	1	A	60	E
S Othello St	22	C	99	F
S Holden St	5	A	52	D
S Kenyon St	3	A	45	D
S Rose St	1	A	54	D
S Cloverdale St	10	A	48	D
S Henderson St	31	C	46	D
S Fisher St	5	A	6	A
51st Ave S	12	B	11	B
52nd Ave S	2	A	2	A
Seaward Park Ave S	32	C	30	C

6. Summary of Findings

In this Rainier Ave S Phase 2 traffic analysis, two alternatives were analyzed to evaluate the benefits and impacts of extending the rechannelization roadway configuration from S Kenny St to S Henderson St.

Alternative 1 (Northbound Business Access and Transit Lane) configuration would result in a slight increase in intersection delay for half-signal intersections and a larger increase in delay for full-signal intersections. Under Alternative 1, all half signals would operate at LOS B or better and all full signals would operate at LOS C or better. The intersection that would experience the highest increase in delay is S Othello St where the delay would increase by 34 seconds per vehicle and result in a degradation of LOS from B to D. This increase in travel time and delay is attributable to the demand entering Rainier Ave S from side streets exceeding the roadway capacity under the rechannelization configuration.

Alternative 2 (Protected Bike Lane) configuration would have a slight impact on northbound GP traffic operations, while its impact on southbound GP traffic operations would be substantial. This substantial increase in corridor travel time is largely attributed to a combination of factors including roadway capacity reduction from the rechannelization configuration and bus blockages introduced by in-lane bus operations. For transit operations, buses traveling southbound would experience a substantial increase in travel time. Although this is consistent with what the GP traffic would experience, the increase in travel time is lower than that of the GP traffic due to in-lane bus stop operations in the Phase 2 segment. The intersection LOS would degrade to LOS E or worse at six signalized intersections. Compared to the Alternative 1 rechannelization configuration, Alternative 2 would further reduce roadway capacity by adding PBL and result in a significant increase in travel time and delay.

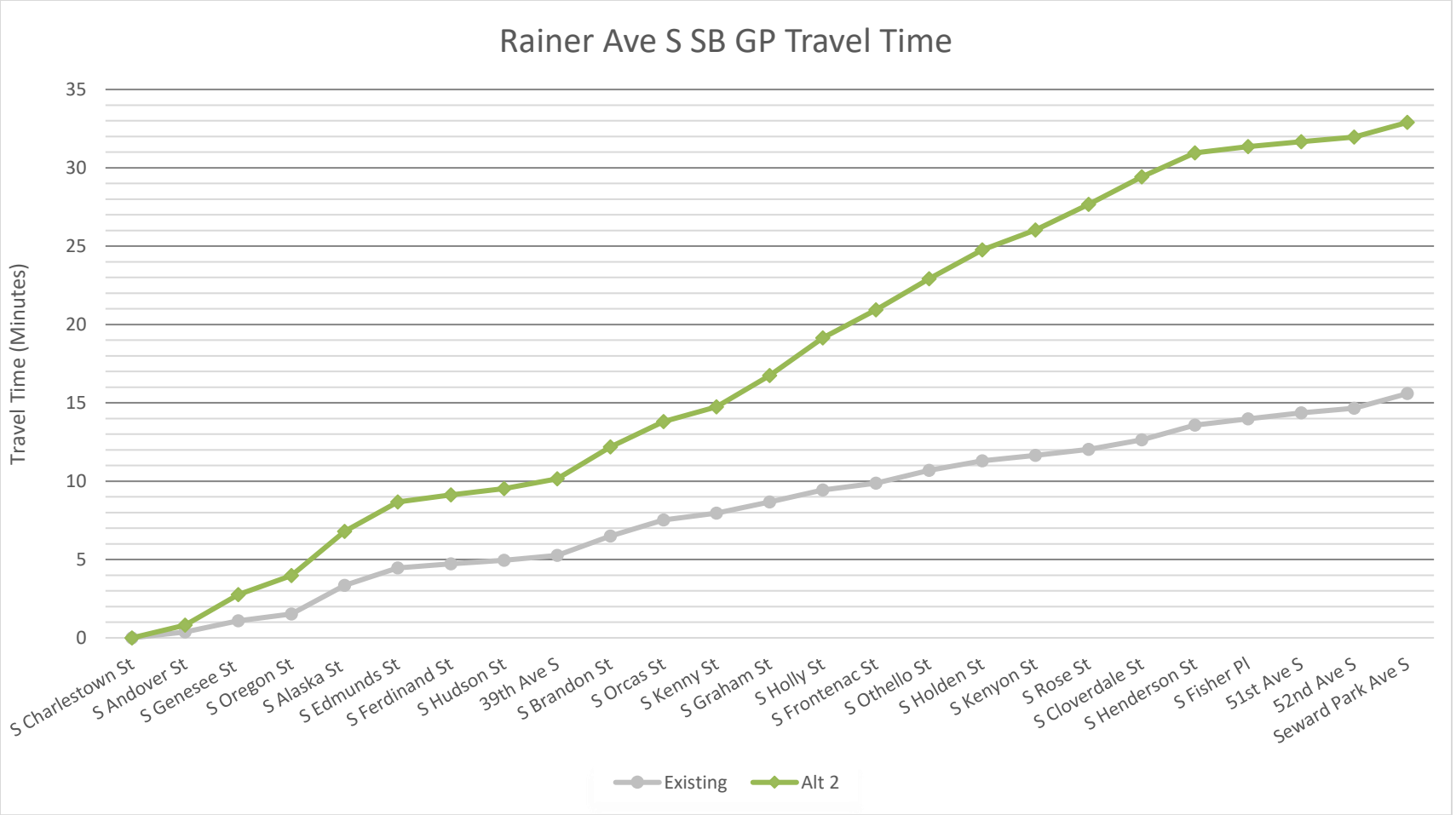


Figure 6: Rainier Ave S Southbound Auto Travel Time Comparison (PM Peak Hour)

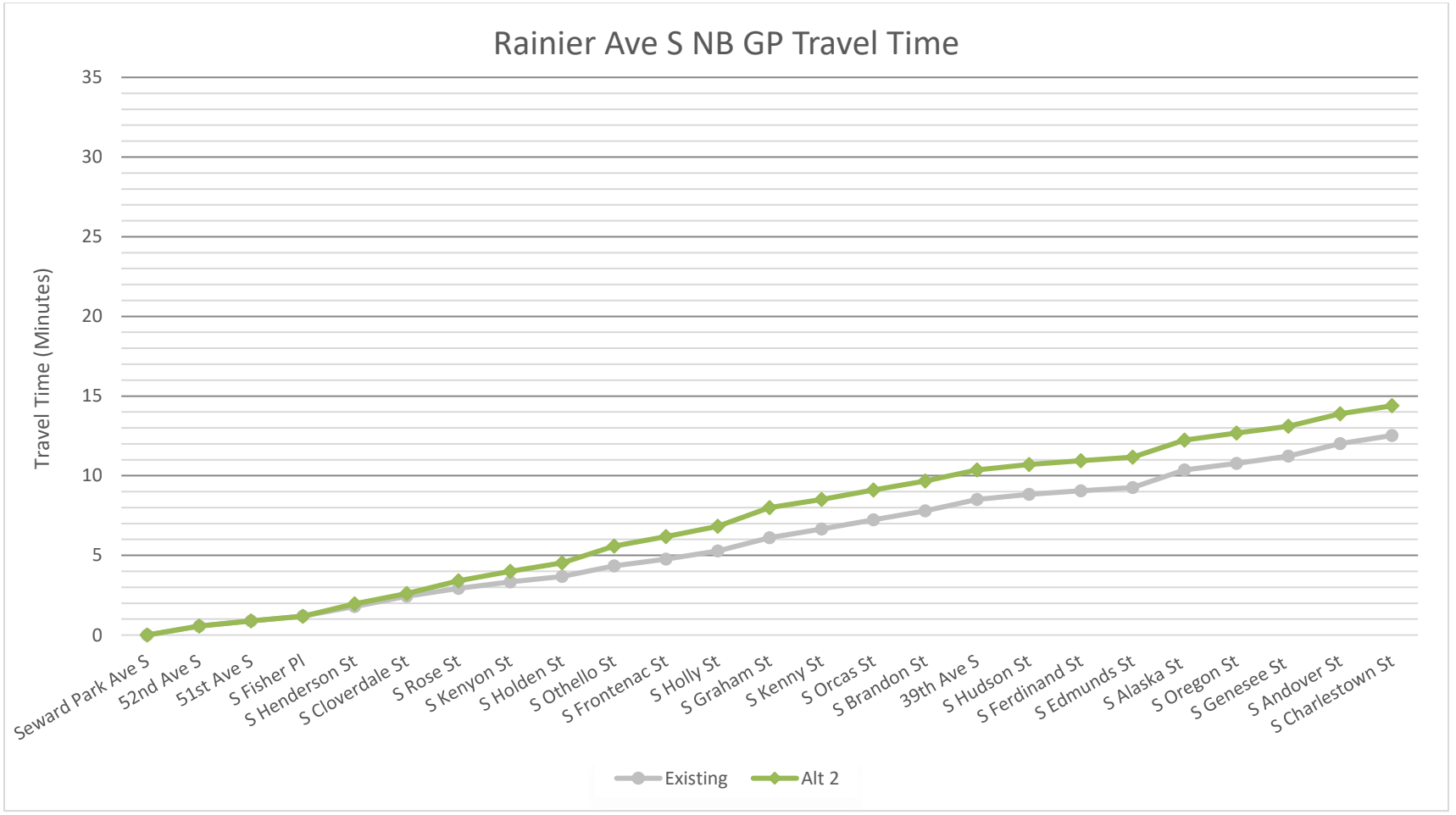


Figure 7: Rainier Ave S Northbound Auto Travel Time Comparison (PM Peak Hour)

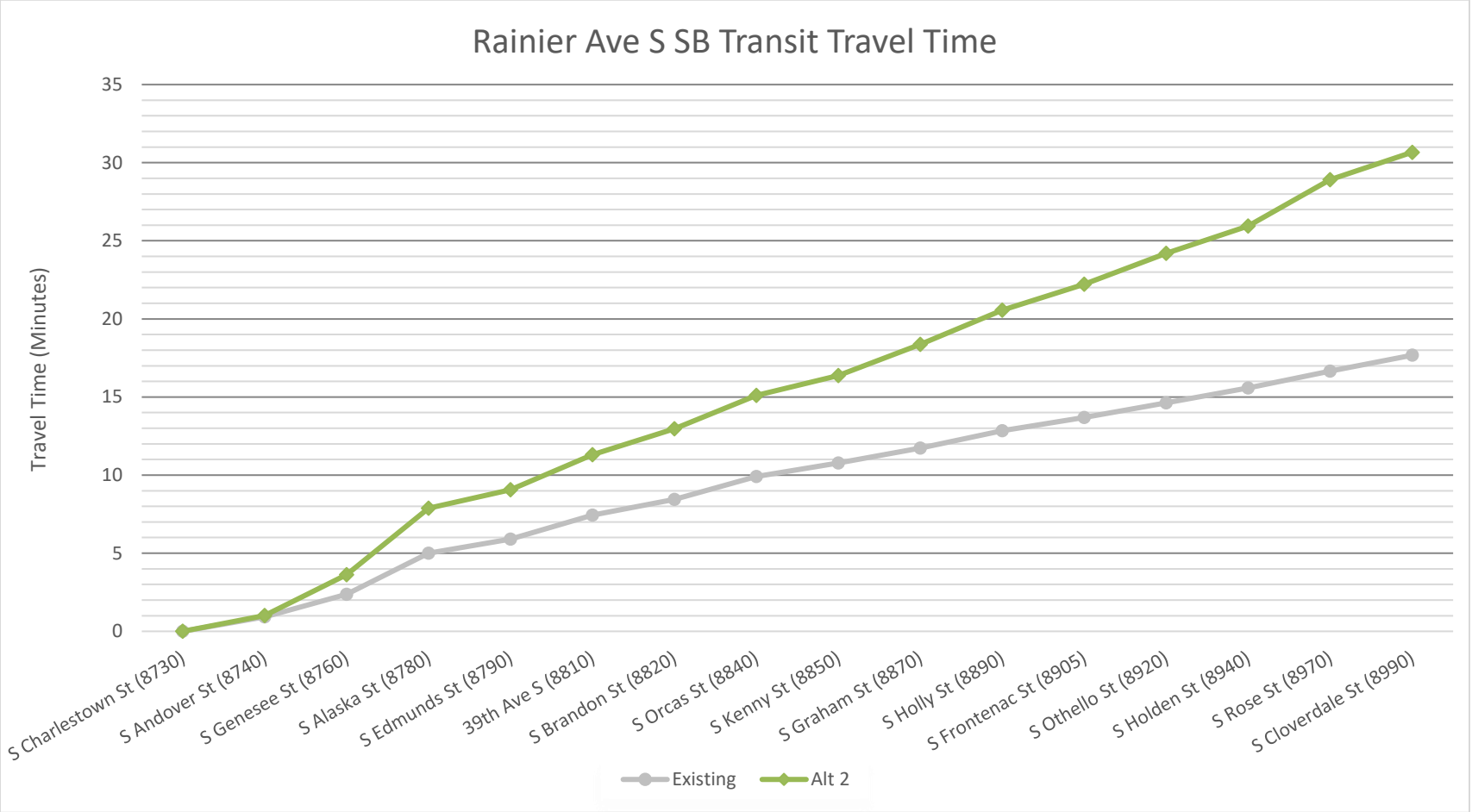


Figure 8: Rainier Ave S Southbound Transit Travel Time Comparison (PM Peak Hour)

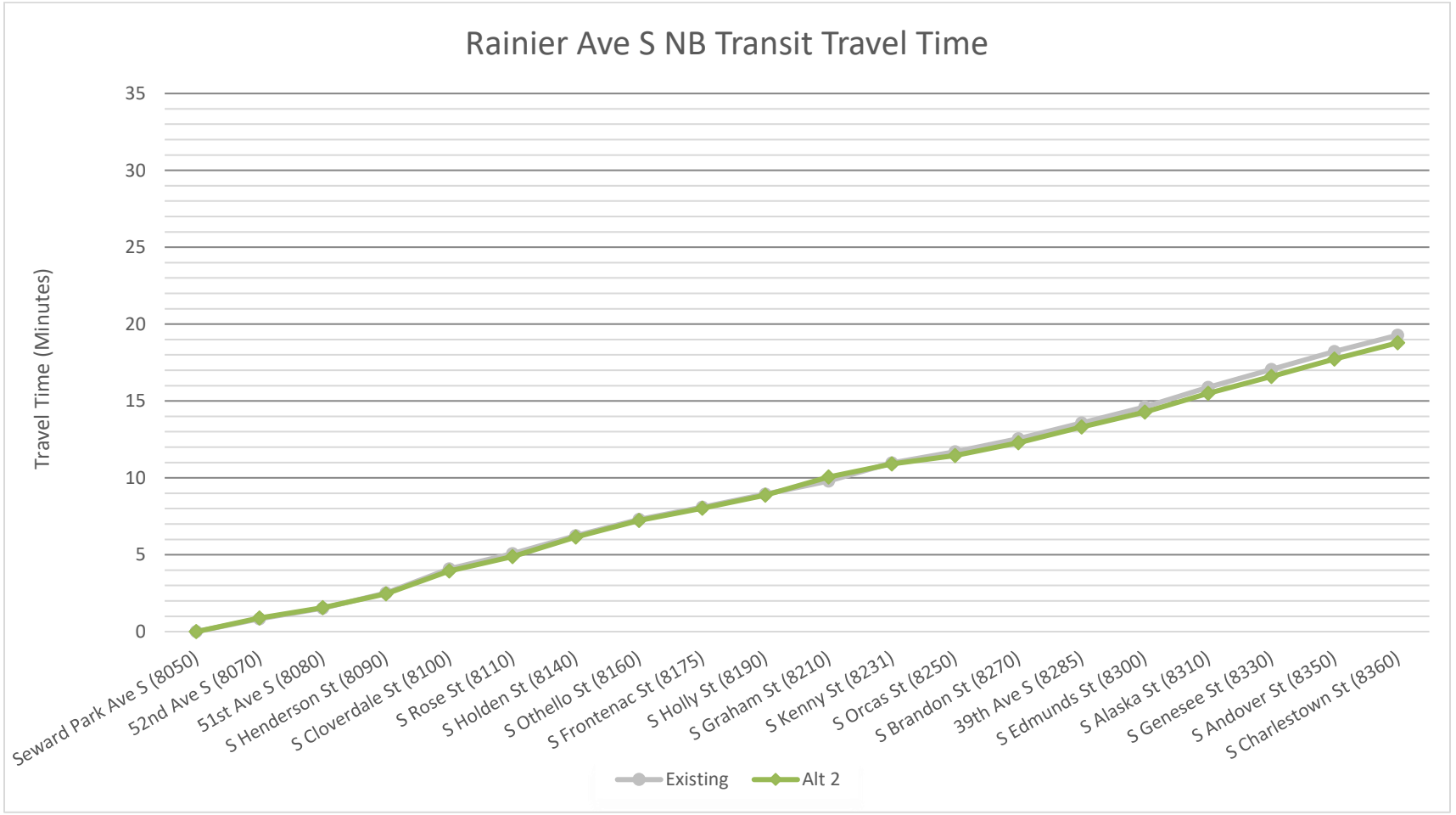
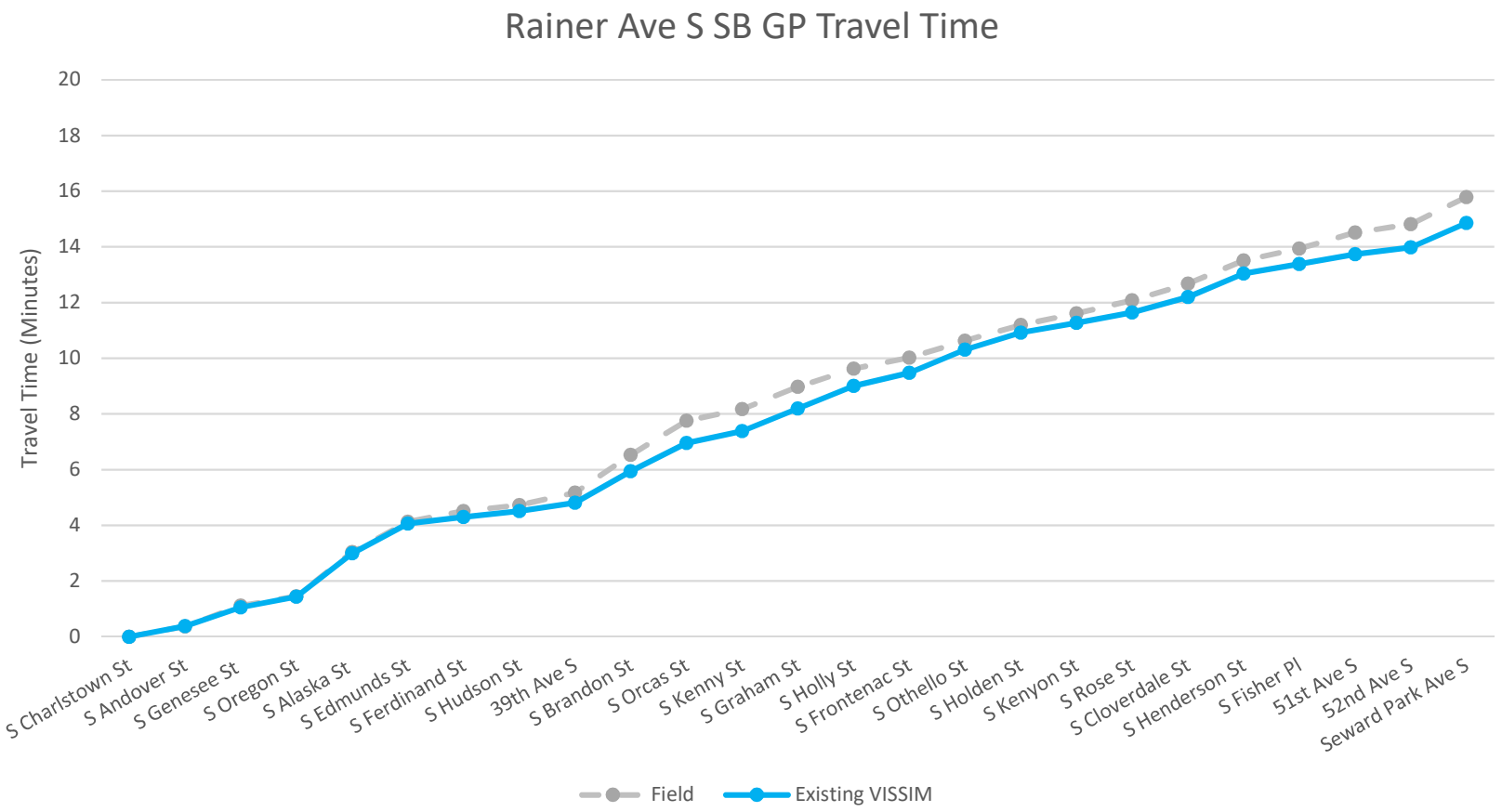


Figure 9: Rainier Ave S Northbound Transit Travel Time Comparison (PM Peak Hour)

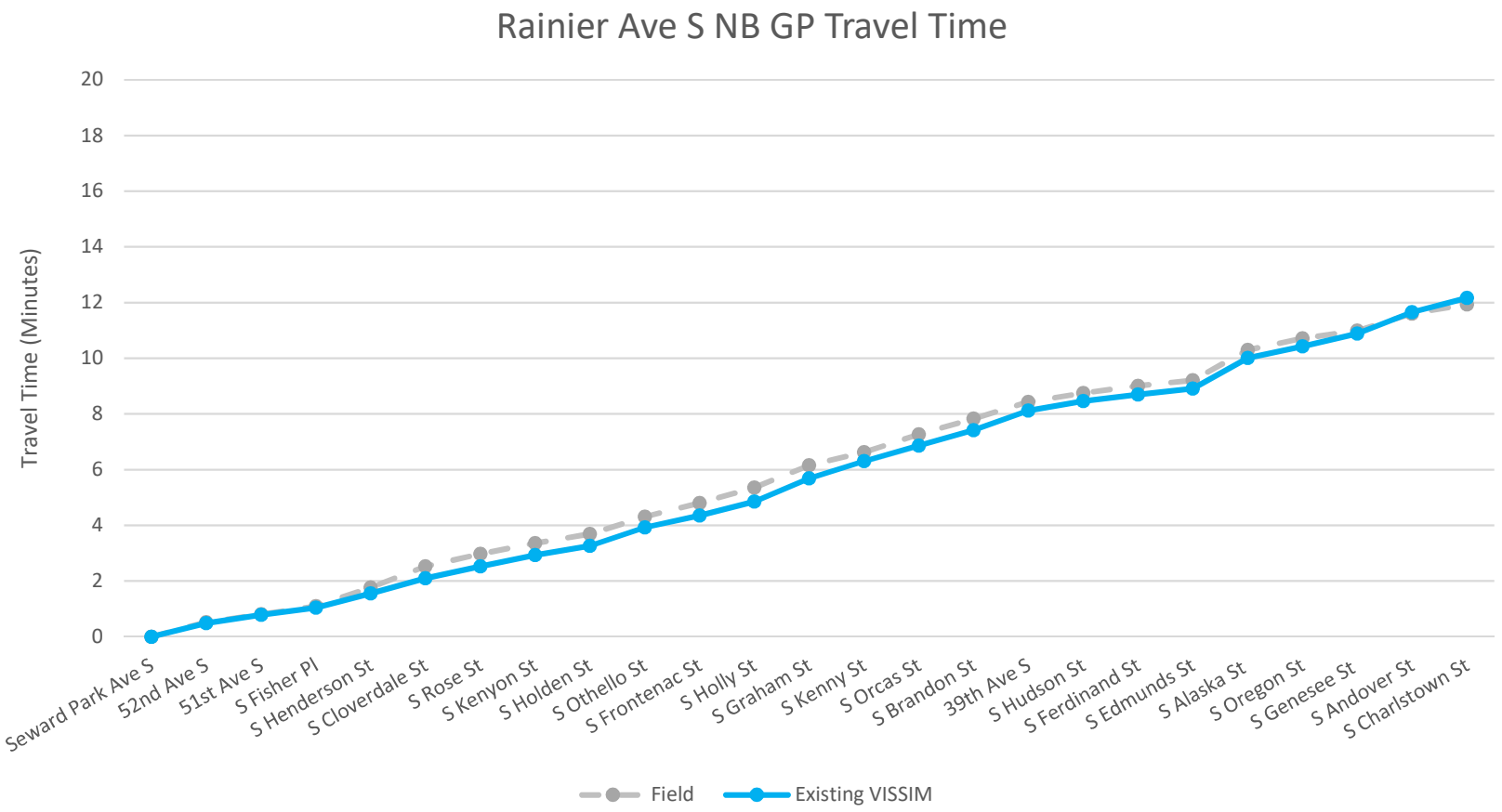
Appendix A

Rainier Ave S Phase 2 Vissim Existing Condition Model Calibration Results

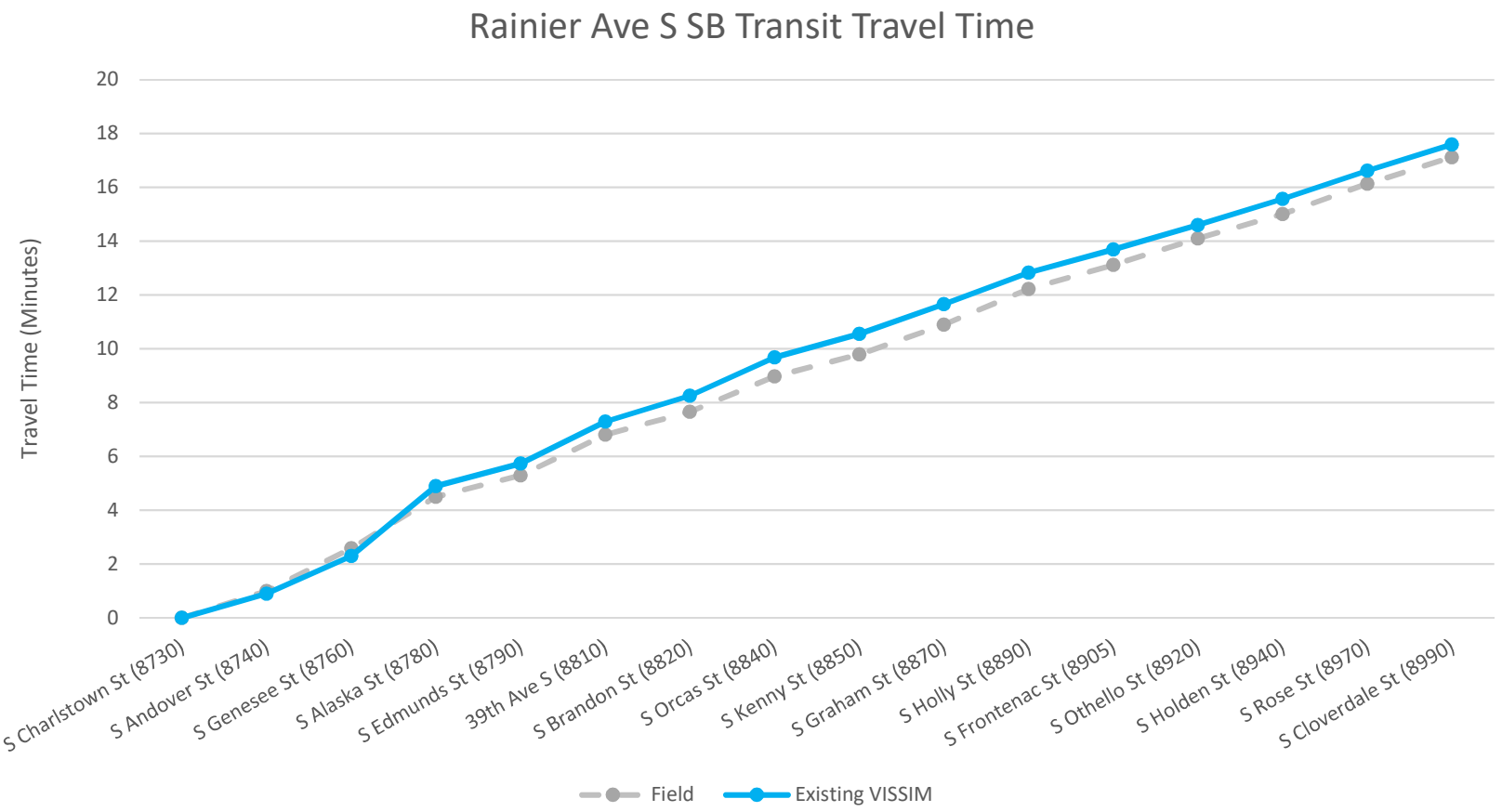
Auto Travel Time – Rainier Ave S SB



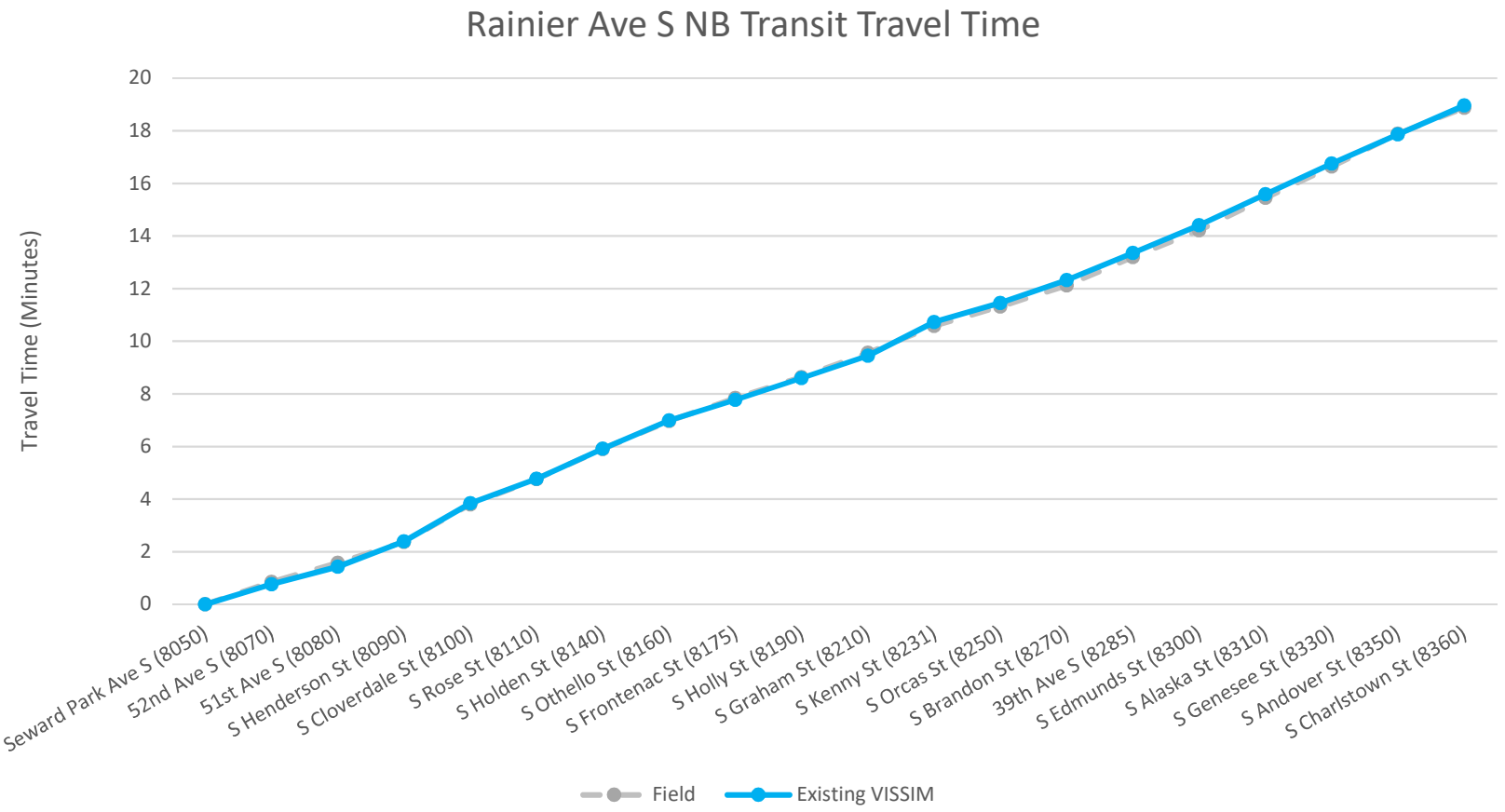
Auto Travel Time – Rainier Ave S NB



Transit Travel Time – Rainier Ave S SB



Transit Travel Time – Rainier Ave S NB



GP (SB)			Field		Existing VISSIM		DIFFERENCE
Segment	From	To	Segment (s)	Cumulative (min)	Segment (s)	Cumulative (min)	
1		S Charlstown St	0	0	0	0	0
2	S Charlstown St	S Andover St	22	0.4	23	0.4	1
3	S Andover St	S Genesee St	45	1.1	40	1.1	-5
4	S Genesee St	S Oregon St	20	1.4	23	1.4	3
5	S Oregon St	S Alaska St	95	3.0	94	3.0	-1
6	S Alaska St	S Edmunds St	66	4.1	63	4.1	-2
7	S Edmunds St	S Ferdinand St	23	4.5	14	4.3	-9
8	S Ferdinand St	S Hudson St	13	4.7	12	4.5	0
9	S Hudson St	39th Ave S	27	5.2	18	4.8	-9
10	39th Ave S	S Brandon St	81	6.5	68	5.9	-14
11	S Brandon St	S Orcas St	74	7.8	61	7.0	-12
12	S Orcas St	S Kenny St	25	8.2	26	7.4	1
13	S Kenny St	S Graham St	48	9.0	49	8.2	0
14	S Graham St	S Holly St	39	9.6	49	9.0	10
15	S Holly St	S Frontenac St	24	10.0	28	9.5	5
16	S Frontenac St	S Othello St	37	10.6	50	10.3	13
17	S Othello St	S Holden St	34	11.2	37	10.9	3
18	S Holden St	S Kenyon St	25	11.6	21	11.3	-4
19	S Kenyon St	S Rose St	28	12.1	23	11.6	-6
20	S Rose St	S Cloverdale St	36	12.7	33	12.2	-2
21	S Cloverdale St	S Henderson St	50	13.5	50	13.0	0
22	S Henderson St	S Fisher Pl	25	13.9	21	13.4	-4
23	S Fisher Pl	51st Ave S	35	14.5	21	13.7	-14
24	51st Ave S	52nd Ave S	18	14.8	15	14.0	-3
25	52nd Ave S	Seward Park Ave S	59	15.8	52	14.9	-6
					874		
Total	S Charlstown St	Seward Park Ave S	947	15.8	891	14.9	-56
					-6%		

GP (NB)			Field		Existing VISSIM		
Segment	From	To	Segment (s)	Cumulative (min)	Segment (s)	Cumulative (min)	
1		Seward Park Ave S	0	0	0	0	0
2	Seward Park Ave S	52nd Ave S	31	0.5	29	0.5	-2
3	52nd Ave S	51st Ave S	17	0.8	18	0.8	1
4	51st Ave S	S Fisher Pl	18	1.1	15	1.0	-2
5	S Fisher Pl	S Henderson St	40	1.8	31	1.6	-9
6	S Henderson St	S Cloverdale St	46	2.5	33	2.1	-13
7	S Cloverdale St	S Rose St	27	3.0	25	2.5	-2
8	S Rose St	S Kenyon St	23	3.4	25	2.9	2
9	S Kenyon St	S Holden St	20	3.7	20	3.3	0
10	S Holden St	S Othello St	37	4.3	40	3.9	2
11	S Othello St	S Frontenac St	30	4.8	26	4.3	-4
12	S Frontenac St	S Holly St	33	5.4	30	4.8	-3
13	S Holly St	S Graham St	48	6.2	50	5.7	2
14	S Graham St	S Kenny St	28	6.6	37	6.3	9
15	S Kenny St	S Orcas St	38	7.3	34	6.9	-4
16	S Orcas St	S Brandon St	34	7.8	33	7.4	-1
17	S Brandon St	39th Ave S	36	8.4	42	8.1	6
18	39th Ave S	S Hudson St	19	8.8	20	8.5	1
19	S Hudson St	S Ferdinand St	15	9.0	14	8.7	-2
20	S Ferdinand St	S Edmunds St	12	9.2	13	8.9	1
21	S Edmunds St	S Alaska St	65	10.3	66	10.0	0
22	S Alaska St	S Oregon St	25	10.7	25	10.4	1
23	S Oregon St	S Genesee St	17	11.0	27	10.9	10
24	S Genesee St	S Andover St	37	11.6	46	11.7	10
25	S Andover St	S Charlstown St	20	11.9	30	12.2	10
					718		
Total	Seward Park Ave S	S Charlstown St	716	11.9	730	12.2	14
					2%		

Transit (SB)			Field		Existing VISSIM		
Segment	From	To	Segment (s)	Cumulative (min)	Segment (s)	Cumulative (min)	
1		S Charlstown St (8730)	0.0	0	0	0	0
2	S Charlstown St (8730)	S Andover St (8740)	60	1.0	54	0.9	-6
3	S Andover St (8740)	S Genesee St (8760)	95	2.6	84	2.3	-12
4	S Genesee St (8760)	S Alaska St (8780)	115	4.5	156	4.9	41
5	S Alaska St (8780)	S Edmunds St (8790)	48	5.3	50	5.7	3
6	S Edmunds St (8790)	39th Ave S (8810)	91	6.8	94	7.3	3

7	39th Ave S (8810)	S Brandon St (8820)	52	7.7	57	8.3	6
8	S Brandon St (8820)	S Orcas St (8840)	78	9.0	86	9.7	8
9	S Orcas St (8840)	S Kenny St (8850)	49	9.8	52	10.6	3
10	S Kenny St (8850)	S Graham St (8870)	66	10.9	66	11.7	0
11	S Graham St (8870)	S Holly St (8890)	79	12.2	70	12.8	-9
12	S Holly St (8890)	S Frontenac St (8905)	53	13.1	52	13.7	-2
13	S Frontenac St (8905)	S Othello St (8920)	59	14.1	55	14.6	-4
14	S Othello St (8920)	S Holden St (8940)	55	15.0	58	15.6	3
15	S Holden St (8940)	S Rose St (8970)	67	16.1	63	16.6	-4
16	S Rose St (8970)	S Cloverdale St (8990)	59	17.1	59	17.6	-1
Total	S Charlstown St	S Cloverdale St	1027	17.1	1056	17.6	28
					3%		

Transit (NB)			Field		Existing VISSIM		
Segment	From	To	Segment (s)	Cumulative (min)	Segment (s)	Cumulative (min)	
1		Seward Park Ave S (8050)	0	0	0	0	0
2	Seward Park Ave S (8050)	52nd Ave S (8070)	51	0.8	46	0.8	-5
3	52nd Ave S (8070)	51st Ave S (8080)	44	1.6	40	1.4	-4
4	51st Ave S (8080)	S Henderson St (8090)	47	2.4	58	2.4	10
6	S Henderson St (8090)	S Cloverdale St (8100)	86	3.8	87	3.8	1
7	S Cloverdale St (8100)	S Rose St (8110)	58	4.8	56	4.8	-2
8	S Rose St (8110)	S Holden St (8140)	68	5.9	69	5.9	0
10	S Holden St (8140)	S Othello St (8160)	64	7.0	65	7.0	1
11	S Othello St (8160)	S Frontenac St (8175)	52	7.8	47	7.8	-6
12	S Frontenac St (8175)	S Holly St (8190)	48	8.6	50	8.6	2
13	S Holly St (8190)	S Graham St (8210)	56	9.6	51	9.5	-5
14	S Graham St (8210)	S Kenny St (8231)	62	10.6	76	10.7	15
15	S Kenny St (8231)	S Orcas St (8250)	44	11.3	43	11.4	0
16	S Orcas St (8250)	S Brandon St (8270)	49	12.1	53	12.3	4
17	S Brandon St (8270)	39th Ave S (8285)	64	13.2	61	13.4	-3
18	39th Ave S (8285)	S Edmunds St (8300)	61	14.2	63	14.4	2
21	S Edmunds St (8300)	S Alaska St (8310)	74	15.4	70	15.6	-4
22	S Alaska St (8310)	S Genesee St (8330)	72	16.6	70	16.7	-2
24	S Genesee St (8330)	S Andover St (8350)	74	17.9	67	17.9	-7
25	S Andover St (8350)	S Charlstown St (8360)	60	18.9	66	19.0	6
Total	Seward Park Ave S (8050)	S Charlstown St (8360)	1132	18.9	1137	19.0	5
					0%		

Data Collection Point	Intersection	Turning Movement Volume (T - Through, RT - Right Turn, LT - Left Turn)	Observed Volume	Existing VISSIM Volume	Difference	% Difference	GEH
					Ex vs. Field	Ex vs. Field	Ex vs. Field
101	Rainier Ave S & S Letitia St	SBR	25	24	-1	-4%	0.20
102		SBT	1089	1092	3	0%	0.09
103		SBL	101	107	6	6%	0.59
104		WBR	111	118	7	6%	0.65
105		WBT	12	11	-1	-8%	0.29
106		WBL	72	72	0	0%	0.00
107		NBR	43	46	3	7%	0.45
108		NBT	811	811	0	0%	0.00
110		EBR	10	11	1	10%	0.31
111		EBT	13	15	2	15%	0.53
112		EBL	14	13	-1	-7%	0.27
202	Rainier Ave S & S Andover St	SBT	1144	1147	3	0%	0.09
203		SBL	27	29	2	7%	0.38
204		WBR	21	21	0	0%	0.00
206		WBL	99	99	0	0%	0.00
207		NBR	55	56	1	2%	0.13
208		NBT	833	855	22	3%	0.76
302	Rainier Ave S & S Dakota St	SBT	1210	1217	7	1%	0.20
303		SBL	33	34	1	3%	0.17
304		WBR	19	19	0	0%	0.00
306		WBL	10	11	1	10%	0.31
307		NBR	17	17	0	0%	0.00
308		NBT	869	893	24	3%	0.81
401	Rainier Ave S & S Adams St	SBR	36	39	3	8%	0.49
402		SBT	1184	1192	8	1%	0.23
408		NBT	876	900	24	3%	0.81
409		NBL	12	10	-2	-17%	0.60
410		EBR	11	10	-1	-9%	0.31
412		EBL	10	9	-1	-10%	0.32
501	Rainier Ave S & S Genesee St (W)	SBR	15	15	0	0%	0.00
502		SBT	1180	1203	23	2%	0.67
508		NBT	888	905	17	2%	0.57
510		EBR	10	8	-2	-20%	0.67
602	Rainier Ave S & S Genesee St (E)	SBT	947	936	-11	-1%	0.36
603		SBL	243	246	3	1%	0.19
604		WBR	184	188	4	2%	0.29
606		WBL	172	175	3	2%	0.23
607		NBR	98	100	2	2%	0.20
608		NBT	704	715	11	2%	0.41
701	Rainier Ave S & S Oregon St	SBR	103	100	-3	-3%	0.30
702		SBT	985	979	-6	-1%	0.19
703		SBL	31	30	-1	-3%	0.18
704		WBR	22	23	1	5%	0.21
707		NBR	22	23	1	5%	0.21
708		NBT	780	794	14	2%	0.50
709		NBL	10	9	-1	-10%	0.32
710		EBR	28	26	-2	-7%	0.38
801	Rainier Ave S & S Alaska St	SBR	187	188	1	1%	0.07
802		SBT	791	773	-18	-2%	0.64
803		SBL	35	33	-2	-6%	0.34
804		WBR	27	29	2	7%	0.38
805		WBT	106	102	-4	-4%	0.39
806		WBL	72	71	-1	-1%	0.12
807		NBR	57	58	1	2%	0.13
808		NBT	595	608	13	2%	0.53
809		NBL	114	118	4	4%	0.37
810		EBR	143	146	3	2%	0.25
811		EBT	145	139	-6	-4%	0.50
812		EBL	190	193	3	2%	0.22
901	Rainier Ave S & S Angeline St	SBR	109	108	-1	-1%	0.10
902		SBT	870	858	-12	-1%	0.41
903		SBL	27	24	-3	-11%	0.59
904		WBR	33	32	-1	-3%	0.18
905		WBT	10	9	-1	-10%	0.32
906		WBL	10	11	1	10%	0.31
907		NBR	10	10	0	0%	0.00
908		NBT	721	738	17	2%	0.63
909		NBL	10	12	2	20%	0.60
910		EBR	46	49	3	7%	0.44
911		EBT	10	9	-1	-10%	0.32
912		EBL	12	13	1	8%	0.28
1001		SBR	44	44	0	0%	0.00
1002		SBT	882	868	-14	-2%	0.47
1004		WBR	29	29	0	0%	0.00
1005		WBT	39	40	1	3%	0.16

1006	Rainier Ave S & S Edmunds St	WBL	15	14	-1	-7%	0.26
1007		NBR	13	11	-2	-15%	0.58
1008		NBT	643	662	19	3%	0.74
1009		NBL	32	34	2	6%	0.35
1010		EBR	27	29	2	7%	0.38
1011		EBT	24	23	-1	-4%	0.21
1012		EBL	69	72	3	4%	0.36
1101	Rainier Ave S & S Ferdinand St	SBR	24	25	1	4%	0.20
1102		SBT	876	872	-4	0%	0.14
1103		SBL	24	24	0	0%	0.00
1104		WBR	14	14	0	0%	0.00
1105		WBT	10	9	-1	-10%	0.32
1106		WBL	20	21	1	5%	0.22
1107		NBR	27	26	-1	-4%	0.19
1108		NBT	657	679	22	3%	0.85
1109		NBL	14	14	0	0%	0.00
1110		EBR	29	27	-2	-7%	0.38
1111		EBT	13	12	-1	-8%	0.28
1112		EBL	17	15	-2	-12%	0.50
1201	Rainier Ave S & S Hudson St	SBR	37	39	2	5%	0.32
1202		SBT	867	858	-9	-1%	0.31
1203		SBL	21	21	0	0%	0.00
1204		WBR	21	19	-2	-10%	0.45
1205		WBT	17	16	-1	-6%	0.25
1206		WBL	29	28	-1	-3%	0.19
1207		NBR	10	8	-2	-20%	0.67
1208		NBT	649	671	22	3%	0.86
1209		NBL	23	23	0	0%	0.00
1210		EBR	32	33	1	3%	0.18
1211		EBT	19	20	1	5%	0.23
1212		EBL	28	28	0	0%	0.00
1302	Rainier Ave S & 39th Ave S	SBT	928	912	-16	-2%	0.53
1307		NBR	17	18	1	6%	0.24
1308		NBT	682	697	15	2%	0.57
1401	Rainier Ave S & 39th Ave S	SBR	62	56	-6	-10%	0.78
1402		SBT	866	855	-11	-1%	0.37
1408		NWBT	662	679	17	3%	0.66
1409		NWBL	10	10	0	0%	0.00
1410		NBR	29	31	2	7%	0.37
1412		NBL	37	36	-1	-3%	0.17
1501	Rainier Ave S & 42nd Ave S	SEBR	23	23	0	0%	0.00
1502		SEBT	862	852	-10	-1%	0.34
1503		SEBL	10	10	0	0%	0.00
1504		SBR	14	14	0	0%	0.00
1505		SBT	10	10	0	0%	0.00
1506		SBL	22	22	0	0%	0.00
1507		NWBR	37	35	-2	-5%	0.33
1508		NWBT	641	662	21	3%	0.82
1509		NWBL	10	9	-1	-10%	0.32
1510		NBR	10	11	1	10%	0.31
1511		NBT	10	10	0	0%	0.00
1512		NBL	17	16	-1	-6%	0.25
1602	Rainier Ave S & S Brandon St	SBT	862	853	-9	-1%	0.31
1603		SBL	32	30	-2	-6%	0.36
1604		WBR	47	46	-1	-2%	0.15
1607		NBR	10	8	-2	-20%	0.67
1608		NBT	641	657	16	2%	0.63
1610		EBR	10	9	-1	-10%	0.32
1701	Rainier Ave S & S Lucile St	SBR	10	10	0	0%	0.00
1702		SBT	852	841	-11	-1%	0.38
1703		SBL	10	8	-2	-20%	0.67
1704		WBR	10	11	1	10%	0.31
1705		WBT	10	11	1	10%	0.31
1706		WBL	10	9	-1	-10%	0.32
1707		NBR	10	10	0	0%	0.00
1708		NBT	641	653	12	2%	0.47
1709		NBL	10	9	-1	-10%	0.32
1710		EBR	10	9	-1	-10%	0.32
1711		EBT	10	11	1	10%	0.31
1801	Rainier Ave S & S Findlay St	SBR	16	16	0	0%	0.00
1802		SBT	829	813	-16	-2%	0.56
1803		SBL	27	27	0	0%	0.00
1804		WBR	24	25	1	4%	0.20
1805		WBT	10	10	0	0%	0.00
1807		NBR	13	13	0	0%	0.00
1808		NBT	622	631	9	1%	0.36
1809		NBL	10	8	-2	-20%	0.67
1810		EBR	10	9	-1	-10%	0.32
1811		EBT	10	10	0	0%	0.00
1812		EBL	15	15	0	0%	0.00

1901	Rainier Ave S & S Orcas St	SBR	24	22	-2	-8%	0.42
1902		SBT	782	766	-16	-2%	0.58
1903		SBL	33	30	-3	-9%	0.53
1904		WBR	41	42	1	2%	0.16
1905		WBT	75	76	1	1%	0.12
1906		WBL	39	41	2	5%	0.32
1907		NBR	33	30	-3	-9%	0.53
1908		NBT	565	572	7	1%	0.29
1909		NBL	33	32	-1	-3%	0.18
1910		EBR	72	79	7	10%	0.81
1911		EBT	106	105	-1	-1%	0.10
1912		EBL	39	40	1	3%	0.16
2001	Rainier Ave S & S Mead St	SBR	10	10	0	0%	0.00
2002		SBT	883	877	-6	-1%	0.20
2004		WBR	10	10	0	0%	0.00
2006		WBL	10	9	-1	-10%	0.32
2007		NBR	15	16	1	7%	0.25
2008		NBT	611	615	4	1%	0.16
2010		EBR	10	10	0	0%	0.00
2012		EBL	10	12	2	20%	0.60
2101	Rainier Ave S & S Juneau St	SBR	21	21	0	0%	0.00
2102		SBT	866	860	-6	-1%	0.20
2103		SBL	16	16	0	0%	0.00
2104		WBR	10	10	0	0%	0.00
2106		WBL	10	10	0	0%	0.00
2107		NBR	14	12	-2	-14%	0.55
2108		NBT	606	610	4	1%	0.16
2109		NBL	20	19	-1	-5%	0.23
2110		EBR	10	9	-1	-10%	0.32
2111		EBT	10	10	0	0%	0.00
2112		EBL	10	10	0	0%	0.00
2201	Rainier Ave S & S Kenny St	SBR	10	11	1	10%	0.31
2202		SBT	866	861	-5	-1%	0.17
2203		SBL	10	9	-1	-10%	0.32
2204		WBR	10	10	0	0%	0.00
2208		NBT	630	628	-2	0%	0.08
2209		NBL	10	10	0	0%	0.00
2210		EBR	10	10	0	0%	0.00
2301	Rainier Ave S & S Graham St	SBR	53	49	-4	-8%	0.56
2302		SBT	806	811	5	1%	0.18
2303		SBL	17	17	0	0%	0.00
2304		WBR	32	32	0	0%	0.00
2305		WBT	76	78	2	3%	0.23
2306		WBL	21	20	-1	-5%	0.22
2307		NBR	10	9	-1	-10%	0.32
2308		NBT	537	536	-1	0%	0.04
2309		NBL	83	83	0	0%	0.00
2310		EBR	136	143	7	5%	0.59
2311		EBT	70	68	-2	-3%	0.24
2312		EBL	71	74	3	4%	0.35
2402	Rainier Ave S & 46th Ave S	SEBT	963	969	6	1%	0.19
2404		SBR	0	0	0	#DIV/0!	#DIV/0!
2407		NWBR	27	27	0	0%	0.00
2408		NWBT	630	624	-6	-1%	0.24
2501	Rainier Ave S & S Eddy St	SBR	30	33	3	10%	0.53
2502		SBT	943	942	-1	0%	0.03
2508		NBT	647	641	-6	-1%	0.24
2509		NBL	19	22	3	16%	0.66
2510		EBR	13	14	1	8%	0.27
2512		EBL	10	12	2	20%	0.60
2602	Rainier Ave S & S Morgan St	SBT	939	931	-8	-1%	0.26
2603		SBL	17	18	1	6%	0.24
2604		WBR	32	32	0	0%	0.00
2606		WBL	11	12	1	9%	0.29
2607		NBR	32	35	3	9%	0.52
2608		NBT	634	635	1	0%	0.04
2702	Rainier Ave S & S Warsaw St	SBT	950	944	-6	-1%	0.19
2704		WBR	10	12	2	20%	0.60
2706		WBL	10	8	-2	-20%	0.67
2707		NBR	10	9	-1	-10%	0.32
2708		NBT	656	659	3	0%	0.12
2801	Rainier Ave S & S Holly St	SBR	10	10	0	0%	0.00
2802		SBT	940	938	-2	0%	0.07
2803		SBL	10	10	0	0%	0.00
2804		WBR	10	10	0	0%	0.00
2805		WBT	10	10	0	0%	0.00
2806		WBL	10	12	2	20%	0.60
2807		NBR	10	9	-1	-10%	0.32
2808		NBT	637	637	0	0%	0.00
2809		NBL	28	26	-2	-7%	0.38

2810		EBR	55	56	1	2%	0.13
2811		EBT	11	10	-1	-9%	0.31
2812		EBL	19	19	0	0%	0.00
2901	Rainier Ave S & S Willow St	SBR	10	11	1	10%	0.31
2902		SBT	985	985	0	0%	0.00
2903		SBL	10	11	1	10%	0.31
2904		WBR	10	8	-2	-20%	0.67
2906		WBL	10	9	-1	-10%	0.32
2907		NBR	10	9	-1	-10%	0.32
2908		NBT	655	651	-4	-1%	0.16
2909		NBL	10	9	-1	-10%	0.32
2910		EBR	10	9	-1	-10%	0.32
2912		EBL	10	11	1	10%	0.31
3002	Rainier Ave S & S Frontenac St	SBT	1005	998	-7	-1%	0.22
3008		NBT	675	670	-5	-1%	0.19
3010		EBR	10	9	-1	-10%	0.32
3101	Rainier Ave S & S Myrtle St	SBR	16	16	0	0%	0.00
3102		SBT	981	971	-10	-1%	0.32
3103		SBL	18	18	0	0%	0.00
3104		WBR	12	11	-1	-8%	0.29
3105		WBT	10	9	-1	-10%	0.32
3106		WBL	10	10	0	0%	0.00
3107		NBR	10	10	0	0%	0.00
3108		NBT	653	649	-4	-1%	0.16
3110		EBR	14	12	-2	-14%	0.55
3112		EBL	10	12	2	20%	0.60
3201	Rainier Ave S & S Orchard St	SBR	10	10	0	0%	0.00
3202		SBT	985	974	-11	-1%	0.35
3203		SBL	10	9	-1	-10%	0.32
3204		WBR	12	11	-1	-8%	0.29
3206		WBL	10	9	-1	-10%	0.32
3207		NBR	10	11	1	10%	0.31
3208		NBT	651	649	-2	0%	0.08
3209		NBL	10	12	2	20%	0.60
3210		EBR	10	9	-1	-10%	0.32
3301	Rainier Ave S & S Garden St	SBR	13	13	0	0%	0.00
3302		SBT	982	970	-12	-1%	0.38
3303		SBL	10	10	0	0%	0.00
3304		WBR	20	20	0	0%	0.00
3306		WBL	10	11	1	10%	0.31
3307		NBR	10	11	1	10%	0.31
3308		NBT	651	653	2	0%	0.08
3309		NBL	10	11	1	10%	0.31
3310		EBR	14	15	1	7%	0.26
3401	Rainier Ave S & S Othello St	SBR	71	67	-4	-6%	0.48
3402		SBT	922	917	-5	-1%	0.16
3403		SBL	13	15	2	15%	0.53
3404		WBR	33	34	1	3%	0.17
3405		WBT	92	93	1	1%	0.10
3406		WBL	25	23	-2	-8%	0.41
3407		NBR	16	16	0	0%	0.00
3408		NBT	561	566	5	1%	0.21
3409		NBL	84	89	5	6%	0.54
3410		EBR	128	133	5	4%	0.44
3411		EBT	83	84	1	1%	0.11
3412		EBL	77	76	-1	-1%	0.11
3501	Rainier Ave S & S Fontanelle St	SBR	10	11	1	10%	0.31
3502		SBT	1065	1058	-7	-1%	0.21
3508		NBT	651	660	9	1%	0.35
3509		NBL	23	24	1	4%	0.21
3510		EBR	15	13	-2	-13%	0.53
3512		EBL	10	9	-1	-10%	0.32
3601	Rainier Ave S & S Austin St	SBR	10	10	0	0%	0.00
3602		SBT	1070	1057	-13	-1%	0.40
3608		NBT	664	679	15	2%	0.58
3609		NBL	19	20	1	5%	0.23
3610		EBR	17	18	1	6%	0.24
3612		EBL	10	7	-3	-30%	1.03
3701	Rainier Ave S & S Holden St	SBR	20	21	1	5%	0.22
3702		SBT	1067	1060	-7	-1%	0.21
3708		NBT	683	698	15	2%	0.57
3709		NBL	10	8	-2	-20%	0.67
3710		EBR	10	10	0	0%	0.00
3801	Rainier Ave S & S Chicago St	SBR	19	20	1	5%	0.23
3802		SBT	1058	1053	-5	0%	0.15
3808		NBT	683	695	12	2%	0.46
3809		NBL	10	8	-2	-20%	0.67
3810		EBR	13	15	2	15%	0.53
3812		EBL	10	9	-1	-10%	0.32
3901		SBR	22	19	-3	-14%	0.66

3902	Rainier Ave S & S Kenyon St	SBT	1028	1027	-1	0%	0.03
3903		SBL	21	22	1	5%	0.22
3904		WBR	48	48	0	0%	0.00
3907		NBR	16	19	3	19%	0.72
3908		NBT	645	657	12	2%	0.47
3909		NBL	18	19	1	6%	0.23
3910		EBR	37	35	-2	-5%	0.33
4001	Rainier Ave S & S Elmgrove St	SBR	10	10	0	0%	0.00
4002		SBT	1055	1046	-9	-1%	0.28
4008		NBT	669	682	13	2%	0.50
4009		NBL	10	10	0	0%	0.00
4010		EBR	10	11	1	10%	0.31
4012		EBL	10	11	1	10%	0.31
4101	Rainier Ave S & S Rose St	SBR	29	28	-1	-3%	0.19
4102		SBT	1004	997	-7	-1%	0.22
4103		SBL	32	31	-1	-3%	0.18
4104		WBR	47	44	-3	-6%	0.44
4107		NBR	16	18	2	13%	0.49
4108		NBT	632	650	18	3%	0.71
4109		NBL	13	12	-1	-8%	0.28
4110		EBR	22	23	1	5%	0.21
4201	Rainier Ave S & S Thistle St	SBR	25	24	-1	-4%	0.20
4202		SBT	1001	995	-6	-1%	0.19
4208		NBT	651	674	23	4%	0.89
4209		NBL	10	11	1	10%	0.31
4210		EBR	10	11	1	10%	0.31
4212		EBL	10	10	0	0%	0.00
4301	Rainier Ave S & S Cloverdale St	SBR	32	30	-2	-6%	0.36
4302		SBT	969	973	4	0%	0.13
4303		SBL	10	9	-1	-10%	0.32
4304		WBR	24	24	0	0%	0.00
4305		WBT	37	36	-1	-3%	0.17
4306		WBL	39	38	-1	-3%	0.16
4307		NBR	24	24	0	0%	0.00
4308		NBT	598	624	26	4%	1.05
4309		NBL	64	64	0	0%	0.00
4310		EBR	91	95	4	4%	0.41
4311		EBT	42	41	-1	-2%	0.16
4312		EBL	39	38	-1	-3%	0.16
4401	Rainier Ave S & S Henderson St	SBR	130	131	1	1%	0.09
4402		SBT	880	878	-2	0%	0.07
4403		SBL	89	96	7	8%	0.73
4404		WBR	65	67	2	3%	0.25
4405		WBT	94	96	2	2%	0.21
4406		WBL	41	38	-3	-7%	0.48
4407		NBR	33	35	2	6%	0.34
4408		NBT	525	547	22	4%	0.95
4409		NBL	128	123	-5	-4%	0.45
4410		EBR	216	226	10	5%	0.67
4411		EBT	96	97	1	1%	0.10
4412		EBL	96	99	3	3%	0.30
4502	Rainier Ave S & S Director St	SBT	1127	1133	6	1%	0.18
4503		SBL	10	10	0	0%	0.00
4504		WBR	10	9	-1	-10%	0.32
4506		WBL	10	10	0	0%	0.00
4507		NBR	10	11	1	10%	0.31
4508		NBT	676	694	18	3%	0.69
4602	Rainier Ave S & S Fisher Pl	SBT	1075	1083	8	1%	0.24
4603		SBL	62	61	-1	-2%	0.13
4604		WBR	82	84	2	2%	0.22
4606		WBL	11	12	1	9%	0.29
4607		NBR	10	10	0	0%	0.00
4608		NBT	604	622	18	3%	0.73
4701	Rainier Ave S & 51st Ave S	SBR	230	240	10	4%	0.65
4702		SBT	856	839	-17	-2%	0.58
4708		NBT	469	475	6	1%	0.28
4709		NBL	151	150	-1	-1%	0.08
4710		EBR	150	154	4	3%	0.32
4712		EBL	145	156	11	8%	0.90
4801	Rainier Ave S & Sturtevant Ave S	EBR	36	36	0	0%	0.00
4802		EBT	970	958	-12	-1%	0.39
4808		WBT	590	600	10	2%	0.41
4809		WBL	10	11	1	10%	0.31
4810		NBR	28	26	-2	-7%	0.38
4812		NBL	30	30	0	0%	0.00
4901	Rainier Ave S & 52nd Ave S	EBR	10	9	-1	-10%	0.32
4902		EBT	978	970	-8	-1%	0.26
4903		EBL	10	10	0	0%	0.00
4904		SBR	10	12	2	20%	0.60
4907		WBR	19	10	-9	-47%	2.36

4908		WBT	590	601	11	2%	0.45
4909		WBL	10	18	8	80%	2.14
4910		NBR	41	40	-1	-2%	0.16
5001	Rainier Ave S & 53rd Ave S	EBR	12	11	-1	-8%	0.29
5002		EBT	1007	1002	-5	0%	0.16
5008		WBT	609	619	10	2%	0.40
5009		WBL	10	10	0	0%	0.00
5010		NBR	10	10	0	0%	0.00
5012		NBL	10	11	1	10%	0.31
5101	Rainier Ave S & 54th Ave S	EBR	26	27	1	4%	0.19
5102		EBT	991	986	-5	-1%	0.16
5108		WBT	609	621	12	2%	0.48
5109		WBL	10	10	0	0%	0.00
5110		NBR	18	19	1	6%	0.23
5112		NBL	10	8	-2	-20%	0.67
5201	Rainier Ave S & Seward Park Ave S/56th Ave S	EBR	15	14	-1	-7%	0.26
5202		EBT	961	955	-6	-1%	0.19
5203		EBL	33	32	-1	-3%	0.18
5204		SBR	55	64	9	16%	1.17
5205		SBT	42	42	0	0%	0.00
5206		SBL	484	481	-3	-1%	0.14
5207		WBR	251	249	-2	-1%	0.13
5208		WBT	564	568	4	1%	0.17
5209		WBL	10	11	1	10%	0.31
5210		NBR	10	10	0	0%	0.00

Appendix B

Rainier Ave S Phase 2 Alternative 1 Synchro Detailed Results

Rainier Ave Phase 2 Alternative 1 Intersection Synchro MOE (PM Peak)						
Control Type	Intersection	Movement	Existing		Alternative 1 NB BAT Lane	
			Delay (s)	LOS	Delay (s)	LOS
Half-Signal	S Kenny St	EB	0	A	0	A
		SBT	2	A	5	A
		SBL	2	A	3	A
		WB	0	A	0	A
		NBR	N/A	-	2	A
		NBT	1	A	2	A
		NBL	N/A	-	2	A
		Intersection	**2**	**A**	**3**	**A**
Full-Signal	S Graham St	EB	24	C	77	E
		SBT	14	B	24	C
		SBL	36	D	5	A
		WB	17	B	42	D
		NBR	N/A	-	12	B
		NBT	7	A	16	B
		NBL	4	A	14	B
		Intersection	**15**	**B**	**30**	**C**
Full-Signal	S Holly St	EB	14	B	14	B
		SBT	4	A	14	B
		SBL	N/A	-	5	A
		WB	18	B	18	B
		NBR	N/A	-	3	A
		NBT	3	A	7	A
		NBL	N/A	-	6	A
		Intersection	**5**	**A**	**11**	**B**
Half-Signal	S Frontenac St	EBR	0	A	0	A
		SBT	0	A	2	A
		NBT	0	A	2	A
		Intersection	**0**	**A**	**2**	**A**
Full-Signal	S Othello St	EB	31	C	78	E
		SBT	20	C	68	E
		SBL	34	C	7	A
		WB	19	B	41	D
		NBR	N/A	-	13	B
		NBT	5	A	18	B
		NBL	47	D	46	D
		Intersection	**19**	**B**	**53**	**D**
Half-Signal	S Holden St	EBR	0	A	0	A
		SBT	3	A	13	B
		NBT	9	A	11	B
		NBL	N/A	-	10	B

		Intersection	**4**	**A**	**12**	**B**
Half-Signal	S Kenyon St	EB	0	A	5	A
		SBT	1	A	6	A
		SBL	N/A	-	1	A
		WB	0	A	1	A
		NBR	0	A	5	A
		NBT	5	A	11	B
		NBL	N/A	-	8	A
		Intersection	**3**	**A**	**8**	**A**
Half-Signal	S Rose St	EB	0	A	0	A
		SBT	1	A	10	B
		SBL	N/A	-	1	A
		WB	0	A	1	A
		NBR	0	A	2	A
		NBT	2	A	7	A
		NBL	N/A	-	4	A
		Intersection	**2**	**A**	**8**	**A**
Full-Signal	S Cloverdale St	EBR	11	B	10	B
		EBT	26	C	26	C
		SBT	5	A	16	B
		SBL	N/A	-	1	A
		WBR	4	A	4	A
		WBT	27	C	27	C
		NBR	N/A	-	7	A
		NBT	4	A	11	B
		NBL	7	A	31	C
		Intersection	**7**	**A**	**15**	**B**
Full-Signal	S Henderson St	EBT	19	B	20	C
		EBL	75	E	78	E
		SBR	N/A	-	4	A
		SBT	20	C	31	C
		SBL	66	E	6	A
		WBT	35	D	35	D
		WBL	69	E	67	E
		NBR	N/A	-	1	A
		NBT	15	B	18	B
		NBL	88	F	51	D
		NB Bus QJ	N/A	-	N/A	-
		Intersection	**28**	**C**	**28**	**C**

Appendix C

Rainier Ave S Phase 2 Alternative 2 Vissim Delay and LOS Detailed Results

Rainier Ave Phase 2 Altenative 2 Intersection Vissim MOE (PM Peak)					
Intersection	Movement	Existing VISSIM		Alt2	
		Delay	LOS	Delay	LOS
		GP	GP	GP	GP
Rainier Ave S & S Charlestown St	EBT	49	D	56	E
	EBR	51	D	69	E
	EBL	55	D	73	E
	WBT	49	D	53	D
	WBL	53	D	74	E
	WBR	13	B	16	B
	NBR	12	B	11	B
	NBT	12	B	11	B
	SBL	12	B	24	C
	SBT	5	A	24	C
	SBL	9	A	27	C
	Intersection	**11**	**B**	**21**	**C**
Rainier Ave S & S Andover St	NBT	11	B	11	B
	NBR	10	B	10	B
	SBT	5	A	32	C
	SBL	12	B	26	C
	WBL	55	E	81	F
	WBR	34	C	61	E
	Intersection	**10**	**A**	**25**	**C**
Rainier Ave S & S Genesee St	WBL	117	F	173	F
	WBR	21	C	47	D
	NBT	14	B	13	B
	NBR	13	B	11	B
	SBL	57	E	98	F
	SBT	9	A	76	E
	Intersection	**24**	**C**	**57**	**E**
Rainier Ave S & S Oregon St	EBR	21	C	102	F
	SBR	13	B	58	E
	SBT	16	B	62	E
	SBL	23	C	51	D
	NBL	28	C	92	F
	NBT	2	A	3	A
	NBR	2	A	2	A
	WBR	6	A	7	A
	Intersection	**10**	**B**	**34**	**C**
Rainier Ave S & S Alaska St	WBL	53	D	76	E
	WBR	32	C	40	D
	WBT	50	D	59	E
	NBR	30	C	28	C
	NBT	44	D	43	D
	NBL	71	E	71	E
	SBL	94	F	153	F

	SBT	90	F	151	F
	EBT	44	D	93	F
	EBR	37	D	89	F
	EBL	78	E	102	F
	SBR	93	F	165	F
	Intersection	**67**	**E**	**93**	**F**
Rainier Ave S & S Edmunds St	EBT	50	D	52	D
	EBR	42	D	51	D
	EBL	57	E	56	E
	WBT	48	D	44	D
	WBL	53	D	62	E
	WBR	31	C	28	C
	NBL	36	D	32	C
	NBR	4	A	3	A
	NBT	5	A	5	A
	SBR	44	D	92	F
	SBL	0	A	0	A
	SBT	44	D	94	F
	Intersection	**30**	**C**	**50**	**D**
Rainier Ave S & S Ferdinand St	EBT	49	D	55	D
	EBR	30	C	37	D
	EBL	56	E	59	E
	WBT	48	D	48	D
	WBL	60	E	64	E
	WBR	25	C	27	C
	NBL	28	C	24	C
	NBR	4	A	4	A
	NBT	5	A	5	A
	SBL	18	B	26	C
	SBT	7	A	19	B
	SBR	7	A	18	B
	Intersection	**8**	**A**	**15**	**B**
Rainier Ave S & S Hudson St	EBT	59	E	59	E
	EBL	63	E	62	E
	EBR	25	C	39	D
	WBT	58	E	62	E
	WBR	35	C	41	D
	WBL	63	E	72	E
	SBR	4	A	12	B
	SBL	14	B	18	B
	SBT	4	A	16	B
	NBL	29	C	23	C
	NBR	5	A	7	A
	NBT	6	A	7	A
	Intersection	**9**	**A**	**16**	**B**
	SBT	9	A	28	C

Rainier Ave S & 39th Ave S	NBT	5	A	5	A
	NBR	2	A	3	A
	Intersection	**7**	**A**	**17**	**B**
Rainier Ave S & S Brandon St	EBR	17	B	20	C
	NBL	0	A	0	A
	NBT	7	A	7	A
	NBR	7	A	7	A
	SBR	0	A	0	A
	SBT	34	C	74	E
	SBL	43	D	66	E
	WBR	13	B	13	B
	Intersection	**22**	**C**	**41**	**D**
Rainier Ave S & S Orcas St	NBT	13	B	17	B
	NBR	10	B	15	B
	NBL	36	D	30	C
	SBT	34	C	69	E
	SBL	41	D	70	E
	SBR	32	C	66	E
	WBL	66	E	72	E
	WBR	24	C	30	C
	WBT	57	E	64	E
	EBR	56	E	59	E
	EBL	69	E	71	E
	EBT	65	E	67	E
	Intersection	**32**	**C**	**49**	**D**
Rainier Ave S & S Kenny St	EBR	25	C	32	C
	WBR	9	A	9	A
	SBR	3	A	38	D
	SBT	3	A	35	D
	SBL	11		51	
	NBL	21	C	21	C
	NBR	0	A	0	A
	NBT	6	A	4	A
	Intersection	**4**	**A**	**22**	**C**
Rainier Ave S & S Graham St	WBT	13	B	39	D
	WBL	16	B	49	D
	WBR	8	A	28	C
	EBT	21	C	191	F
	EBR	16	B	190	F
	EBL	23	C	191	F
	NBR	12	B	33	C
	NBL	38	D	44	D
	NBT	15	B	33	C
	SBL	51	D	103	F
	SBT	16	B	93	F
	Intersection	**17**	**B**	**81**	**F**

Rainier Ave S & S Holly St	EBL	7	A	20	B
	EBR	23	C	61	E
	EBT	23	C	63	E
	SBR	17	B	107	F
	SBT	8	A	86	F
	SBL	9	A	76	E
	NBR	4	A	#N/A	-
	NBT	4	A	14	B
	NBL	15	B	27	C
	WBT	26	C	117	F
	WBR	25	C	116	F
	WBL	11	B	113	F
	Intersection	**8**	**A**	**57**	**E**
Rainier Ave S & S Frontenac St	EBR	5	A	208	F
	SBL	0	A	0	A
	SBT	1	A	84	F
	NBL	0	A	0	A
	NBT	2	A	29	C
	Intersection	**1**	**A**	**60**	**E**
Rainier Ave S & S Othello St	EBT	30	C	307	F
	EBR	25	C	298	F
	EBL	34	C	310	F
	WBL	19	B	56	E
	WBR	12	B	38	D
	WBT	20	B	50	D
	NBT	11	B	33	C
	NBL	35	D	53	D
	SBL	50	D	125	F
	SBT	24	C	107	F
	SBR	24	C	110	F
	NBR	8	A	29	C
	Intersection	**22**	**C**	**99**	**F**
Rainier Ave S & S Holden St	EBR	7	A	72	E
	EBL	8	A	44	D
	NBL	12	B	29	C
	NBT	3	A	17	B
	SBR	6	A	75	E
	SBT	7	A	81	F
	Intersection	**5**	**A**	**52**	**D**
Rainier Ave S & S Kenyon St	EBR	11	B	316	F
	WBR	7	A	12	B
	NBL	10	A	26	C
	NBR	2	A	17	B
	NBT	3	A	17	B
	SBR	3	A	54	D
	SBL	8	A	61	E

	SBT	2	A	59	E
	Intersection	**3**	**A**	**45**	**D**
Rainier Ave S & S Rose St	EBR	4	A	53	D
	NBL	9	A	23	C
	NBT	1	A	20	C
	NBR	1	A	22	C
	SBR	2	A	81	F
	SBT	1	A	83	F
	SBL	7	A	88	F
	WBR	3	A	20	C
	Intersection	**1**	**A**	**54**	**D**
Rainier Ave S & S Cloverdale St	WBT	24	C	57	E
	WBL	25	C	67	E
	EBT	22	C	74	E
	EBR	9	A	76	E
	EBL	23	C	75	E
	NBR	9	A	11	B
	NBL	25	C	33	C
	NBT	8	A	12	B
	SBL	15	B	79	E
	SBR	8	A	70	E
	SBT	7	A	73	E
	WBR	7	A	#N/A	-
	Intersection	**10**	**A**	**48**	**D**
Rainier Ave S & S Henderson St	WBT	44	D	49	D
	WBR	23	C	27	C
	WBL	60	E	60	E
	EBT	38	D	44	D
	EBL	60	E	60	E
	EBR	24	C	25	C
	SBL	64	E	73	E
	SBR	27	C	59	E
	SBT	27	C	62	E
	NBR	14	B	13	B
	NBL	74	E	66	E
	NBT	16	B	26	C
	Intersection	**31**	**C**	**46**	**D**
Rainier Ave S & S Fisher St	SBL	14	B	16	B
	SBT	5	A	6	A
	NBT	4	A	4	A
	WBR	8	A	8	A
	WBL	26		26	
	NBR	7	A	4	A
	Intersection	**5**	**A**	**6**	**A**
	NEBL	57	E	58	E
	NEBR	10	A	9	A

Rainier Ave S & 51st Ave S	NWBL	19	B	28	C
	NWBT	3	A	3	A
	SEBR	10	B	5	A
	SEBT	8	A	4	A
	Intersection	**12**	**B**	**11**	**B**
Rainier Ave S & 52nd Ave S	WBT	2	A	2	A
	WBR	10	B	11	B
	NBR	10	A	9	A
	EBT	0	A	0	A
	EBR	1	A	1	A
	EBL	7	A	5	A
	SBR	6	A	6	A
	WBL	25	C	19	B
	Intersection	**2**	**A**	**2**	**A**
Rainier Ave S & 56th Ave S	NBL	0	A	0	A
	NBR	30	C	29	C
	NBT	0	A	0	A
	EBR	22	C	26	C
	EBT	23	C	23	C
	EBL	38	D	41	D
	WBL	55	E	50	D
	WBT	16	B	16	B
	WBR	15	B	15	B
	SBT	67	E	59	E
	SBR	64	E	54	D
	SBL	68	E	57	E
	Intersection	**32**	**C**	**30**	**C**

Appendix D1

Rainier Ave S Phase 2 Alternative 2 Operating Plan for Alternative 1

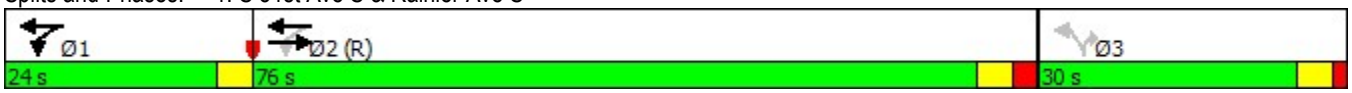
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	856	230	151	469	145	150
Future Volume (vph)	856	230	151	469	145	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	12	12
Storage Length (ft)		0	120		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	0.98				0.99	0.98
Frt	0.968					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3206	0	1652	3303	1770	1583
Flt Permitted			0.211		0.950	
Satd. Flow (perm)	3206	0	367	3303	1749	1558
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	40					170
Link Speed (mph)	30			30	30	
Link Distance (ft)	479			284	305	
Travel Time (s)	10.9			6.5	6.9	
Confl. Peds. (#/hr)		17	17		6	2
Peak Hour Factor	0.96	0.96	0.92	0.92	0.88	0.88
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%
Adj. Flow (vph)	892	240	164	510	165	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1132	0	164	510	165	170
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.09	1.09	1.09	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

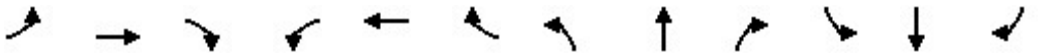
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		D.P+P	NA	Perm	Perm
Protected Phases	2		1	1 2		
Permitted Phases			2		3	3
Detector Phase	2		1	1 2	3	3
Switch Phase						
Minimum Initial (s)	7.0		5.0		7.0	7.0
Minimum Split (s)	24.0		9.0		25.0	25.0
Total Split (s)	76.0		24.0		30.0	30.0
Total Split (%)	58.5%		18.5%		23.1%	23.1%
Maximum Green (s)	70.0		20.5		25.0	25.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	2.5		0.0		1.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		3.5		5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		2.0		2.0	2.0
Recall Mode	C-Max		None		None	None
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	11.0				13.0	13.0
Pedestrian Calls (#/hr)	17				6	6
Act Effct Green (s)	88.8		101.4	104.9	16.6	16.6
Actuated g/C Ratio	0.68		0.78	0.81	0.13	0.13
v/c Ratio	0.51		0.43	0.19	0.74	0.49
Control Delay	3.6		11.6	5.7	73.5	11.8
Queue Delay	0.1		0.0	0.0	0.0	0.0
Total Delay	3.8		11.6	5.7	73.5	11.8
LOS	A		B	A	E	B
Approach Delay	3.8			7.1	42.2	
Approach LOS	A			A	D	
90th %ile Green (s)	78.2		14.3		23.0	23.0
90th %ile Term Code	Coord		Gap		Gap	Gap
70th %ile Green (s)	85.0		11.3		19.2	19.2
70th %ile Term Code	Coord		Gap		Gap	Gap
50th %ile Green (s)	88.9		10.0		16.6	16.6
50th %ile Term Code	Coord		Gap		Gap	Gap
30th %ile Green (s)	93.5		8.0		14.0	14.0
30th %ile Term Code	Coord		Gap		Gap	Gap
10th %ile Green (s)	98.6		6.7		10.2	10.2
10th %ile Term Code	Coord		Gap		Gap	Gap
Stops (vph)	206		60	132	136	19
Fuel Used(gal)	6		1	2	3	1
CO Emissions (g/hr)	420		71	161	228	57
NOx Emissions (g/hr)	82		14	31	44	11
VOC Emissions (g/hr)	97		17	37	53	13
Dilemma Vehicles (#)	0		0	0	0	0
Queue Length 50th (ft)	52		32	45	136	0
Queue Length 95th (ft)	212		115	135	198	58

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	399			204	225	
Turn Bay Length (ft)			120			
Base Capacity (vph)	2203		498	2665	336	436
Starvation Cap Reductn	274		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.59		0.33	0.19	0.49	0.39

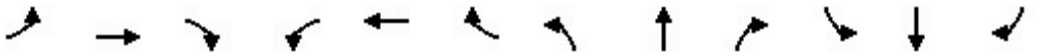
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 101 (78%), Referenced to phase 2:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 60.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: S 51st Ave S & Rainier Ave S





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	96	216	41	94	65	128	518	40	89	880	130
Future Volume (vph)	96	96	216	41	94	65	128	518	40	89	880	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	250		0	175		0	200		0	160		55
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.81	0.88		0.89	0.89				0.87			0.92
Frt		0.896			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	2641	0	1711	2868	0	1636	1722	1256	1652	1739	1478
Flt Permitted	0.950			0.950			0.090			0.331		
Satd. Flow (perm)	1356	2641	0	1530	2868	0	155	1722	1094	575	1739	1364
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		227			76				113			113
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		945			903			510			1047	
Travel Time (s)		25.8			24.6			11.6			23.8	
Confl. Peds. (#/hr)	65		77	77		65	34		55	55		34
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.93	0.93	0.93	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	20%	2%	2%	2%
Adj. Flow (vph)	101	101	227	48	111	76	138	557	43	91	898	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	328	0	48	187	0	138	557	43	91	898	133
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



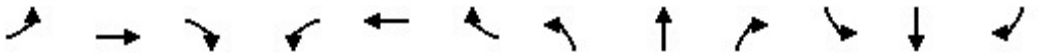
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		D.P+P	NA	Perm	D.P+P	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6		2	2		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	11.0	25.0		11.0	24.0		11.0	25.0	25.0	11.0	27.0	27.0
Total Split (s)	19.0	25.0		18.0	24.0		14.0	73.0	73.0	14.0	73.0	73.0
Total Split (%)	14.6%	19.2%		13.8%	18.5%		10.8%	56.2%	56.2%	10.8%	56.2%	56.2%
Maximum Green (s)	13.5	19.5		12.5	18.5		8.5	67.5	67.5	8.5	67.5	67.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
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)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			10.0			11.0	11.0		13.0	13.0
Pedestrian Calls (#/hr)		77			65			55	55		34	34
Act Effct Green (s)	11.8	19.9		9.0	14.9		81.3	74.3	74.3	81.3	73.0	73.0
Actuated g/C Ratio	0.09	0.15		0.07	0.11		0.63	0.57	0.57	0.63	0.56	0.56
v/c Ratio	0.66	0.55		0.41	0.47		0.72	0.57	0.06	0.22	0.92	0.16
Control Delay	77.6	19.8		67.2	35.0		50.9	17.3	1.3	6.0	31.0	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	77.6	19.8		67.2	35.0		50.9	18.1	1.3	6.0	31.0	3.9
LOS	E	B		E	C		D	B	A	A	C	A
Approach Delay		33.4			41.6			23.3			25.8	
Approach LOS		C			D			C			C	
90th %ile Green (s)	13.5	18.1		12.5	17.1		8.5	68.9	68.9	8.5	68.9	68.9
90th %ile Term Code	Max	Gap		Max	Hold		Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	13.5	20.1		10.4	17.0		8.5	69.5	69.5	8.0	69.0	69.0
70th %ile Term Code	Max	Hold		Gap	Ped		Max	Coord	Coord	Gap	Coord	Coord
50th %ile Green (s)	13.1	21.1		9.0	17.0		8.5	70.7	70.7	7.2	69.4	69.4
50th %ile Term Code	Gap	Hold		Gap	Ped		Max	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	11.0	20.4		7.6	17.0		8.5	73.7	73.7	6.3	71.5	71.5
30th %ile Term Code	Gap	Hold		Gap	Ped		Max	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	8.0	19.8		0.0	6.3		7.6	88.7	88.7	5.0	86.1	86.1
10th %ile Term Code	Gap	Hold		Skip	Gap		Gap	Coord	Coord	Min	Coord	Coord
Stops (vph)	92	94		38	87		136	298	3	29	628	26
Fuel Used(gal)	3	4		1	3		3	6	0	1	16	1
CO Emissions (g/hr)	185	289		71	188		181	387	13	70	1134	91
NOx Emissions (g/hr)	36	56		14	37		35	75	3	14	221	18
VOC Emissions (g/hr)	43	67		17	44		42	90	3	16	263	21
Dilemma Vehicles (#)	0	0		0	0		0	0	0	0	0	0
Queue Length 50th (ft)	83	39		39	45		49	237	1	22	565	22
Queue Length 95th (ft)	144	91		75	76		#139	377	6	m20	m#933	m26

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		865			823			430			967	
Turn Bay Length (ft)	250			175			200			160		55
Base Capacity (vph)	174	601		164	473		194	984	673	436	976	815
Starvation Cap Reductn	0	0		0	0		0	179	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.55		0.29	0.40		0.71	0.69	0.06	0.21	0.92	0.16

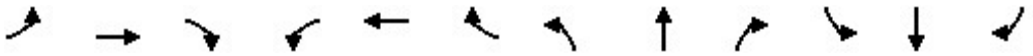
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 63 (48%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 27.8 Intersection LOS: C
Intersection Capacity Utilization 90.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rainier Ave S & S Henderson St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	961	15	10	564	251	0	0	10	484	42	55
Future Volume (vph)	33	961	15	10	564	251	0	0	10	484	42	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	70		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		1.00			0.99						0.99	
Frt		0.998			0.954				0.865		0.972	
Flt Protected		0.998			0.999					0.950	0.968	
Satd. Flow (prot)	0	3286	0	0	3142	0	0	0	1644	1681	1646	0
Flt Permitted		0.882			0.937					0.950	0.968	
Satd. Flow (perm)	0	2904	0	0	2947	0	0	0	1644	1681	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			94				98		9	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		194			308			306			664	
Travel Time (s)		4.4			7.0			8.3			15.1	
Confl. Peds. (#/hr)	6		19	19		6	21					21
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.71	0.71	0.71	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Adj. Flow (vph)	36	1045	16	11	641	285	0	0	14	494	43	56
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	0	1097	0	0	937	0	0	0	14	296	297	0
Enter Blocked Intersection	1 veh	2 veh	1 veh	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2				1	1	2	
Detector Template	Left	Thru		Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100		20	100				20	20	100	
Trailing Detector (ft)	0	0		0	0				0	0	0	
Detector 1 Position(ft)	0	0		0	0				0	0	0	
Detector 1 Size(ft)	20	6		20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Perm	NA		Perm	NA				Perm	Perm	NA	
Protected Phases		2			2						4	
Permitted Phases	2			2					4	4		
Detector Phase	2	2		2	2				4	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	27.0	27.0		27.0	27.0				23.0	23.0	23.0	
Total Split (s)	83.0	83.0		83.0	83.0				47.0	47.0	47.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%				36.2%	36.2%	36.2%	
Maximum Green (s)	77.5	77.5		77.5	77.5				41.5	41.5	41.5	
Yellow Time (s)	3.5	3.5		3.5	3.5				3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0				2.5	2.5	2.5	
Lost Time Adjust (s)		0.0			0.0				0.0	0.0	0.0	
Total Lost Time (s)		5.5			5.5				5.5	5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2				3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max				None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0				10.0	10.0	10.0	
Pedestrian Calls (#/hr)	19	19		19	19				21	21	21	
Act Effct Green (s)		89.6			89.6				29.4	29.4	29.4	
Actuated g/C Ratio		0.69			0.69				0.23	0.23	0.23	
v/c Ratio		0.55			0.46				0.03	0.78	0.78	
Control Delay		5.5			9.0				0.1	60.8	59.7	
Queue Delay		0.0			0.5				0.0	0.0	0.0	
Total Delay		5.5			9.5				0.1	60.8	59.7	
LOS		A			A				A	E	E	
Approach Delay		5.5			9.5			0.1			60.3	
Approach LOS		A			A			A			E	
90th %ile Green (s)	79.7	79.7		79.7	79.7				39.3	39.3	39.3	
90th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
70th %ile Green (s)	85.3	85.3		85.3	85.3				33.7	33.7	33.7	
70th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
50th %ile Green (s)	89.8	89.8		89.8	89.8				29.2	29.2	29.2	
50th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
30th %ile Green (s)	93.5	93.5		93.5	93.5				25.5	25.5	25.5	
30th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
10th %ile Green (s)	99.6	99.6		99.6	99.6				19.4	19.4	19.4	
10th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
Stops (vph)		275			305				0	264	260	
Fuel Used(gal)		7			5				0	7	6	
CO Emissions (g/hr)		504			362				2	458	453	
NOx Emissions (g/hr)		98			70				0	89	88	
VOC Emissions (g/hr)		117			84				0	106	105	
Dilemma Vehicles (#)		0			0				0	0	0	
Queue Length 50th (ft)		51			140				0	249	243	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		229			217				0	326	320	
Internal Link Dist (ft)		114			228			226			584	
Turn Bay Length (ft)										70		
Base Capacity (vph)		2001			2059				591	536	531	
Starvation Cap Reductn		0			639				0	0	0	
Spillback Cap Reductn		0			0				0	0	0	
Storage Cap Reductn		0			0				0	0	0	
Reduced v/c Ratio		0.55			0.66				0.02	0.55	0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 3 (2%), Referenced to phase 2:EBWB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: S 56th Ave S/Seward Park Ave S & Rainier Ave S

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	82	604	10	62	1075
Future Volume (vph)	11	82	604	10	62	1075
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.98		1.00		0.96	
Frt	0.881		0.997			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1620	0	3255	0	1652	3303
Flt Permitted	0.994				0.402	
Satd. Flow (perm)	1614	0	3255	0	673	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		4			
Link Speed (mph)	25		30			30
Link Distance (ft)	440		479			183
Travel Time (s)	12.0		10.9			4.2
Confl. Peds. (#/hr)	27	7		40	40	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.85	0.85	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%
Adj. Flow (vph)	13	96	643	11	66	1144
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	654	0	66	1144
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		10			10
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Detector 1 Position(ft)	0		0		0	0
Detector 1 Size(ft)	20		6		20	6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			6
Permitted Phases					6	
Detector Phase	4		2		6	6
Switch Phase						
Minimum Initial (s)	7.0		7.0		7.0	7.0
Minimum Split (s)	23.5		22.5		12.0	12.0
Total Split (s)	24.0		41.0		41.0	41.0
Total Split (%)	36.9%		63.1%		63.1%	63.1%
Maximum Green (s)	19.5		36.5		36.5	36.5
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		2.0	2.0
Recall Mode	None		C-Min		C-Min	C-Min
Walk Time (s)	7.0		7.0			
Flash Dont Walk (s)	12.0		6.0			
Pedestrian Calls (#/hr)	27		40			
Act Effct Green (s)	11.8		47.4		47.4	47.4
Actuated g/C Ratio	0.18		0.73		0.73	0.73
v/c Ratio	0.29		0.28		0.13	0.48
Control Delay	7.9		3.6		6.3	7.9
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	7.9		3.6		6.3	7.9
LOS	A		A		A	A
Approach Delay	7.9		3.6			7.8
Approach LOS	A		A			A
90th %ile Green (s)	19.0		37.0		37.0	37.0
90th %ile Term Code	Ped		Coord		Coord	Coord
70th %ile Green (s)	19.0		37.0		37.0	37.0
70th %ile Term Code	Ped		Coord		Coord	Coord
50th %ile Green (s)	7.0		49.0		49.0	49.0
50th %ile Term Code	Min		Coord		Coord	Coord
30th %ile Green (s)	7.0		49.0		49.0	49.0
30th %ile Term Code	Min		Coord		Coord	Coord
10th %ile Green (s)	0.0		60.5		60.5	60.5
10th %ile Term Code	Skip		Coord		Coord	Coord
Stops (vph)	21		179		24	528
Fuel Used(gal)	1		4		0	6
CO Emissions (g/hr)	40		261		21	432
NOx Emissions (g/hr)	8		51		4	84
VOC Emissions (g/hr)	9		60		5	100
Dilemma Vehicles (#)	0		0		0	0
Queue Length 50th (ft)	5		16		9	148

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (ft)	31		81		m25	m342
Internal Link Dist (ft)	360		399			103
Turn Bay Length (ft)					50	
Base Capacity (vph)	553		2374		491	2408
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.20		0.28		0.13	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 61 (94%), Referenced to phase 2:NBT and 6:SBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 7: Rainier Ave S & S Fisher Pl

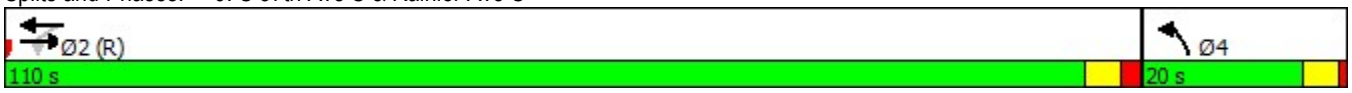
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1322	133	19	762	63	36
Future Volume (vph)	1322	133	19	762	63	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95
Ped Bike Factor	0.99				0.99	
Frt	0.986				0.946	
Flt Protected				0.999	0.969	
Satd. Flow (prot)	3237	0	0	3333	3022	0
Flt Permitted				0.871	0.969	
Satd. Flow (perm)	3237	0	0	2906	3022	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	30				42	
Link Speed (mph)	30			30	30	
Link Distance (ft)	308			192	309	
Travel Time (s)	7.0			4.4	7.0	
Confl. Peds. (#/hr)		11	11			3
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.87	0.87	0.85	0.85
Heavy Vehicles (%)	2%	2%	1%	1%	3%	3%
Adj. Flow (vph)	1422	143	22	876	74	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1565	0	0	898	116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	

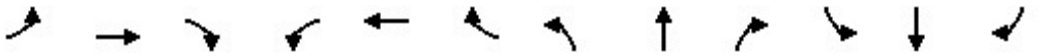
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases			2			
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	21.0		21.0	21.0	17.0	
Total Split (s)	110.0		110.0	110.0	20.0	
Total Split (%)	84.6%		84.6%	84.6%	15.4%	
Maximum Green (s)	104.5		104.5	104.5	15.5	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	2.0		2.0	2.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		0.2	0.2	3.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	8.0		8.0	8.0	5.0	
Pedestrian Calls (#/hr)	2		2	2	6	
Act Effct Green (s)	111.0			111.0	9.0	
Actuated g/C Ratio	0.85			0.85	0.07	
v/c Ratio	0.57			0.36	0.47	
Control Delay	2.0			2.5	42.8	
Queue Delay	0.4			0.0	0.0	
Total Delay	2.4			2.6	42.8	
LOS	A			A	D	
Approach Delay	2.4			2.6	42.8	
Approach LOS	A			A	D	
90th %ile Green (s)	108.0		108.0	108.0	12.0	
90th %ile Term Code	Coord		Coord	Coord	Ped	
70th %ile Green (s)	110.1		110.1	110.1	9.9	
70th %ile Term Code	Coord		Coord	Coord	Gap	
50th %ile Green (s)	111.4		111.4	111.4	8.6	
50th %ile Term Code	Coord		Coord	Coord	Gap	
30th %ile Green (s)	112.7		112.7	112.7	7.3	
30th %ile Term Code	Coord		Coord	Coord	Gap	
10th %ile Green (s)	113.0		113.0	113.0	7.0	
10th %ile Term Code	Coord		Coord	Coord	Min	
Stops (vph)	197			145	60	
Fuel Used(gal)	5			6	1	
CO Emissions (g/hr)	363			424	100	
NOx Emissions (g/hr)	71			82	19	
VOC Emissions (g/hr)	84			98	23	
Dilemma Vehicles (#)	0			0	0	
Queue Length 50th (ft)	120			60	31	
Queue Length 95th (ft)	7			90	57	
Internal Link Dist (ft)	228			112	229	
Turn Bay Length (ft)						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Base Capacity (vph)	2769			2482	397	
Starvation Cap Reductn	588			0	0	
Spillback Cap Reductn	0			57	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.72			0.37	0.29	

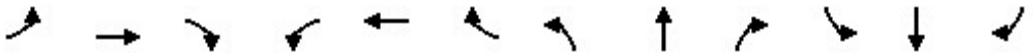
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 2:EBWB, Start of 1st Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: S 57th Ave S & Rainier Ave S





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	42	91	39	37	24	64	589	33	10	969	32
Future Volume (vph)	39	42	91	39	37	24	64	589	33	10	969	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	10	10	12	10	12	10
Storage Length (ft)	0		90	0		70	150		100	150		0
Storage Lanes	0		1	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.96		0.99	0.97			0.93	0.99	1.00	
Frt			0.850			0.850			0.850		0.995	
Flt Protected		0.976			0.975		0.950			0.950		
Satd. Flow (prot)	0	1836	1599	0	1739	1568	1636	1722	1252	1652	1785	0
Flt Permitted		0.801			0.794		0.113			0.326		
Satd. Flow (perm)	0	1499	1540	0	1405	1518	195	1722	1169	561	1785	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			80			50					4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		444			481			1047			633	
Travel Time (s)		12.1			13.1			23.8			14.4	
Confl. Peds. (#/hr)	7		10	10		7	9		23	23		9
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.86	0.86	0.86	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	42	45	98	46	44	28	74	685	38	10	1009	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	98	0	90	28	74	685	38	10	1042	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.04	1.00	1.09	1.09	1.00	1.09	1.05	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4		4	2		2	2		
Detector Phase	4	4	4	4	4	4	2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	22.0	22.0	22.0	22.0	22.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%	61.5%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	34.0	34.0	34.0	34.0	34.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)		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	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2	0.2	0.2	0.2	
Recall Mode	Min	Min	Min	Min	Min	Min	C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	10	23	23	23	23	23	
Act Effct Green (s)		11.0	11.0		11.0	11.0	42.0	42.0	42.0	42.0	42.0	
Actuated g/C Ratio		0.17	0.17		0.17	0.17	0.65	0.65	0.65	0.65	0.65	
v/c Ratio		0.35	0.30		0.38	0.09	0.59	0.62	0.05	0.03	0.90	
Control Delay		25.9	9.9		27.0	3.5	30.7	10.6	6.5	0.6	16.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		25.9	9.9		27.0	3.5	30.7	10.6	6.5	0.6	16.0	
LOS		C	A		C	A	C	B	A	A	B	
Approach Delay		17.4			21.4			12.3			15.9	
Approach LOS		B			C			B			B	
90th %ile Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	34.0	34.0	34.0	34.0	34.0	
90th %ile Term Code	Ped	Ped	Ped	Ped	Ped	Ped	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	11.8	11.8	11.8	11.8	11.8	11.8	41.2	41.2	41.2	41.2	41.2	
70th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	9.3	9.3	9.3	9.3	9.3	9.3	43.7	43.7	43.7	43.7	43.7	
50th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	7.7	7.7	7.7	7.7	7.7	7.7	45.3	45.3	45.3	45.3	45.3	
30th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	46.0	46.0	46.0	46.0	46.0	
10th %ile Term Code	Min	Min	Min	Min	Min	Min	Coord	Coord	Coord	Coord	Coord	
Stops (vph)		66	26		63	3	29	252	13	1	504	
Fuel Used(gal)		1	1		1	0	1	7	0	0	11	
CO Emissions (g/hr)		69	44		68	9	76	523	27	4	768	
NOx Emissions (g/hr)		13	9		13	2	15	102	5	1	149	
VOC Emissions (g/hr)		16	10		16	2	18	121	6	1	178	
Dilemma Vehicles (#)		0	0		0	0	0	0	0	0	0	

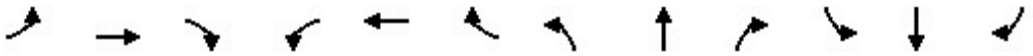
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		32	6		33	0	18	164	7	0	382	
Queue Length 95th (ft)		57	35		56	8	#121	308	m22	m0	#1287	
Internal Link Dist (ft)		364			401			967			553	
Turn Bay Length (ft)			90			70	150		100	150		
Base Capacity (vph)		438	506		410	479	126	1113	755	362	1155	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.20	0.19		0.22	0.06	0.59	0.62	0.05	0.03	0.90	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 10 (15%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Rainier Ave S & S Cloverdale St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	22	0	0	47	13	623	25	32	1004	29
Future Volume (vph)	0	0	22	0	0	47	13	623	25	32	1004	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	10	12	14
Storage Length (ft)	0		0	0		0	150		100	150		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98		1.00		0.96	0.99	1.00	
Frt		0.865			0.865				0.850		0.996	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1557	0	1636	1722	1170	1652	1787	0
Flt Permitted							0.145			0.333		
Satd. Flow (perm)	0	1558	0	0	1557	0	249	1722	1124	576	1787	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		84			185						4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		459			255			444			436	
Travel Time (s)		12.5			7.0			10.1			9.9	
Confl. Peds. (#/hr)	2		21	21		2	13		22	22		13
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.87	0.87	0.87	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	38%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	0	0	28	0	0	55	15	716	29	34	1057	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	55	0	15	716	29	34	1088	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.05	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA			NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			2	
Permitted Phases	4			8			2		2	2		
Detector Phase	4	4		8	8		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		4.0	4.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	24.0	24.0		20.0	20.0		12.0	12.0	12.0	12.0	12.0	
Total Split (s)	24.0	24.0		20.0	20.0		41.0	41.0	41.0	41.0	41.0	
Total Split (%)	36.9%	36.9%		30.8%	30.8%		63.1%	63.1%	63.1%	63.1%	63.1%	
Maximum Green (s)	21.0	21.0		16.0	16.0		36.5	36.5	36.5	36.5	36.5	
Yellow Time (s)	3.0	3.0		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	0.0		0.5	0.5		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		3.0			4.0		4.5	4.5	4.5	4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		3.0	3.0		0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0		5.0	5.0							
Flash Dont Walk (s)	14.0	14.0		11.0	11.0							
Pedestrian Calls (#/hr)	21	21		0	0							
Act Effct Green (s)		12.6			11.4		50.7	50.7	50.7	50.7	50.7	
Actuated g/C Ratio		0.19			0.18		0.78	0.78	0.78	0.78	0.78	
v/c Ratio		0.08			0.13		0.08	0.53	0.03	0.08	0.78	
Control Delay		0.4			0.6		3.6	6.6	2.4	1.2	9.6	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		0.4			0.6		3.6	6.6	2.4	1.2	9.6	
LOS		A			A		A	A	A	A	A	
Approach Delay		0.4			0.6			6.4			9.3	
Approach LOS		A			A			A			A	
90th %ile Green (s)	21.0	21.0		20.0	20.0		36.5	36.5	36.5	36.5	36.5	
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	21.0	21.0		20.0	20.0		36.5	36.5	36.5	36.5	36.5	
70th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	7.0	7.0		6.0	6.0		50.5	50.5	50.5	50.5	50.5	
50th %ile Term Code	Min	Min		Hold	Hold		Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		60.5	60.5	60.5	60.5	60.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		60.5	60.5	60.5	60.5	60.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord	Coord	Coord	Coord	
Stops (vph)		0			0		4	310	6	3	155	
Fuel Used(gal)		0			0		0	5	0	0	6	
CO Emissions (g/hr)		6			8		5	329	9	9	447	
NOx Emissions (g/hr)		1			1		1	64	2	2	87	
VOC Emissions (g/hr)		1			2		1	76	2	2	104	
Dilemma Vehicles (#)		0			0		0	0	0	0	0	

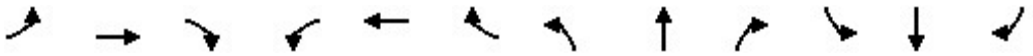
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		0			0		0	116	0	0	7	
Queue Length 95th (ft)		0			0		m2	333	m4	m1	#812	
Internal Link Dist (ft)		379			175			364			356	
Turn Bay Length (ft)							150		100	150		
Base Capacity (vph)		560			607		194	1343	877	449	1395	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.05			0.09		0.08	0.53	0.03	0.08	0.78	

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 45 (69%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 7.8 Intersection LOS: A
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Rainier Ave S & S Rose St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	37	0	0	48	18	636	25	21	1028	22
Future Volume (vph)	0	0	37	0	0	48	18	636	25	21	1028	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	10	12	11
Storage Length (ft)	0		0	0		0	150		100	75		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.98		1.00		0.97	1.00	1.00	
Frt		0.865			0.865				0.850		0.997	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	1575	0	0	1561	0	1636	1722	1170	1652	1855	0
Flt Permitted							0.163			0.340		
Satd. Flow (perm)	0	1575	0	0	1561	0	280	1722	1137	590	1855	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		68			177						3	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		395			348			458			372	
Travel Time (s)		10.8			9.5			10.4			8.5	
Confl. Peds. (#/hr)	1		13	13		1	27		9	9		27
Confl. Bikes (#/hr)			2						1			
Peak Hour Factor	0.73	0.73	0.73	0.68	0.68	0.68	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	38%	2%	2%	2%
Adj. Flow (vph)	0	0	51	0	0	71	21	740	29	22	1082	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	71	0	21	740	29	22	1105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.00	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA			NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			2	
Permitted Phases	4			8			2		2	2		
Detector Phase	4	4		8	8		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		4.0	4.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	24.0	24.0		20.0	20.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	24.0	24.0		20.0	20.0		41.0	41.0	41.0	41.0	41.0	
Total Split (%)	36.9%	36.9%		30.8%	30.8%		63.1%	63.1%	63.1%	63.1%	63.1%	
Maximum Green (s)	21.0	21.0		16.0	16.0		35.5	35.5	35.5	35.5	35.5	
Yellow Time (s)	3.0	3.0		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	0.0		0.5	0.5		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	
Total Lost Time (s)		3.0			4.0		5.5	5.5	5.5	5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		3.0	3.0		0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0		5.0	5.0							
Flash Dont Walk (s)	14.0	14.0		11.0	11.0							
Pedestrian Calls (#/hr)	13	13		0	0							
Act Effct Green (s)		9.8			8.6		52.9	52.9	52.9	52.9	52.9	
Actuated g/C Ratio		0.15			0.13		0.81	0.81	0.81	0.81	0.81	
v/c Ratio		0.17			0.20		0.09	0.53	0.03	0.05	0.73	
Control Delay		5.2			1.2		8.1	11.0	5.5	0.5	6.5	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		5.2			1.2		8.1	11.0	5.5	0.5	6.5	
LOS		A			A		A	B	A	A	A	
Approach Delay		5.2			1.2			10.7			6.3	
Approach LOS		A			A			B			A	
90th %ile Green (s)	21.0	21.0		20.0	20.0		35.5	35.5	35.5	35.5	35.5	
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	7.0	7.0		6.0	6.0		49.5	49.5	49.5	49.5	49.5	
70th %ile Term Code	Min	Min		Hold	Hold		Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	7.0	7.0		6.0	6.0		49.5	49.5	49.5	49.5	49.5	
50th %ile Term Code	Min	Min		Hold	Hold		Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		59.5	59.5	59.5	59.5	59.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		59.5	59.5	59.5	59.5	59.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord	Coord	Coord	Coord	
Stops (vph)		7			0		10	376	12	1	105	
Fuel Used(gal)		0			0		0	6	0	0	5	
CO Emissions (g/hr)		13			11		10	404	13	5	350	
NOx Emissions (g/hr)		3			2		2	79	2	1	68	
VOC Emissions (g/hr)		3			2		2	94	3	1	81	
Dilemma Vehicles (#)		0			0		0	0	0	0	0	
Queue Length 50th (ft)		0			0		3	263	3	0	7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		9			0		m13	373	m14	m0	#833	
Internal Link Dist (ft)		315			268			378			292	
Turn Bay Length (ft)							150		100	75		
Base Capacity (vph)		554			602		228	1401	925	480	1510	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.09			0.12		0.09	0.53	0.03	0.05	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 26 (40%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: Rainier Ave S & S Kenyon St

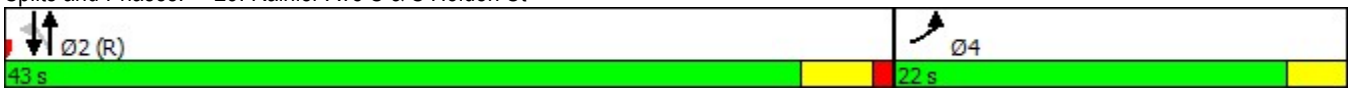
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	10	683	1067	20
Future Volume (vph)	0	10	10	683	1067	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		1.00		1.00	
Frt	0.865				0.997	
Flt Protected			0.950			
Satd. Flow (prot)	1473	0	1636	1722	1789	0
Flt Permitted			0.137			
Satd. Flow (perm)	1473	0	235	1722	1789	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	81				3	
Link Speed (mph)	25			30	30	
Link Distance (ft)	652			388	373	
Travel Time (s)	17.8			8.8	8.5	
Confl. Peds. (#/hr)	32	2	22			22
Peak Hour Factor	0.55	0.55	0.93	0.93	0.96	0.96
Heavy Vehicles (%)	9%	9%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	9	0
Adj. Flow (vph)	0	18	11	734	1111	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	11	734	1132	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			10	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.09	1.09	1.05	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	2	
Permitted Phases			2			
Detector Phase	4		2	2	2	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	22.0		12.0	12.0	12.0	
Total Split (s)	22.0		43.0	43.0	43.0	
Total Split (%)	33.8%		66.2%	66.2%	66.2%	
Maximum Green (s)	19.0		38.5	38.5	38.5	
Yellow Time (s)	3.0		3.5	3.5	3.5	
All-Red Time (s)	0.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	3.0		4.5	4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		0.2	0.2	0.2	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0					
Flash Dont Walk (s)	12.0					
Pedestrian Calls (#/hr)	32					
Act Effct Green (s)	11.8		51.5	51.5	51.5	
Actuated g/C Ratio	0.18		0.79	0.79	0.79	
v/c Ratio	0.05		0.06	0.54	0.80	
Control Delay	0.3		10.4	10.7	12.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	0.3		10.4	10.7	12.8	
LOS	A		B	B	B	
Approach Delay	0.3			10.7	12.8	
Approach LOS	A			B	B	
90th %ile Green (s)	19.0		38.5	38.5	38.5	
90th %ile Term Code	Ped		Coord	Coord	Coord	
70th %ile Green (s)	19.0		38.5	38.5	38.5	
70th %ile Term Code	Ped		Coord	Coord	Coord	
50th %ile Green (s)	7.0		50.5	50.5	50.5	
50th %ile Term Code	Min		Coord	Coord	Coord	
30th %ile Green (s)	0.0		60.5	60.5	60.5	
30th %ile Term Code	Skip		Coord	Coord	Coord	
10th %ile Green (s)	0.0		60.5	60.5	60.5	
10th %ile Term Code	Skip		Coord	Coord	Coord	
Stops (vph)	0		7	274	316	
Fuel Used(gal)	0		0	5	8	
CO Emissions (g/hr)	4		6	354	541	
NOx Emissions (g/hr)	1		1	69	105	
VOC Emissions (g/hr)	1		1	82	125	
Dilemma Vehicles (#)	0		0	0	0	
Queue Length 50th (ft)	0		1	105	357	

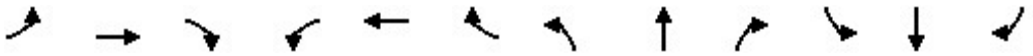
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)	0		m7	374	m#898	
Internal Link Dist (ft)	572			308	293	
Turn Bay Length (ft)			150			
Base Capacity (vph)	487		186	1364	1418	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.04		0.06	0.54	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 6 (9%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 23: Rainier Ave S & S Holden St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	11	55	10	10	10	28	628	19	10	940	10
Future Volume (vph)	19	11	55	10	10	10	28	628	19	10	940	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	10	12	12
Storage Length (ft)	0		0	0		0	150		100	100		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.98				0.96		1.00	
Frt		0.913			0.955				0.850		0.998	
Flt Protected		0.989			0.984		0.950			0.950		
Satd. Flow (prot)	0	1639	0	0	1679	0	1636	1722	1084	1652	1791	0
Flt Permitted		0.910			0.876		0.139			0.306		
Satd. Flow (perm)	0	1503	0	0	1480	0	239	1722	1036	532	1791	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		60			14						1	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		549			457			716			364	
Travel Time (s)		15.0			12.5			16.3			8.3	
Confl. Peds. (#/hr)	9		18	18		9	22		11	11		22
Confl. Bikes (#/hr)			2			2			1			
Peak Hour Factor	0.91	0.91	0.91	0.71	0.71	0.71	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	49%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	21	12	60	14	14	14	34	757	23	11	1056	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	42	0	34	757	23	11	1067	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.05	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



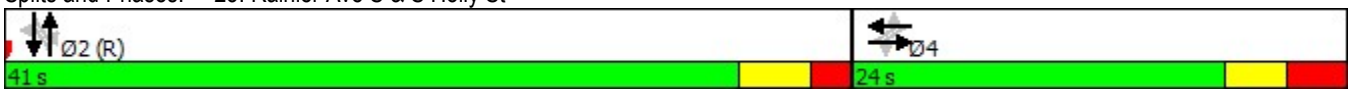
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2		2	2		
Detector Phase	4	4		4	4		2	2	2	2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		21.0	21.0	21.0	21.0	21.0	
Total Split (s)	24.0	24.0		24.0	24.0		41.0	41.0	41.0	41.0	41.0	
Total Split (%)	36.9%	36.9%		36.9%	36.9%		63.1%	63.1%	63.1%	63.1%	63.1%	
Maximum Green (s)	18.0	18.0		18.0	18.0		35.5	35.5	35.5	35.5	35.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	3.0	3.0		3.0	3.0		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	
Total Lost Time (s)		6.0			6.0		5.5	5.5	5.5	5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		8.0	8.0	8.0	8.0	8.0	
Pedestrian Calls (#/hr)	18	18		18	18		22	22	22	22	22	
Act Effct Green (s)		9.5			9.5		47.7	47.7	47.7	47.7	47.7	
Actuated g/C Ratio		0.15			0.15		0.73	0.73	0.73	0.73	0.73	
v/c Ratio		0.34			0.19		0.19	0.60	0.03	0.03	0.81	
Control Delay		14.3			18.3		6.2	7.3	3.0	4.6	14.2	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		14.3			18.3		6.2	7.3	3.0	4.6	14.2	
LOS		B			B		A	A	A	A	B	
Approach Delay		14.3			18.3			7.1			14.1	
Approach LOS		B			B			A			B	
90th %ile Green (s)	18.0	18.0		18.0	18.0		35.5	35.5	35.5	35.5	35.5	
90th %ile Term Code	Ped	Ped		Ped	Ped		Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	8.4	8.4		8.4	8.4		45.1	45.1	45.1	45.1	45.1	
70th %ile Term Code	Gap	Gap		Gap	Gap		Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	7.0	7.0		7.0	7.0		46.5	46.5	46.5	46.5	46.5	
50th %ile Term Code	Min	Min		Min	Min		Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	7.0	7.0		7.0	7.0		46.5	46.5	46.5	46.5	46.5	
30th %ile Term Code	Min	Min		Min	Min		Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		59.5	59.5	59.5	59.5	59.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord	Coord	Coord	Coord	
Stops (vph)		34			20		9	280	5	4	504	
Fuel Used(gal)		1			0		0	6	0	0	8	
CO Emissions (g/hr)		54			21		17	419	10	4	575	
NOx Emissions (g/hr)		11			4		3	81	2	1	112	
VOC Emissions (g/hr)		13			5		4	97	2	1	133	
Dilemma Vehicles (#)		0			0		0	0	0	0	0	

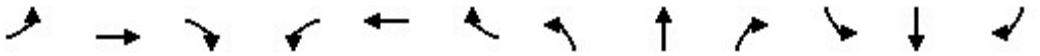
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		12			10		2	46	1	1	282	
Queue Length 95th (ft)		41			22		19	265	m9	m4	#760	
Internal Link Dist (ft)		469			377			636			284	
Turn Bay Length (ft)							150		100	100		
Base Capacity (vph)		459			419		175	1264	760	390	1315	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.20			0.10		0.19	0.60	0.03	0.03	0.81	

Intersection Summary

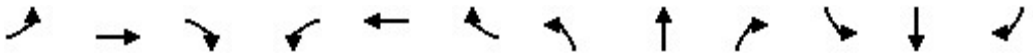
Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 19 (29%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Rainier Ave S & S Holly St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	83	128	25	92	33	84	552	25	13	922	71
Future Volume (vph)	77	83	128	25	92	33	84	552	25	13	922	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Storage Length (ft)	0		0	0		0	150		100	55		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98				0.90		0.99	
Frt		0.940			0.970				0.850		0.989	
Flt Protected		0.987			0.992		0.950			0.950		
Satd. Flow (prot)	0	1645	0	0	1750	0	1652	1739	1179	1770	1759	0
Flt Permitted		0.779			0.863		0.053			0.329		
Satd. Flow (perm)	0	1290	0	0	1517	0	92	1739	1064	613	1759	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		31			11						5	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		874			647			378			248	
Travel Time (s)		23.8			17.6			8.6			5.6	
Confl. Peds. (#/hr)	13		21	21		13	21		17	17		21
Confl. Bikes (#/hr)			1			2						
Peak Hour Factor	0.84	0.84	0.84	0.80	0.80	0.80	0.93	0.93	0.93	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	37%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	92	99	152	31	115	41	90	594	27	14	1002	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	343	0	0	187	0	90	594	27	14	1079	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.00	1.05	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			6		2	2		
Detector Phase	4	4		4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		10.0	19.0	19.0	10.0	17.0	
Total Split (s)	41.0	41.0		41.0	41.0		12.0	79.0	79.0	10.0	77.0	
Total Split (%)	31.5%	31.5%		31.5%	31.5%		9.2%	60.8%	60.8%	7.7%	59.2%	
Maximum Green (s)	36.5	36.5		36.5	36.5		7.5	74.5	74.5	5.5	72.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0	2.0	3.0	2.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0			7.0	7.0		5.0	
Pedestrian Calls (#/hr)	21	21		21	21			17	17		21	
Act Effct Green (s)		34.3			34.3		82.2	82.7	82.7	84.9	75.0	
Actuated g/C Ratio		0.26			0.26		0.63	0.64	0.64	0.65	0.58	
v/c Ratio		0.94			0.46		0.62	0.54	0.04	0.03	1.06	
Control Delay		77.9			41.0		45.6	17.8	12.8	6.7	68.0	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		77.9			41.0		45.6	17.8	12.8	6.7	68.0	
LOS		E			D		D	B	B	A	E	
Approach Delay		77.9			41.0			21.1			67.2	
Approach LOS		E			D			C			E	
90th %ile Green (s)	36.5	36.5		36.5	36.5		7.5	74.5	74.5	5.5	72.5	
90th %ile Term Code	Max	Max		Max	Max		Max	Coord	Coord	Max	Coord	
70th %ile Green (s)	36.5	36.5		36.5	36.5		7.5	74.5	74.5	5.5	72.5	
70th %ile Term Code	Max	Max		Max	Max		Max	Coord	Coord	Max	Coord	
50th %ile Green (s)	36.5	36.5		36.5	36.5		7.5	84.5	84.5	0.0	72.5	
50th %ile Term Code	Max	Max		Max	Max		Max	Coord	Coord	Skip	Coord	
30th %ile Green (s)	35.0	35.0		35.0	35.0		7.3	86.0	86.0	0.0	74.2	
30th %ile Term Code	Gap	Gap		Gap	Gap		Gap	Coord	Coord	Skip	Coord	
10th %ile Green (s)	27.0	27.0		27.0	27.0		6.1	94.0	94.0	0.0	83.4	
10th %ile Term Code	Gap	Gap		Gap	Gap		Gap	Coord	Coord	Skip	Coord	
Stops (vph)		239			116		64	335	10	5	809	
Fuel Used(gal)		8			3		1	5	0	0	20	
CO Emissions (g/hr)		533			177		97	383	14	5	1408	
NOx Emissions (g/hr)		104			34		19	74	3	1	274	
VOC Emissions (g/hr)		124			41		22	89	3	1	326	
Dilemma Vehicles (#)		0			0		0	0	0	0	0	

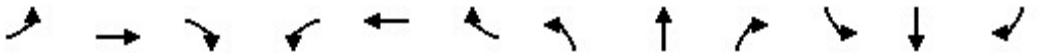
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		257			122		28	259	6	4	~1046	
Queue Length 95th (ft)		#385			168		#101	554	m16	m6	#1283	
Internal Link Dist (ft)		794			567			298			168	
Turn Bay Length (ft)							150		100	55		
Base Capacity (vph)		384			433		148	1106	676	449	1017	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.89			0.43		0.61	0.54	0.04	0.03	1.06	

Intersection Summary

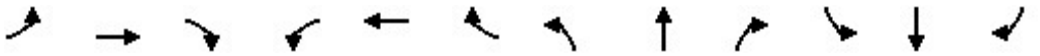
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 52.7 Intersection LOS: D
Intersection Capacity Utilization 96.4% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Rainier Ave S & S Othello St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	70	136	21	76	32	83	528	19	17	806	53
Future Volume (vph)	71	70	136	21	76	32	83	528	19	17	806	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	14	10	12	12
Storage Length (ft)	0		0	0		0	100		100	150		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98				0.89		1.00	
Frt		0.934			0.966				0.850		0.991	
Flt Protected		0.987			0.992		0.950			0.950		
Satd. Flow (prot)	0	1656	0	0	1764	0	1752	1722	1156	1652	1773	0
Flt Permitted		0.797			0.863		0.129			0.332		
Satd. Flow (perm)	0	1331	0	0	1527	0	238	1722	1027	577	1773	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		36			12						4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		749			694			235			435	
Travel Time (s)		17.0			15.8			5.3			9.9	
Confl. Peds. (#/hr)	10		25	25		10	11		23	23		11
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.88	0.88	0.88	0.78	0.78	0.78	0.86	0.86	0.86	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	49%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	81	80	155	27	97	41	97	614	22	18	857	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	165	0	97	614	22	18	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	0.92	1.09	1.05	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			2		6	6		
Detector Phase	8	8		4	4		1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	27.0	27.0		28.0	28.0		10.0	21.0	21.0	10.0	22.0	
Total Split (s)	39.0	39.0		39.0	39.0		13.0	81.0	81.0	10.0	78.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		10.0%	62.3%	62.3%	7.7%	60.0%	
Maximum Green (s)	34.5	34.5		34.5	34.5		8.5	76.5	76.5	5.5	73.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	15.0	15.0		16.0	16.0			9.0	9.0		10.0	
Pedestrian Calls (#/hr)	25	25		10	10			23	23		11	
Act Effct Green (s)		30.6			30.6		85.9	86.5	86.5	88.6	79.1	
Actuated g/C Ratio		0.24			0.24		0.66	0.67	0.67	0.68	0.61	
v/c Ratio		0.93			0.45		0.41	0.54	0.03	0.04	0.85	
Control Delay		76.6			42.5		13.8	16.2	12.2	5.3	23.5	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		76.6			42.5		13.8	16.2	12.2	5.3	23.5	
LOS		E			D		B	B	B	A	C	
Approach Delay		76.6			42.5			15.8			23.2	
Approach LOS		E			D			B			C	
90th %ile Green (s)	34.5	34.5		34.5	34.5		8.5	76.5	76.5	5.5	73.5	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Coord	Coord	Max	Coord	
70th %ile Green (s)	34.5	34.5		34.5	34.5		7.8	76.7	76.7	5.3	74.2	
70th %ile Term Code	Max	Max		Hold	Hold		Gap	Coord	Coord	Gap	Coord	
50th %ile Green (s)	33.2	33.2		33.2	33.2		6.9	87.8	87.8	0.0	76.4	
50th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Coord	Coord	Skip	Coord	
30th %ile Green (s)	28.7	28.7		28.7	28.7		6.0	92.3	92.3	0.0	81.8	
30th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Coord	Coord	Skip	Coord	
10th %ile Green (s)	21.9	21.9		21.9	21.9		5.0	99.1	99.1	0.0	89.6	
10th %ile Term Code	Gap	Gap		Hold	Hold		Min	Coord	Coord	Skip	Coord	
Stops (vph)		231			99		33	276	9	5	459	
Fuel Used(gal)		7			2		1	4	0	0	13	
CO Emissions (g/hr)		506			165		40	296	9	12	906	
NOx Emissions (g/hr)		98			32		8	58	2	2	176	
VOC Emissions (g/hr)		117			38		9	69	2	3	210	
Dilemma Vehicles (#)		0			0		0	0	0	0	0	

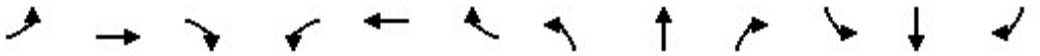
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		230			108		30	224	6	4	350	
Queue Length 95th (ft)		#370			146		58	335	m17	m6	#959	
Internal Link Dist (ft)		669			614			155			355	
Turn Bay Length (ft)							100		100	150		
Base Capacity (vph)		379			414		259	1145	683	439	1080	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.83			0.40		0.37	0.54	0.03	0.04	0.85	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Rainier Ave S & S Graham St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	10	0	0	10	10	621	9	10	866	10
Future Volume (vph)	0	0	10	0	0	10	10	621	9	10	866	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	10	12	12
Storage Length (ft)	0		0	0		0	50		100	100		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			30		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.95		1.00		0.98	1.00	1.00	
Frt		0.865			0.865				0.850		0.998	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	1602	0	0	1558	0	1620	1705	808	1636	1774	0
Flt Permitted							0.278			0.373		
Satd. Flow (perm)	0	1602	0	0	1558	0	473	1705	788	641	1774	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		138			514						2	
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		531			399			141			301	
Travel Time (s)		14.5			10.9			3.2			8.2	
Confl. Peds. (#/hr)	1		3	3		1	17		4	4		17
Confl. Bikes (#/hr)									2			1
Peak Hour Factor	0.45	0.45	0.45	0.50	0.50	0.50	0.89	0.89	0.89	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	4%	100%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	0	0	22	0	0	20	11	698	10	10	893	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	20	0	11	698	10	10	903	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.05	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA			NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4					2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0					7.0	7.0	7.0	1.0	1.0	
Minimum Split (s)	22.0	22.0					16.5	16.5	16.5	10.5	10.5	
Total Split (s)	22.0	22.0					43.0	43.0	43.0	43.0	43.0	
Total Split (%)	33.8%	33.8%					66.2%	66.2%	66.2%	66.2%	66.2%	
Maximum Green (s)	19.0	19.0					38.5	38.5	38.5	38.5	38.5	
Yellow Time (s)	3.0	3.0					3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	0.0					1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		3.0					4.5	4.5	4.5	4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2					0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None					C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0										
Flash Dont Walk (s)	12.0	12.0										
Pedestrian Calls (#/hr)	3	3										
Act Effct Green (s)		9.4			0.0		56.8	56.8	56.8	56.8	56.8	
Actuated g/C Ratio		0.14			0.00		0.87	0.87	0.87	0.87	0.87	
v/c Ratio		0.06			0.04		0.03	0.47	0.01	0.02	0.58	
Control Delay		0.3			0.1		1.6	1.8	1.6	2.7	4.9	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		0.3			0.1		1.6	1.8	1.6	2.7	4.9	
LOS		A			A		A	A	A	A	A	
Approach Delay		0.3			0.1			1.8			4.9	
Approach LOS		A			A			A			A	
90th %ile Green (s)	19.0	19.0					38.5	38.5	38.5	38.5	38.5	
90th %ile Term Code	Ped	Ped					Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	7.0	7.0					50.5	50.5	50.5	50.5	50.5	
70th %ile Term Code	Min	Min					Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	0.0	0.0					60.5	60.5	60.5	60.5	60.5	
50th %ile Term Code	Skip	Skip					Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	0.0	0.0					60.5	60.5	60.5	60.5	60.5	
30th %ile Term Code	Skip	Skip					Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	0.0	0.0					60.5	60.5	60.5	60.5	60.5	
10th %ile Term Code	Skip	Skip					Coord	Coord	Coord	Coord	Coord	
Stops (vph)		0			0		1	28	1	2	172	
Fuel Used(gal)		0			0		0	1	0	0	4	
CO Emissions (g/hr)		3			2		1	75	1	3	264	
NOx Emissions (g/hr)		1			0		0	15	0	1	51	
VOC Emissions (g/hr)		1			1		0	17	0	1	61	
Dilemma Vehicles (#)		0			0		0	0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		0			0		0	0	0	0	0	
Queue Length 95th (ft)		0			0		m1	37	m1	m3	426	
Internal Link Dist (ft)		451			319			61			221	
Turn Bay Length (ft)							50		100	100		
Base Capacity (vph)		565			514		413	1490	688	560	1550	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.04			0.04		0.03	0.47	0.01	0.02	0.58	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 41 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 3.4		Intersection LOS: A	
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 32: Rainier Ave S & S Kenny St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1007	12	10	609	10	10
Future Volume (vph)	1007	12	10	609	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998				0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	3567	0	0	1843	1728	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	3567	0	0	1843	1728	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	302			261	303	
Travel Time (s)	6.9			5.9	6.9	
Confl. Peds. (#/hr)		25	25			
Peak Hour Factor	0.92	0.92	0.96	0.96	0.53	0.53
Heavy Vehicles (%)	1%	1%	3%	3%	0%	0%
Adj. Flow (vph)	1095	13	10	634	19	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1108	0	0	644	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

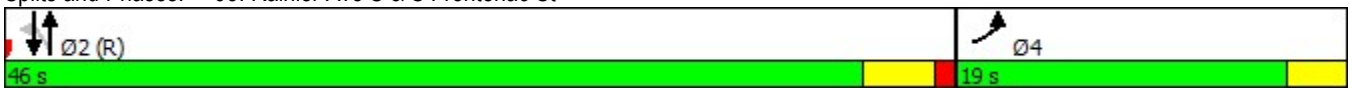
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	0	675	1005	0
Future Volume (vph)	0	10	0	675	1005	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	12	12
Storage Length (ft)	0	0	100			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1611	0	1801	1801	1863	0
Flt Permitted						
Satd. Flow (perm)	1611	0	1801	1801	1863	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	113					
Link Speed (mph)	30			30	30	
Link Distance (ft)	265			329	361	
Travel Time (s)	6.0			7.5	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	11	0	734	1092	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	734	1092	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	2	

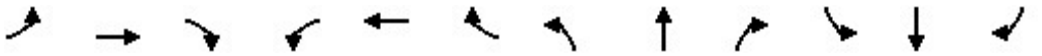
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases			2			
Detector Phase	4		2	2	2	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	19.0		12.0	12.0	12.0	
Total Split (s)	19.0		46.0	46.0	46.0	
Total Split (%)	29.2%		70.8%	70.8%	70.8%	
Maximum Green (s)	16.0		41.5	41.5	41.5	
Yellow Time (s)	3.0		3.5	3.5	3.5	
All-Red Time (s)	0.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	3.0		4.5	4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		0.2	0.2	0.2	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0					
Flash Dont Walk (s)	9.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	7.0			62.1	62.1	
Actuated g/C Ratio	0.11			0.96	0.96	
v/c Ratio	0.04			0.43	0.61	
Control Delay	0.3			1.6	1.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	0.3			1.6	1.9	
LOS	A			A	A	
Approach Delay	0.3			1.6	1.9	
Approach LOS	A			A	A	
90th %ile Green (s)	7.0		50.5	50.5	50.5	
90th %ile Term Code	Min		Coord	Coord	Coord	
70th %ile Green (s)	0.0		60.5	60.5	60.5	
70th %ile Term Code	Skip		Coord	Coord	Coord	
50th %ile Green (s)	0.0		60.5	60.5	60.5	
50th %ile Term Code	Skip		Coord	Coord	Coord	
30th %ile Green (s)	0.0		60.5	60.5	60.5	
30th %ile Term Code	Skip		Coord	Coord	Coord	
10th %ile Green (s)	0.0		60.5	60.5	60.5	
10th %ile Term Code	Skip		Coord	Coord	Coord	
Stops (vph)	0			48	45	
Fuel Used(gal)	0			2	3	
CO Emissions (g/hr)	1			155	242	
NOx Emissions (g/hr)	0			30	47	
VOC Emissions (g/hr)	0			36	56	
Dilemma Vehicles (#)	0			0	0	
Queue Length 50th (ft)	0			0	0	
Queue Length 95th (ft)	0			m162	60	
Internal Link Dist (ft)	185			249	281	
Turn Bay Length (ft)						
Base Capacity (vph)	481			1721	1780	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.02			0.43	0.61	

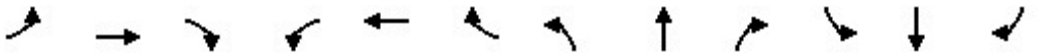
Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 51 (78%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 98: Rainier Ave S & S Frontenac St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	978	10	10	590	19	0	0	41	0	0	10
Future Volume (vph)	10	978	10	10	590	19	0	0	41	0	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00				0.98			
Frt		0.998			0.995				0.865			0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	3531	0	1770	3518	0	0	0	1644	0	0	1644
Flt Permitted	0.411			0.258								
Satd. Flow (perm)	762	3531	0	479	3518	0	0	0	1617	0	0	1644
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			8				478			226
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		318			302			586			351	
Travel Time (s)		7.2			6.9			13.3			8.0	
Confl. Peds. (#/hr)	13		15	15		13			14	14		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	11	1063	11	10	615	20	0	0	52	0	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1074	0	10	635	0	0	0	52	0	0	13
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2				1			1
Detector Template	Left	Thru		Left	Thru				Right			Right
Leading Detector (ft)	20	100		20	100				20			20
Trailing Detector (ft)	0	0		0	0				0			0
Detector 1 Position(ft)	0	0		0	0				0			0
Detector 1 Size(ft)	20	6		20	6				20			20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0			0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0			0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0			0.0
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA				Free			Perm
Protected Phases		2			2							
Permitted Phases	2			2					Free			4
Detector Phase	2	2		2	2							4
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0							7.0
Minimum Split (s)	12.0	12.0		12.0	12.0							26.0
Total Split (s)	39.0	39.0		39.0	39.0							26.0
Total Split (%)	60.0%	60.0%		60.0%	60.0%							40.0%
Maximum Green (s)	34.5	34.5		34.5	34.5							23.0
Yellow Time (s)	3.5	3.5		3.5	3.5							3.0
All-Red Time (s)	1.0	1.0		1.0	1.0							0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0							0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5							3.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2							0.2
Recall Mode	C-Max	C-Max		C-Max	C-Max							None
Walk Time (s)												7.0
Flash Dont Walk (s)												16.0
Pedestrian Calls (#/hr)												14
Act Effct Green (s)	56.0	56.0		56.0	56.0				65.0			10.2
Actuated g/C Ratio	0.86	0.86		0.86	0.86				1.00			0.16
v/c Ratio	0.02	0.35		0.02	0.21				0.03			0.03
Control Delay	2.3	1.9		2.4	1.4				0.0			0.1
Queue Delay	0.0	0.0		0.0	0.0				0.0			0.0
Total Delay	2.3	1.9		2.4	1.4				0.0			0.1
LOS	A	A		A	A				A			A
Approach Delay		1.9			1.5						0.1	
Approach LOS		A			A						A	
90th %ile Green (s)	34.5	34.5		34.5	34.5							23.0
90th %ile Term Code	Coord	Coord		Coord	Coord							Ped
70th %ile Green (s)	50.5	50.5		50.5	50.5							7.0
70th %ile Term Code	Coord	Coord		Coord	Coord							Min
50th %ile Green (s)	60.5	60.5		60.5	60.5							0.0
50th %ile Term Code	Coord	Coord		Coord	Coord							Skip
30th %ile Green (s)	60.5	60.5		60.5	60.5							0.0
30th %ile Term Code	Coord	Coord		Coord	Coord							Skip
10th %ile Green (s)	60.5	60.5		60.5	60.5							0.0
10th %ile Term Code	Coord	Coord		Coord	Coord							Skip
Stops (vph)	1	129		1	50				0			0
Fuel Used(gal)	0	4		0	2				0			0
CO Emissions (g/hr)	2	248		2	132				13			2
NOx Emissions (g/hr)	0	48		0	26				3			0
VOC Emissions (g/hr)	1	57		1	31				3			0
Dilemma Vehicles (#)	0	0		0	0				0			0
Queue Length 50th (ft)	0	0		0	0				0			0
Queue Length 95th (ft)	m2	116		m3	46				0			0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		238			222			506			271	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	656	3042		413	3032				1617			727
Starvation Cap Reductn	0	0		0	0				0			0
Spillback Cap Reductn	0	0		0	0				0			0
Storage Cap Reductn	0	0		0	0				0			0
Reduced v/c Ratio	0.02	0.35		0.02	0.21				0.03			0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 26 (40%), Referenced to phase 2:EBWB, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 1.7		Intersection LOS: A	
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 100: 52nd Ave S & Rainier Ave S

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	10	676	10	10	1127
Future Volume (vph)	10	10	676	10	10	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.932		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1728	0	3498	0	1770	3539
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1728	0	3498	0	1770	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	456		183			510
Travel Time (s)	10.4		4.2			11.6
Confl. Peds. (#/hr)		1		46	46	
Peak Hour Factor	0.56	0.56	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	0%	0%	3%	3%	2%	2%
Adj. Flow (vph)	18	18	751	11	11	1186
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	762	0	11	1186
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	970	36	10	590	30	28
Future Volume (vph)	970	36	10	590	30	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.935	
Flt Protected			0.950		0.975	
Satd. Flow (prot)	3556	0	1770	3539	1732	0
Flt Permitted			0.950		0.975	
Satd. Flow (perm)	3556	0	1770	3539	1732	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	284			318	497	
Travel Time (s)	6.5			7.2	11.3	
Confl. Peds. (#/hr)		13	13		5	1
Peak Hour Factor	0.96	0.96	0.97	0.97	0.68	0.68
Heavy Vehicles (%)	1%	1%	2%	2%	0%	0%
Adj. Flow (vph)	1010	38	10	608	44	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1048	0	10	608	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	991	26	10	609	10	18
Future Volume (vph)	991	26	10	609	10	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996				0.913	
Flt Protected				0.999	0.983	
Satd. Flow (prot)	3560	0	0	1843	1705	0
Flt Permitted				0.999	0.983	
Satd. Flow (perm)	3560	0	0	1843	1705	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	261			384	325	
Travel Time (s)	5.9			8.7	7.4	
Confl. Peds. (#/hr)		22	22			
Peak Hour Factor	0.95	0.95	0.92	0.92	0.63	0.63
Heavy Vehicles (%)	1%	1%	3%	3%	0%	0%
Adj. Flow (vph)	1043	27	11	662	16	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1070	0	0	673	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D2

Rainier Ave S Phase 2 Alternative 2 Operating Plan for Alternative 2

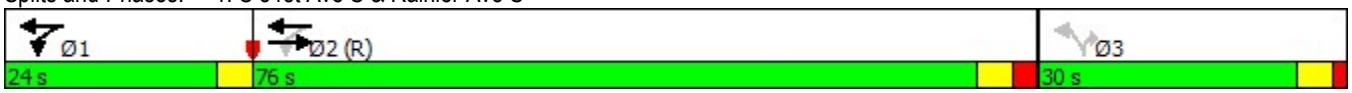
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	856	230	151	469	145	150
Future Volume (vph)	856	230	151	469	145	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	12	12
Storage Length (ft)		0	120		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	0.98				0.99	0.98
Frt	0.968					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3206	0	1652	3303	1770	1583
Flt Permitted			0.209		0.950	
Satd. Flow (perm)	3206	0	363	3303	1749	1558
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	40					170
Link Speed (mph)	25			25	30	
Link Distance (ft)	479			284	305	
Travel Time (s)	13.1			7.7	6.9	
Confl. Peds. (#/hr)		17	17		6	2
Peak Hour Factor	0.96	0.96	0.92	0.92	0.88	0.88
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%
Adj. Flow (vph)	892	240	164	510	165	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1132	0	164	510	165	170
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.09	1.09	1.09	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						

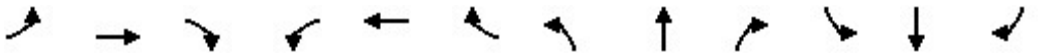
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		D.P+P	NA	Perm	Perm
Protected Phases	2		1	1 2		
Permitted Phases			2		3	3
Detector Phase	2		1	1 2	3	3
Switch Phase						
Minimum Initial (s)	7.0		5.0		7.0	7.0
Minimum Split (s)	24.0		9.0		25.0	25.0
Total Split (s)	76.0		24.0		30.0	30.0
Total Split (%)	58.5%		18.5%		23.1%	23.1%
Maximum Green (s)	70.0		20.5		25.0	25.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	2.5		0.0		1.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0		3.5		5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		2.0		2.0	2.0
Recall Mode	C-Max		None		None	None
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	11.0				13.0	13.0
Pedestrian Calls (#/hr)	17				6	6
Act Effct Green (s)	88.2		101.4	104.9	16.6	16.6
Actuated g/C Ratio	0.68		0.78	0.81	0.13	0.13
v/c Ratio	0.52		0.42	0.19	0.74	0.49
Control Delay	5.6		7.8	3.9	73.5	11.8
Queue Delay	0.3		0.0	0.0	0.0	0.0
Total Delay	5.9		7.8	3.9	73.5	11.8
LOS	A		A	A	E	B
Approach Delay	5.9			4.9	42.2	
Approach LOS	A			A	D	
90th %ile Green (s)	77.2		15.3		23.0	23.0
90th %ile Term Code	Coord		Gap		Gap	Gap
70th %ile Green (s)	84.0		12.3		19.2	19.2
70th %ile Term Code	Coord		Gap		Gap	Gap
50th %ile Green (s)	88.9		10.0		16.6	16.6
50th %ile Term Code	Coord		Gap		Gap	Gap
30th %ile Green (s)	92.5		9.0		14.0	14.0
30th %ile Term Code	Coord		Gap		Gap	Gap
10th %ile Green (s)	98.6		6.7		10.2	10.2
10th %ile Term Code	Coord		Gap		Gap	Gap
Stops (vph)	428		60	163	136	19
Fuel Used(gal)	7		1	2	3	1
CO Emissions (g/hr)	512		58	149	228	57
NOx Emissions (g/hr)	100		11	29	44	11
VOC Emissions (g/hr)	119		14	35	53	13
Dilemma Vehicles (#)	0		0	0	0	0
Queue Length 50th (ft)	104		36	73	136	0
Queue Length 95th (ft)	323		58	89	198	58

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	399			204	225	
Turn Bay Length (ft)			120			
Base Capacity (vph)	2189		496	2665	336	436
Starvation Cap Reductn	397		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.63		0.33	0.19	0.49	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 50 (38%), Referenced to phase 2:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 60.8%		ICU Level of Service B	
Analysis Period (min) 15			

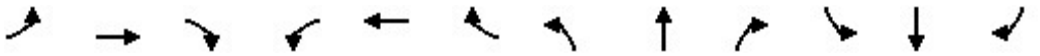
Splits and Phases: 1: S 51st Ave S & Rainier Ave S





Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	96	216	41	94	65	128	525	33	89	880	130
Future Volume (vph)	96	96	216	41	94	65	128	525	33	89	880	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	11	10	10
Storage Length (ft)	250			175		0	200		0			45
Storage Lanes	1			1		0	1		0			0
Taper Length (ft)	25			25			25					
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.81	0.88		0.89	0.89			0.99			0.99	
Frt		0.896			0.939			0.991			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1678	2641	0	1711	2868	0	1636	1693	0	1711	1689	0
Flt Permitted	0.950			0.950			0.054			0.263		
Satd. Flow (perm)	1356	2641	0	1530	2868	0	93	1693	0	474	1689	0
Right Turn on Red			Yes			Yes						Yes
Satd. Flow (RTOR)		219			76						9	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		945			903			270			1047	
Travel Time (s)		25.8			24.6			7.4			28.6	
Confl. Peds. (#/hr)	65		77	77		65	34		55	55		34
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.93	0.93	0.93	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	101	101	227	48	111	76	138	565	35	91	898	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	328	0	48	187	0	138	600	0	91	1031	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	NWR
Lane Configurations	
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	822
Flt Permitted	
Satd. Flow (perm)	822
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.92
Heavy Vehicles (%)	100%
Adj. Flow (vph)	8
Shared Lane Traffic (%)	
Lane Group Flow (vph)	8
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	7.0		5.0	7.0	
Minimum Split (s)	11.0	25.0		11.0	24.0		11.0	25.0		11.0	27.0	
Total Split (s)	20.0	25.0		15.0	20.0		14.0	64.0		16.0	76.0	
Total Split (%)	15.4%	19.2%		11.5%	15.4%		10.8%	49.2%		12.3%	58.5%	
Maximum Green (s)	14.5	19.5		9.5	14.5		8.5	58.5		10.5	70.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	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	
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag			Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			10.0			11.0			13.0	
Pedestrian Calls (#/hr)		77			65			55			34	
Act Effct Green (s)	12.2	19.1		8.2	12.9		82.9	70.4		80.9	74.6	
Actuated g/C Ratio	0.09	0.15		0.06	0.10		0.64	0.54		0.62	0.57	
v/c Ratio	0.64	0.57		0.44	0.53		0.88	0.66		0.23	1.06	
Control Delay	74.9	21.4		71.2	37.9		75.8	33.6		13.4	67.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.0	
Total Delay	74.9	21.4		71.2	37.9		75.8	33.8		13.4	67.2	
LOS	E	C		E	D		E	C		B	E	
Approach Delay		34.0			44.7			41.6			62.8	
Approach LOS		C			D			D			E	
90th %ile Green (s)	14.5	19.5		9.5	14.5		8.5	58.5		10.5	70.5	
90th %ile Term Code	Max	Hold		Max	Ped		Max	Coord		Hold	Coord	
70th %ile Green (s)	14.5	19.5		9.5	14.5		8.5	68.5		10.5	70.5	
70th %ile Term Code	Max	Hold		Max	Ped		Max	Coord		Hold	Coord	
50th %ile Green (s)	13.1	18.6		9.0	14.5		8.5	69.9		10.5	71.9	
50th %ile Term Code	Gap	Hold		Gap	Ped		Max	Coord		Hold	Coord	
30th %ile Green (s)	11.0	18.0		7.6	14.6		8.5	71.9		10.5	73.9	
30th %ile Term Code	Gap	Ped		Gap	Hold		Max	Coord		Hold	Coord	
10th %ile Green (s)	8.0	19.8		0.0	6.3		7.5	83.2		10.5	86.2	
10th %ile Term Code	Gap	Hold		Skip	Gap		Gap	Coord		Hold	Coord	
Stops (vph)	92	100		38	88		104	407		34	750	
Fuel Used(gal)	3	4		1	3		3	8		1	26	
CO Emissions (g/hr)	181	297		74	195		205	546		82	1796	
NOx Emissions (g/hr)	35	58		14	38		40	106		16	349	
VOC Emissions (g/hr)	42	69		17	45		47	126		19	416	
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	
Queue Length 50th (ft)	83	43		39	46		77	363		25	~971	
Queue Length 95th (ft)	143	94		77	78		#190	522		m50	#1255	

Lane Group	NWR
Detector 2 Extend (s)	
Turn Type	custom
Protected Phases	9
Permitted Phases	2
Detector Phase	9
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	8.0
Total Split (s)	10.0
Total Split (%)	7.7%
Maximum Green (s)	6.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	73.9
Actuated g/C Ratio	0.57
v/c Ratio	0.02
Control Delay	14.1
Queue Delay	0.0
Total Delay	14.1
LOS	B
Approach Delay	
Approach LOS	
90th %ile Green (s)	6.0
90th %ile Term Code	Max
70th %ile Green (s)	0.0
70th %ile Term Code	Skip
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Stops (vph)	4
Fuel Used(gal)	0
CO Emissions (g/hr)	4
NOx Emissions (g/hr)	1
VOC Emissions (g/hr)	1
Dilemma Vehicles (#)	0
Queue Length 50th (ft)	3
Queue Length 95th (ft)	11

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBT	SBR
Internal Link Dist (ft)		865			823			190			967	
Turn Bay Length (ft)	250			175			200			160		
Base Capacity (vph)	187	583		125	387		160	916		394	973	
Starvation Cap Reductn	0	0		0	0		0	28		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.56		0.38	0.48		0.86	0.68		0.23	1.06	

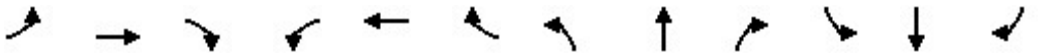
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115.5 (89%), Referenced to phase 2:NBT and 6:NBSB, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 49.9 Intersection LOS: D
Intersection Capacity Utilization 99.0% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

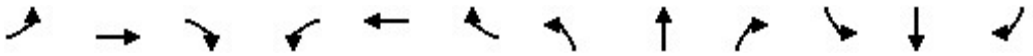
Splits and Phases: 2: Rainier Ave S & BUS QJ & S Henderson St

Lane Group	NWR
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	467
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.02

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	961	15	10	564	251	0	0	10	484	42	55
Future Volume (vph)	33	961	15	10	564	251	0	0	10	484	42	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	70		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		1.00			0.99						0.99	
Frt		0.998			0.954				0.865		0.972	
Flt Protected		0.998			0.999					0.950	0.968	
Satd. Flow (prot)	0	3286	0	0	3142	0	0	0	1644	1681	1646	0
Flt Permitted		0.882			0.937					0.950	0.968	
Satd. Flow (perm)	0	2904	0	0	2947	0	0	0	1644	1681	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			94				98		9	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		194			308			306			664	
Travel Time (s)		5.3			8.4			8.3			15.1	
Confl. Peds. (#/hr)	6		19	19		6	21					21
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.71	0.71	0.71	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Adj. Flow (vph)	36	1045	16	11	641	285	0	0	14	494	43	56
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	0	1097	0	0	937	0	0	0	14	296	297	0
Enter Blocked Intersection	1 veh	2 veh	1 veh	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2				1	1	2	
Detector Template	Left	Thru		Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100		20	100				20	20	100	
Trailing Detector (ft)	0	0		0	0				0	0	0	
Detector 1 Position(ft)	0	0		0	0				0	0	0	
Detector 1 Size(ft)	20	6		20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Perm	NA		Perm	NA				Perm	Perm	NA	
Protected Phases		2			2						4	
Permitted Phases	2			2					4	4		
Detector Phase	2	2		2	2				4	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	27.0	27.0		27.0	27.0				23.0	23.0	23.0	
Total Split (s)	83.0	83.0		83.0	83.0				47.0	47.0	47.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%				36.2%	36.2%	36.2%	
Maximum Green (s)	77.5	77.5		77.5	77.5				41.5	41.5	41.5	
Yellow Time (s)	3.5	3.5		3.5	3.5				3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0				2.5	2.5	2.5	
Lost Time Adjust (s)		0.0			0.0				0.0	0.0	0.0	
Total Lost Time (s)		5.5			5.5				5.5	5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2				3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max				None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0				10.0	10.0	10.0	
Pedestrian Calls (#/hr)	19	19		19	19				21	21	21	
Act Effct Green (s)		89.6			89.6				29.4	29.4	29.4	
Actuated g/C Ratio		0.69			0.69				0.23	0.23	0.23	
v/c Ratio		0.55			0.46				0.03	0.78	0.78	
Control Delay		7.5			9.0				0.1	60.8	59.7	
Queue Delay		0.0			0.5				0.0	0.0	0.0	
Total Delay		7.5			9.5				0.1	60.8	59.7	
LOS		A			A				A	E	E	
Approach Delay		7.5			9.5			0.1			60.3	
Approach LOS		A			A			A			E	
90th %ile Green (s)	79.7	79.7		79.7	79.7				39.3	39.3	39.3	
90th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
70th %ile Green (s)	85.3	85.3		85.3	85.3				33.7	33.7	33.7	
70th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
50th %ile Green (s)	89.8	89.8		89.8	89.8				29.2	29.2	29.2	
50th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
30th %ile Green (s)	93.5	93.5		93.5	93.5				25.5	25.5	25.5	
30th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
10th %ile Green (s)	99.6	99.6		99.6	99.6				19.4	19.4	19.4	
10th %ile Term Code	Coord	Coord		Coord	Coord				Gap	Gap	Gap	
Stops (vph)		510			305				0	264	260	
Fuel Used(gal)		8			5				0	7	6	
CO Emissions (g/hr)		592			339				2	458	453	
NOx Emissions (g/hr)		115			66				0	89	88	
VOC Emissions (g/hr)		137			79				0	106	105	
Dilemma Vehicles (#)		0			0				0	0	0	
Queue Length 50th (ft)		222			140				0	249	243	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		331			217				0	326	320	
Internal Link Dist (ft)		114			228			226			584	
Turn Bay Length (ft)										70		
Base Capacity (vph)		2001			2059				591	536	531	
Starvation Cap Reductn		0			639				0	0	0	
Spillback Cap Reductn		0			0				0	0	0	
Storage Cap Reductn		0			0				0	0	0	
Reduced v/c Ratio		0.55			0.66				0.02	0.55	0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 98.5 (76%), Referenced to phase 2:EBWB, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 20.0		Intersection LOS: C	
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: S 56th Ave S/Seward Park Ave S & Rainier Ave S

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	82	604	10	62	1075
Future Volume (vph)	11	82	604	10	62	1075
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.98		1.00		0.96	
Frt	0.881		0.997			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1620	0	3255	0	1652	3303
Flt Permitted	0.994				0.402	
Satd. Flow (perm)	1614	0	3255	0	673	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		4			
Link Speed (mph)	25		25			25
Link Distance (ft)	440		479			183
Travel Time (s)	12.0		13.1			5.0
Confl. Peds. (#/hr)	27	7		40	40	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.85	0.85	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%
Adj. Flow (vph)	13	96	643	11	66	1144
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	654	0	66	1144
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		10			10
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Detector 1 Position(ft)	0		0		0	0
Detector 1 Size(ft)	20		6		20	6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			6
Permitted Phases					6	
Detector Phase	4		2		6	6
Switch Phase						
Minimum Initial (s)	7.0		7.0		7.0	7.0
Minimum Split (s)	23.5		22.5		12.0	12.0
Total Split (s)	24.0		41.0		41.0	41.0
Total Split (%)	36.9%		63.1%		63.1%	63.1%
Maximum Green (s)	19.5		36.5		36.5	36.5
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		2.0	2.0
Recall Mode	None		C-Min		C-Min	C-Min
Walk Time (s)	7.0		7.0			
Flash Dont Walk (s)	12.0		6.0			
Pedestrian Calls (#/hr)	27		40			
Act Effct Green (s)	11.8		47.4		47.4	47.4
Actuated g/C Ratio	0.18		0.73		0.73	0.73
v/c Ratio	0.29		0.28		0.13	0.48
Control Delay	7.9		2.0		4.9	5.5
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	7.9		2.0		4.9	5.5
LOS	A		A		A	A
Approach Delay	7.9		2.0			5.5
Approach LOS	A		A			A
90th %ile Green (s)	19.0		37.0		37.0	37.0
90th %ile Term Code	Ped		Coord		Coord	Coord
70th %ile Green (s)	19.0		37.0		37.0	37.0
70th %ile Term Code	Ped		Coord		Coord	Coord
50th %ile Green (s)	7.0		49.0		49.0	49.0
50th %ile Term Code	Min		Coord		Coord	Coord
30th %ile Green (s)	7.0		49.0		49.0	49.0
30th %ile Term Code	Min		Coord		Coord	Coord
10th %ile Green (s)	0.0		60.5		60.5	60.5
10th %ile Term Code	Skip		Coord		Coord	Coord
Stops (vph)	21		96		21	380
Fuel Used(gal)	1		3		0	4
CO Emissions (g/hr)	40		218		17	303
NOx Emissions (g/hr)	8		42		3	59
VOC Emissions (g/hr)	9		51		4	70
Dilemma Vehicles (#)	0		0		0	0
Queue Length 50th (ft)	5		18		8	128

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (ft)	31		21		m21	m193
Internal Link Dist (ft)	360		399			103
Turn Bay Length (ft)					50	
Base Capacity (vph)	553		2374		491	2408
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		10		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.20		0.28		0.13	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 13.5 (21%), Referenced to phase 2:NBT and 6:SBTL, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 7: Rainier Ave S & S Fisher Pl

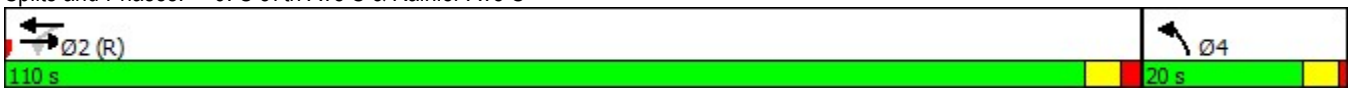
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1322	133	19	762	63	36
Future Volume (vph)	1322	133	19	762	63	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.97	0.95
Ped Bike Factor	0.99				0.99	
Frt	0.986				0.946	
Flt Protected				0.999	0.969	
Satd. Flow (prot)	3237	0	0	3333	3022	0
Flt Permitted				0.871	0.969	
Satd. Flow (perm)	3237	0	0	2906	3022	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	30				42	
Link Speed (mph)	25			25	30	
Link Distance (ft)	308			192	309	
Travel Time (s)	8.4			5.2	7.0	
Confl. Peds. (#/hr)		11	11			3
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.87	0.87	0.85	0.85
Heavy Vehicles (%)	2%	2%	1%	1%	3%	3%
Adj. Flow (vph)	1422	143	22	876	74	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1565	0	0	898	116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	20	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	

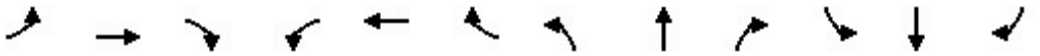
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	2			2	4	
Permitted Phases			2			
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	21.0		21.0	21.0	17.0	
Total Split (s)	110.0		110.0	110.0	20.0	
Total Split (%)	84.6%		84.6%	84.6%	15.4%	
Maximum Green (s)	104.5		104.5	104.5	15.5	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	2.0		2.0	2.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		0.2	0.2	3.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	8.0		8.0	8.0	5.0	
Pedestrian Calls (#/hr)	2		2	2	6	
Act Effct Green (s)	111.0			111.0	9.0	
Actuated g/C Ratio	0.85			0.85	0.07	
v/c Ratio	0.57			0.36	0.47	
Control Delay	2.4			2.5	42.8	
Queue Delay	0.4			0.0	0.0	
Total Delay	2.8			2.6	42.8	
LOS	A			A	D	
Approach Delay	2.8			2.6	42.8	
Approach LOS	A			A	D	
90th %ile Green (s)	108.0		108.0	108.0	12.0	
90th %ile Term Code	Coord		Coord	Coord	Ped	
70th %ile Green (s)	110.1		110.1	110.1	9.9	
70th %ile Term Code	Coord		Coord	Coord	Gap	
50th %ile Green (s)	111.4		111.4	111.4	8.6	
50th %ile Term Code	Coord		Coord	Coord	Gap	
30th %ile Green (s)	112.7		112.7	112.7	7.3	
30th %ile Term Code	Coord		Coord	Coord	Gap	
10th %ile Green (s)	113.0		113.0	113.0	7.0	
10th %ile Term Code	Coord		Coord	Coord	Min	
Stops (vph)	219			145	60	
Fuel Used(gal)	5			6	1	
CO Emissions (g/hr)	375			438	100	
NOx Emissions (g/hr)	73			85	19	
VOC Emissions (g/hr)	87			102	23	
Dilemma Vehicles (#)	0			0	0	
Queue Length 50th (ft)	122			60	31	
Queue Length 95th (ft)	66			90	57	
Internal Link Dist (ft)	228			112	229	
Turn Bay Length (ft)						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Base Capacity (vph)	2769			2482	397	
Starvation Cap Reductn	588			0	0	
Spillback Cap Reductn	0			57	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.72			0.37	0.29	

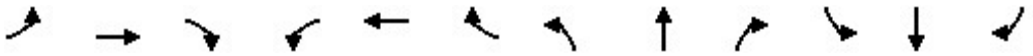
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 27.5 (21%), Referenced to phase 2:EBWB, Start of 1st Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: S 57th Ave S & Rainier Ave S





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	42	91	39	37	24	64	598	24	10	969	32
Future Volume (vph)	39	42	91	39	37	24	64	598	24	10	969	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	10	11	10	10	12	10
Storage Length (ft)	0		90	0		70	75		30	65		0
Storage Lanes	0		1	0		1	1		0	0		0
Taper Length (ft)	25			25			10			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.95		0.98	0.96	0.99	1.00			1.00	
Frt			0.850			0.850		0.994			0.996	
Flt Protected		0.976			0.975		0.950					
Satd. Flow (prot)	0	1836	1599	0	1739	1568	1636	1701	0	0	1785	0
Flt Permitted		0.794			0.794		0.284				0.993	
Satd. Flow (perm)	0	1478	1513	0	1394	1500	486	1701	0	0	1773	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			28		5			4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		444			481			1047			633	
Travel Time (s)		12.1			13.1			28.6			17.3	
Confl. Peds. (#/hr)	7		10	10		7	9		23	23		9
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.86	0.86	0.86	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	9	0	0	9	0
Adj. Flow (vph)	42	45	98	46	44	28	74	695	28	10	1009	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	98	0	90	28	74	723	0	0	1052	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.04	1.00	1.09	1.10	1.09	1.09	1.05	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



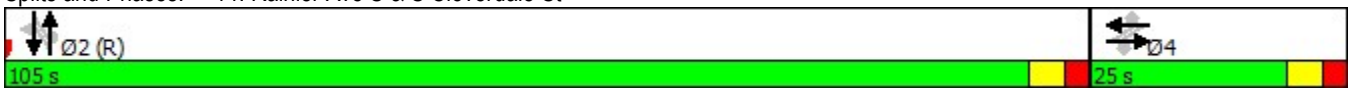
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4		4	2			2		
Detector Phase	4	4	4	4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	22.0	22.0		22.0	22.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	105.0	105.0		105.0	105.0	
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	80.8%	80.8%		80.8%	80.8%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	99.0	99.0		99.0	99.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		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	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.2	0.2		0.2	0.2	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0	9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	10	10	10	10	10	10	23	23		23	23	
Act Effct Green (s)		13.6	13.6		13.6	13.6	104.4	104.4			104.4	
Actuated g/C Ratio		0.10	0.10		0.10	0.10	0.80	0.80			0.80	
v/c Ratio		0.56	0.40		0.62	0.15	0.19	0.53			0.74	
Control Delay		68.7	14.4		73.3	18.7	1.8	2.4			5.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0			0.0	
Total Delay		68.7	14.4		73.3	18.7	1.8	2.4			5.9	
LOS		E	B		E	B	A	A			A	
Approach Delay		39.9			60.3			2.3			5.9	
Approach LOS		D			E			A			A	
90th %ile Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	99.0	99.0		99.0	99.0	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	102.0	102.0		102.0	102.0	
70th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.7	13.7	13.7	13.7	13.7	13.7	104.3	104.3		104.3	104.3	
50th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord		Coord	Coord	
30th %ile Green (s)	11.3	11.3	11.3	11.3	11.3	11.3	106.7	106.7		106.7	106.7	
30th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord		Coord	Coord	
10th %ile Green (s)	7.8	7.8	7.8	7.8	7.8	7.8	110.2	110.2		110.2	110.2	
10th %ile Term Code	Gap	Gap	Gap	Gap	Gap	Gap	Coord	Coord		Coord	Coord	
Stops (vph)		74	16		73	8	7	82			167	
Fuel Used(gal)		2	1		2	0	1	6			7	
CO Emissions (g/hr)		120	47		121	15	43	431			510	
NOx Emissions (g/hr)		23	9		23	3	8	84			99	
VOC Emissions (g/hr)		28	11		28	4	10	100			118	
Dilemma Vehicles (#)		0	0		0	0	0	0			0	

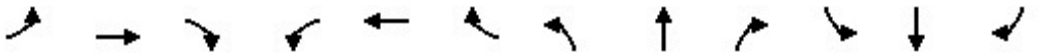
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		71	0		74	0	1	94			137	
Queue Length 95th (ft)		123	52		119	26	m10	112			153	
Internal Link Dist (ft)		364			401			967			553	
Turn Bay Length (ft)			90			70	75					
Base Capacity (vph)		216	304		203	243	390	1367			1425	
Starvation Cap Reductn		0	0		0	0	0	0			13	
Spillback Cap Reductn		0	0		0	0	0	0			0	
Storage Cap Reductn		0	0		0	0	0	0			0	
Reduced v/c Ratio		0.40	0.32		0.44	0.12	0.19	0.53			0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 105 (81%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 85.7%		ICU Level of Service E	
Analysis Period (min) 15			

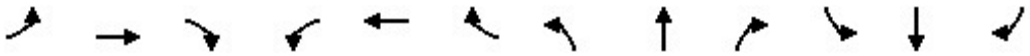
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Rainier Ave S & S Cloverdale St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	22	0	0	47	13	632	16	32	1004	29
Future Volume (vph)	0	0	22	0	0	47	13	632	16	32	1004	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	12	12	11
Storage Length (ft)	0		0	0		0	100		30	110		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			20			30		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.92			0.97		1.00	1.00		1.00	1.00	
Frt		0.865			0.865			0.996			0.996	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	1506	0	0	1551	0	1636	1775	0	1770	1787	0
Flt Permitted							0.204			0.345		
Satd. Flow (perm)	0	1506	0	0	1551	0	351	1775	0	640	1787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		173			300			3			4	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		459			255			444			436	
Travel Time (s)		12.5			7.0			12.1			9.9	
Confl. Peds. (#/hr)	2		21	21		2	13		22	22		13
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.87	0.87	0.87	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	0	0	28	0	0	55	15	726	18	34	1057	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	55	0	15	744	0	34	1088	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.04	1.04	1.00	1.05	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



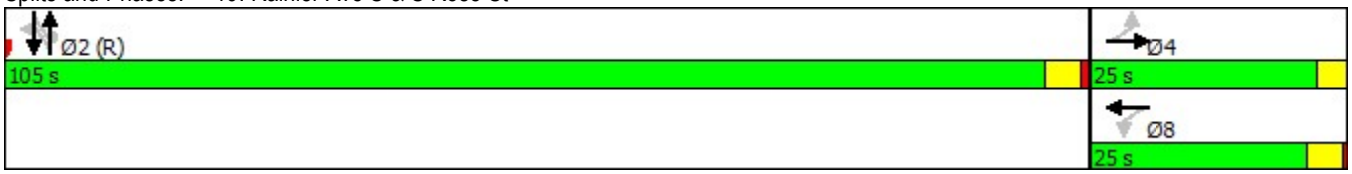
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			2	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		4.0	4.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0		20.0	20.0		12.0	12.0		12.0	12.0	
Total Split (s)	25.0	25.0		25.0	25.0		105.0	105.0		105.0	105.0	
Total Split (%)	19.2%	19.2%		19.2%	19.2%		80.8%	80.8%		80.8%	80.8%	
Maximum Green (s)	22.0	22.0		21.0	21.0		100.5	100.5		100.5	100.5	
Yellow Time (s)	3.0	3.0		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.0	0.0		0.5	0.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		3.0			4.0		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		5.0	5.0							
Flash Dont Walk (s)	14.0	14.0		11.0	11.0							
Pedestrian Calls (#/hr)	21	21		0	0							
Act Effct Green (s)		15.4			14.3		110.0	110.0		110.0	110.0	
Actuated g/C Ratio		0.12			0.11		0.85	0.85		0.85	0.85	
v/c Ratio		0.08			0.13		0.05	0.50		0.06	0.72	
Control Delay		0.5			0.6		4.8	6.6		0.4	2.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.1	
Total Delay		0.5			0.6		4.8	6.6		0.4	2.6	
LOS		A			A		A	A		A	A	
Approach Delay		0.5			0.6			6.6			2.5	
Approach LOS		A			A			A			A	
90th %ile Green (s)	21.0	21.0		20.0	20.0		101.5	101.5		101.5	101.5	
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	21.0	21.0		20.0	20.0		101.5	101.5		101.5	101.5	
70th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	21.0	21.0		20.0	20.0		101.5	101.5		101.5	101.5	
50th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	7.0	7.0		6.0	6.0		115.5	115.5		115.5	115.5	
30th %ile Term Code	Min	Min		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		125.5	125.5		125.5	125.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0			0		3	189		0	46	
Fuel Used(gal)		0			0		0	4		0	4	
CO Emissions (g/hr)		6			8		5	282		8	300	
NOx Emissions (g/hr)		1			1		1	55		2	58	
VOC Emissions (g/hr)		1			2		1	65		2	70	
Dilemma Vehicles (#)		0			0		0	0		0	0	

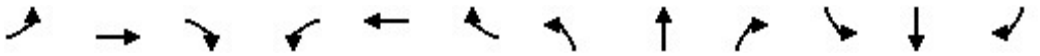
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		0			0		2	201		1	22	
Queue Length 95th (ft)		0			0		m8	428		m1	12	
Internal Link Dist (ft)		379			175			364			356	
Turn Bay Length (ft)							100			110		
Base Capacity (vph)		398			502		297	1502		541	1513	
Starvation Cap Reductn		0			0		0	0		0	28	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.11		0.05	0.50		0.06	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 88.5 (68%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 4.0		Intersection LOS: A	
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			

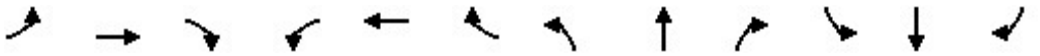
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Rainier Ave S & S Rose St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	37	0	0	48	18	645	16	21	1028	22
Future Volume (vph)	0	0	37	0	0	48	18	645	16	21	1028	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	11	12	11
Storage Length (ft)	0		0	0		0	55		30	55		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.98			1.00			1.00	
Frt		0.865			0.865			0.997			0.997	
Flt Protected								0.999			0.999	
Satd. Flow (prot)	0	1539	0	0	1557	0	0	1775	0	0	1854	0
Flt Permitted								0.956			0.978	
Satd. Flow (perm)	0	1539	0	0	1557	0	0	1698	0	0	1815	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		155			296			3			2	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		395			348			458			372	
Travel Time (s)		10.8			9.5			10.4			8.5	
Confl. Peds. (#/hr)	1		13	13		1	27		9	9		27
Confl. Bikes (#/hr)			2						1			
Peak Hour Factor	0.73	0.73	0.73	0.68	0.68	0.68	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	0	0	51	0	0	71	21	750	19	22	1082	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	71	0	0	790	0	0	1127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			2	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		4.0	4.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0		20.0	20.0		13.0	13.0		13.0	13.0	
Total Split (s)	25.0	25.0		25.0	25.0		105.0	105.0		105.0	105.0	
Total Split (%)	19.2%	19.2%		19.2%	19.2%		80.8%	80.8%		80.8%	80.8%	
Maximum Green (s)	22.0	22.0		21.0	21.0		99.5	99.5		99.5	99.5	
Yellow Time (s)	3.0	3.0		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.0	0.0		0.5	0.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		3.0			4.0			5.5			5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		5.0	5.0							
Flash Dont Walk (s)	14.0	14.0		11.0	11.0							
Pedestrian Calls (#/hr)	13	13		0	0							
Act Effct Green (s)		12.6			11.5			112.0			112.0	
Actuated g/C Ratio		0.10			0.09			0.86			0.86	
v/c Ratio		0.18			0.17			0.54			0.72	
Control Delay		1.3			0.9			4.0			2.5	
Queue Delay		0.0			0.0			0.0			0.1	
Total Delay		1.3			0.9			4.0			2.6	
LOS		A			A			A			A	
Approach Delay		1.3			0.9			4.0			2.6	
Approach LOS		A			A			A			A	
90th %ile Green (s)	21.0	21.0		20.0	20.0		100.5	100.5		100.5	100.5	
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	21.0	21.0		20.0	20.0		100.5	100.5		100.5	100.5	
70th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	7.0	7.0		6.0	6.0		114.5	114.5		114.5	114.5	
50th %ile Term Code	Min	Min		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	7.0	7.0		6.0	6.0		114.5	114.5		114.5	114.5	
30th %ile Term Code	Min	Min		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		124.5	124.5		124.5	124.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0			0			150			74	
Fuel Used(gal)		0			0			4			4	
CO Emissions (g/hr)		9			11			266			284	
NOx Emissions (g/hr)		2			2			52			55	
VOC Emissions (g/hr)		2			2			62			66	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		0			0			16			7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		0			0			162			14	
Internal Link Dist (ft)		315			268			378			292	
Turn Bay Length (ft)												
Base Capacity (vph)		389			499			1463			1563	
Starvation Cap Reductn		0			0			0			28	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.14			0.54			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 68.5 (53%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 3.0		Intersection LOS: A	
Intersection Capacity Utilization 82.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 21: Rainier Ave S & S Kenyon St

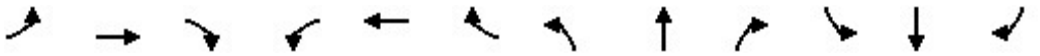
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	10	683	1067	20
Future Volume (vph)	0	10	10	683	1067	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12
Storage Length (ft)	0	0	30			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97			1.00	1.00	
Frt	0.865				0.997	
Flt Protected				0.999		
Satd. Flow (prot)	1468	0	0	1776	1789	0
Flt Permitted				0.981		
Satd. Flow (perm)	1468	0	0	1744	1789	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	162				3	
Link Speed (mph)	25			30	25	
Link Distance (ft)	652			388	373	
Travel Time (s)	17.8			8.8	10.2	
Confl. Peds. (#/hr)	32	2	22			22
Peak Hour Factor	0.55	0.55	0.93	0.93	0.96	0.96
Heavy Vehicles (%)	9%	9%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	9	9	0
Adj. Flow (vph)	0	18	11	734	1111	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	745	1132	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.04	1.05	1.05	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	2	
Permitted Phases			2			
Detector Phase	4		2	2	2	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	22.0		12.0	12.0	12.0	
Total Split (s)	22.0		108.0	108.0	108.0	
Total Split (%)	16.9%		83.1%	83.1%	83.1%	
Maximum Green (s)	19.0		103.5	103.5	103.5	
Yellow Time (s)	3.0		3.5	3.5	3.5	
All-Red Time (s)	0.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	3.0			4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		0.2	0.2	0.2	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0					
Flash Dont Walk (s)	12.0					
Pedestrian Calls (#/hr)	32					
Act Effct Green (s)	14.2			111.2	111.2	
Actuated g/C Ratio	0.11			0.86	0.86	
v/c Ratio	0.06			0.50	0.74	
Control Delay	0.4			4.6	2.7	
Queue Delay	0.0			0.1	0.1	
Total Delay	0.4			4.7	2.8	
LOS	A			A	A	
Approach Delay	0.4			4.7	2.8	
Approach LOS	A			A	A	
90th %ile Green (s)	19.0		103.5	103.5	103.5	
90th %ile Term Code	Ped		Coord	Coord	Coord	
70th %ile Green (s)	19.0		103.5	103.5	103.5	
70th %ile Term Code	Ped		Coord	Coord	Coord	
50th %ile Green (s)	19.0		103.5	103.5	103.5	
50th %ile Term Code	Ped		Coord	Coord	Coord	
30th %ile Green (s)	7.0		115.5	115.5	115.5	
30th %ile Term Code	Min		Coord	Coord	Coord	
10th %ile Green (s)	0.0		125.5	125.5	125.5	
10th %ile Term Code	Skip		Coord	Coord	Coord	
Stops (vph)	0			145	133	
Fuel Used(gal)	0			4	5	
CO Emissions (g/hr)	4			248	318	
NOx Emissions (g/hr)	1			48	62	
VOC Emissions (g/hr)	1			58	74	
Dilemma Vehicles (#)	0			0	0	
Queue Length 50th (ft)	0			159	147	

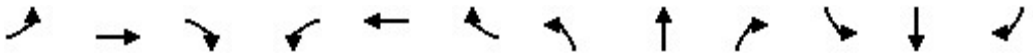
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)	0			303	m136	
Internal Link Dist (ft)	572			308	293	
Turn Bay Length (ft)						
Base Capacity (vph)	352			1491	1530	
Starvation Cap Reductn	0			75	33	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.05			0.53	0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 47.5 (37%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 3.5		Intersection LOS: A	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 23: Rainier Ave S & S Holden St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	11	55	10	10	10	28	637	10	10	940	10
Future Volume (vph)	19	11	55	10	10	10	28	637	10	10	940	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		30	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94			0.96			1.00			1.00	
Frt		0.913			0.955			0.998			0.998	
Flt Protected		0.989			0.984		0.950			0.950		
Satd. Flow (prot)	0	1601	0	0	1668	0	1636	1778	0	1652	1730	0
Flt Permitted		0.914			0.824		0.208			0.328		
Satd. Flow (perm)	0	1470	0	0	1374	0	358	1778	0	570	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			14			2			1	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		549			457			716			364	
Travel Time (s)		15.0			12.5			19.5			9.9	
Confl. Peds. (#/hr)	9		18	18		9	22		11	11		22
Confl. Bikes (#/hr)			2			2			1			
Peak Hour Factor	0.91	0.91	0.91	0.71	0.71	0.71	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	21	12	60	14	14	14	34	767	12	11	1056	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	42	0	34	779	0	11	1067	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.04	1.00	1.09	1.10	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



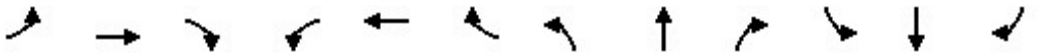
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		21.0	21.0		21.0	21.0	
Total Split (s)	24.0	24.0		24.0	24.0		106.0	106.0		106.0	106.0	
Total Split (%)	18.5%	18.5%		18.5%	18.5%		81.5%	81.5%		81.5%	81.5%	
Maximum Green (s)	18.0	18.0		18.0	18.0		100.5	100.5		100.5	100.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	18	18		18	18		22	22		22	22	
Act Effct Green (s)		11.7			11.7		106.8	106.8		106.8	106.8	
Actuated g/C Ratio		0.09			0.09		0.82	0.82		0.82	0.82	
v/c Ratio		0.50			0.31		0.12	0.53		0.02	0.75	
Control Delay		32.7			44.3		2.8	5.8		3.7	8.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		32.7			44.3		2.8	5.8		3.7	8.1	
LOS		C			D		A	A		A	A	
Approach Delay		32.7			44.3			5.7			8.1	
Approach LOS		C			D			A			A	
90th %ile Green (s)	18.0	18.0		18.0	18.0		100.5	100.5		100.5	100.5	
90th %ile Term Code	Ped	Ped		Ped	Ped		Coord	Coord		Coord	Coord	
70th %ile Green (s)	18.0	18.0		18.0	18.0		100.5	100.5		100.5	100.5	
70th %ile Term Code	Ped	Ped		Ped	Ped		Coord	Coord		Coord	Coord	
50th %ile Green (s)	8.6	8.6		8.6	8.6		109.9	109.9		109.9	109.9	
50th %ile Term Code	Gap	Gap		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	7.0	7.0		7.0	7.0		111.5	111.5		111.5	111.5	
30th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	
10th %ile Green (s)	7.0	7.0		7.0	7.0		111.5	111.5		111.5	111.5	
10th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	
Stops (vph)		35			20		5	288		2	267	
Fuel Used(gal)		1			0		0	6		0	6	
CO Emissions (g/hr)		77			32		14	407		3	387	
NOx Emissions (g/hr)		15			6		3	79		1	75	
VOC Emissions (g/hr)		18			8		3	94		1	90	
Dilemma Vehicles (#)		0			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		29			23		3	256		1	238	
Queue Length 95th (ft)		80			43		8	266		m3	376	
Internal Link Dist (ft)		469			377			636			284	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		253			202		294	1460		467	1420	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.37			0.21		0.12	0.53		0.02	0.75	

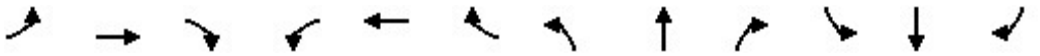
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 98.5 (76%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 70.3%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 25: Rainier Ave S & S Holly St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	83	128	25	92	33	84	561	16	13	922	71
Future Volume (vph)	77	83	128	25	92	33	84	561	16	13	922	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	11	10	10	12
Storage Length (ft)	0		0	0		0	80		30	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			5			20		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.99			1.00			0.99	
Frt		0.940			0.970			0.996			0.989	
Flt Protected		0.987			0.992		0.950			0.950		
Satd. Flow (prot)	0	1644	0	0	1750	0	1652	1727	0	1652	1642	0
Flt Permitted		0.739			0.831		0.050			0.332		
Satd. Flow (perm)	0	1224	0	0	1466	0	87	1727	0	577	1642	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			10			2			5	
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		874			647			378			248	
Travel Time (s)		23.8			17.6			8.6			6.8	
Confl. Peds. (#/hr)	13		21	21		13	21		17	17		21
Confl. Bikes (#/hr)			1			2						
Peak Hour Factor	0.84	0.84	0.84	0.80	0.80	0.80	0.93	0.93	0.93	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	92	99	152	31	115	41	90	603	17	14	1002	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	343	0	0	187	0	90	620	0	14	1079	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.04	1.09	1.14	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	7.0		5.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		10.0	19.0		10.0	17.0	
Total Split (s)	34.0	34.0		34.0	34.0		12.0	86.0		10.0	84.0	
Total Split (%)	26.2%	26.2%		26.2%	26.2%		9.2%	66.2%		7.7%	64.6%	
Maximum Green (s)	29.5	29.5		29.5	29.5		9.0	81.5		5.5	79.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		2.0	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		3.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	13.0	13.0		13.0	13.0			7.0			5.0	
Pedestrian Calls (#/hr)	21	21		21	21			17			21	
Act Effct Green (s)		29.5			29.5		90.0	87.5		89.7	80.7	
Actuated g/C Ratio		0.23			0.23		0.69	0.67		0.69	0.62	
v/c Ratio		1.14			0.55		0.58	0.53		0.03	1.06	
Control Delay		137.8			49.0		32.8	15.0		2.8	60.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		137.8			49.0		32.8	15.0		2.8	60.7	
LOS		F			D		C	B		A	E	
Approach Delay		137.8			49.0			17.3			60.0	
Approach LOS		F			D			B			E	
90th %ile Green (s)	29.5	29.5		29.5	29.5		9.0	81.5		5.5	79.5	
90th %ile Term Code	Max	Max		Max	Max		Max	Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5		29.5	29.5		9.0	81.5		5.5	79.5	
70th %ile Term Code	Max	Max		Max	Max		Max	Coord		Max	Coord	
50th %ile Green (s)	29.5	29.5		29.5	29.5		8.1	91.5		0.0	80.4	
50th %ile Term Code	Max	Max		Max	Max		Gap	Coord		Skip	Coord	
30th %ile Green (s)	29.5	29.5		29.5	29.5		6.9	91.5		0.0	81.6	
30th %ile Term Code	Max	Max		Max	Max		Gap	Coord		Skip	Coord	
10th %ile Green (s)	29.5	29.5		29.5	29.5		6.0	91.5		0.0	82.5	
10th %ile Term Code	Max	Max		Max	Max		Gap	Coord		Skip	Coord	
Stops (vph)		217			124		57	275		3	777	
Fuel Used(gal)		11			3		1	5		0	17	
CO Emissions (g/hr)		773			196		79	348		3	1213	
NOx Emissions (g/hr)		150			38		15	68		1	236	
VOC Emissions (g/hr)		179			45		18	81		1	281	
Dilemma Vehicles (#)		0			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		~319			133		31	189		3	~992	
Queue Length 95th (ft)		#461			184		81	421		m2	#1264	
Internal Link Dist (ft)		794			567			298			168	
Turn Bay Length (ft)							80			100		
Base Capacity (vph)		300			340		169	1163		443	1021	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.14			0.55		0.53	0.53		0.03	1.06	

Intersection Summary

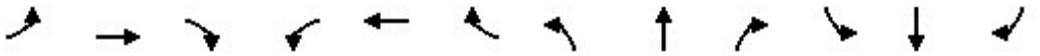
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 42.5 (33%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 57.5 Intersection LOS: E
Intersection Capacity Utilization 96.0% ICU Level of Service F
Analysis Period (min) 15

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

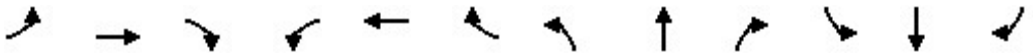
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 26: Rainier Ave S & S Othello St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	70	136	21	76	32	83	537	10	17	806	53
Future Volume (vph)	71	70	136	21	76	32	83	537	10	17	806	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	100		30	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98			1.00			1.00	
Frt		0.934			0.966			0.997			0.991	
Flt Protected		0.987			0.992		0.950			0.950		
Satd. Flow (prot)	0	1656	0	0	1764	0	1636	1710	0	1652	1714	0
Flt Permitted		0.798			0.864		0.128			0.318		
Satd. Flow (perm)	0	1332	0	0	1529	0	220	1710	0	553	1714	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			13			1			4	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		749			694			235			435	
Travel Time (s)		17.0			15.8			6.4			11.9	
Confl. Peds. (#/hr)	10		25	25		10	11		23	23		11
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.88	0.88	0.88	0.78	0.78	0.78	0.86	0.86	0.86	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	9	0	0	9	0
Adj. Flow (vph)	81	80	155	27	97	41	97	624	12	18	857	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	165	0	97	636	0	18	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.10	1.00	1.09	1.10	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			2			6		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	27.0	27.0		28.0	28.0		8.0	21.0		8.0	22.0	
Total Split (s)	40.0	40.0		40.0	40.0		12.0	79.0		11.0	78.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		9.2%	60.8%		8.5%	60.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		8.0	74.5		7.0	73.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.0	4.5		4.0	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		3.0	2.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	15.0	15.0		16.0	16.0			9.0			10.0	
Pedestrian Calls (#/hr)	25	25		10	10			23			11	
Act Effct Green (s)		30.7			30.7		86.8	86.1		89.2	78.9	
Actuated g/C Ratio		0.24			0.24		0.67	0.66		0.69	0.61	
v/c Ratio		0.92			0.45		0.43	0.56		0.04	0.88	
Control Delay		75.1			41.8		15.0	16.0		5.6	27.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		75.1			41.8		15.0	16.0		5.6	27.0	
LOS		E			D		B	B		A	C	
Approach Delay		75.1			41.8			15.8			26.6	
Approach LOS		E			D			B			C	
90th %ile Green (s)	35.5	35.5		35.5	35.5		8.0	74.8		6.7	73.5	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Coord		Gap	Coord	
70th %ile Green (s)	35.5	35.5		35.5	35.5		8.0	75.2		6.3	73.5	
70th %ile Term Code	Max	Max		Hold	Hold		Max	Coord		Gap	Coord	
50th %ile Green (s)	32.7	32.7		32.7	32.7		8.0	88.3		0.0	76.3	
50th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Coord		Skip	Coord	
30th %ile Green (s)	28.2	28.2		28.2	28.2		7.1	92.8		0.0	81.7	
30th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Coord		Skip	Coord	
10th %ile Green (s)	21.4	21.4		21.4	21.4		6.0	99.6		0.0	89.6	
10th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Coord		Skip	Coord	
Stops (vph)		232			98		32	255		5	468	
Fuel Used(gal)		7			2		1	4		0	14	
CO Emissions (g/hr)		500			163		38	269		12	949	
NOx Emissions (g/hr)		97			32		7	52		2	185	
VOC Emissions (g/hr)		116			38		9	62		3	220	
Dilemma Vehicles (#)		0			0		0	0		0	0	

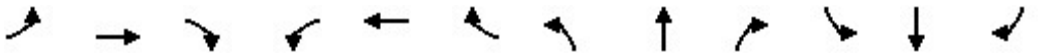
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		230			108		29	263		4	370	
Queue Length 95th (ft)		#359			144		60	378		m6	#989	
Internal Link Dist (ft)		669			614			155			355	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		390			426		234	1133		439	1041	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.81			0.39		0.41	0.56		0.04	0.88	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 98.5 (76%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 31.2 Intersection LOS: C
Intersection Capacity Utilization 84.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Rainier Ave S & S Graham St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	10	0	0	10	10	630	0	10	866	10
Future Volume (vph)	0	0	10	0	0	10	10	630	0	10	866	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	50		30	55		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			30		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.95			1.00			1.00	
Frt		0.865			0.865						0.999	
Flt Protected								0.999			0.999	
Satd. Flow (prot)	0	1602	0	0	1558	0	0	1825	0	0	1774	0
Flt Permitted								0.987			0.993	
Satd. Flow (perm)	0	1602	0	0	1558	0	0	1803	0	0	1763	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		139			511						2	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		531			399			141			301	
Travel Time (s)		14.5			10.9			3.8			8.2	
Confl. Peds. (#/hr)	1		3	3		1	17		4	4		17
Confl. Bikes (#/hr)									2			1
Peak Hour Factor	0.45	0.45	0.45	0.50	0.50	0.50	0.89	0.89	0.89	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Adj. Flow (vph)	0	0	22	0	0	20	11	708	0	10	893	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	20	0	0	719	0	0	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0					7.0	7.0		1.0	1.0	
Minimum Split (s)	22.0	22.0					16.5	16.5		10.5	10.5	
Total Split (s)	22.0	22.0					43.0	43.0		43.0	43.0	
Total Split (%)	33.8%	33.8%					66.2%	66.2%		66.2%	66.2%	
Maximum Green (s)	19.0	19.0					38.5	38.5		38.5	38.5	
Yellow Time (s)	3.0	3.0					3.5	3.5		3.5	3.5	
All-Red Time (s)	0.0	0.0					1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		3.0						4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2					0.2	0.2		0.2	0.2	
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0										
Flash Dont Walk (s)	12.0	12.0										
Pedestrian Calls (#/hr)	3	3										
Act Effct Green (s)		9.4			0.0			56.8			56.8	
Actuated g/C Ratio		0.14			0.00			0.87			0.87	
v/c Ratio		0.06			0.04			0.46			0.59	
Control Delay		0.3			0.1			1.9			5.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		0.3			0.1			1.9			5.1	
LOS		A			A			A			A	
Approach Delay		0.3			0.1			1.9			5.1	
Approach LOS		A			A			A			A	
90th %ile Green (s)	19.0	19.0					38.5	38.5		38.5	38.5	
90th %ile Term Code	Ped	Ped					Coord	Coord		Coord	Coord	
70th %ile Green (s)	7.0	7.0					50.5	50.5		50.5	50.5	
70th %ile Term Code	Min	Min					Coord	Coord		Coord	Coord	
50th %ile Green (s)	0.0	0.0					60.5	60.5		60.5	60.5	
50th %ile Term Code	Skip	Skip					Coord	Coord		Coord	Coord	
30th %ile Green (s)	0.0	0.0					60.5	60.5		60.5	60.5	
30th %ile Term Code	Skip	Skip					Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0					60.5	60.5		60.5	60.5	
10th %ile Term Code	Skip	Skip					Coord	Coord		Coord	Coord	
Stops (vph)		0			0			34			170	
Fuel Used(gal)		0			0			1			4	
CO Emissions (g/hr)		3			2			80			269	
NOx Emissions (g/hr)		1			0			16			52	
VOC Emissions (g/hr)		1			1			19			62	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		0			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		0			0			47			#459	
Internal Link Dist (ft)		451			319			61			221	
Turn Bay Length (ft)												
Base Capacity (vph)		566			511			1575			1541	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.04			0.04			0.46			0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 40.5 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 3.6		Intersection LOS: A	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 32: Rainier Ave S & S Kenny St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1007	12	10	609	10	10
Future Volume (vph)	1007	12	10	609	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998				0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	3567	0	0	1843	1728	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	3567	0	0	1843	1728	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	302			261	303	
Travel Time (s)	8.2			7.1	6.9	
Confl. Peds. (#/hr)		25	25			
Peak Hour Factor	0.92	0.92	0.96	0.96	0.53	0.53
Heavy Vehicles (%)	1%	1%	3%	3%	0%	0%
Adj. Flow (vph)	1095	13	10	634	19	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1108	0	0	644	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

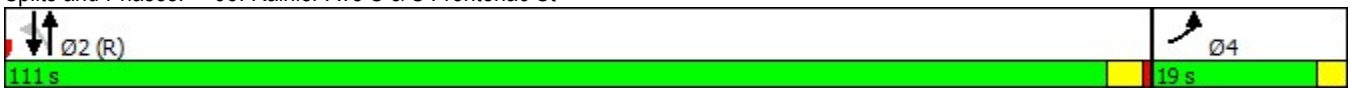
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	0	675	1005	0
Future Volume (vph)	0	10	0	675	1005	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	30			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						
Satd. Flow (prot)	1611	0	0	1796	1863	0
Flt Permitted						
Satd. Flow (perm)	1611	0	0	1796	1863	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	190					
Link Speed (mph)	30			30	25	
Link Distance (ft)	265			329	361	
Travel Time (s)	6.0			7.5	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	9	0	9
Adj. Flow (vph)	0	11	0	734	1092	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	734	1092	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.05	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot			NA	NA	
Protected Phases	4			2	2	

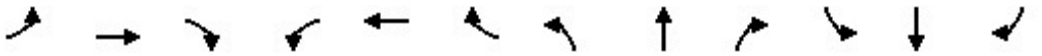
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases			2			
Detector Phase	4		2	2	2	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	19.0		12.0	12.0	12.0	
Total Split (s)	19.0		111.0	111.0	111.0	
Total Split (%)	14.6%		85.4%	85.4%	85.4%	
Maximum Green (s)	16.0		106.5	106.5	106.5	
Yellow Time (s)	3.0		3.5	3.5	3.5	
All-Red Time (s)	0.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	3.0			4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2		0.2	0.2	0.2	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0					
Flash Dont Walk (s)	9.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	7.0			127.1	127.1	
Actuated g/C Ratio	0.05			0.98	0.98	
v/c Ratio	0.04			0.42	0.60	
Control Delay	0.3			1.0	1.1	
Queue Delay	0.0			0.0	0.1	
Total Delay	0.3			1.0	1.2	
LOS	A			A	A	
Approach Delay	0.3			1.0	1.2	
Approach LOS	A			A	A	
90th %ile Green (s)	7.0		115.5	115.5	115.5	
90th %ile Term Code	Min		Coord	Coord	Coord	
70th %ile Green (s)	0.0		125.5	125.5	125.5	
70th %ile Term Code	Skip		Coord	Coord	Coord	
50th %ile Green (s)	0.0		125.5	125.5	125.5	
50th %ile Term Code	Skip		Coord	Coord	Coord	
30th %ile Green (s)	0.0		125.5	125.5	125.5	
30th %ile Term Code	Skip		Coord	Coord	Coord	
10th %ile Green (s)	0.0		125.5	125.5	125.5	
10th %ile Term Code	Skip		Coord	Coord	Coord	
Stops (vph)	0			22	8	
Fuel Used(gal)	0			2	3	
CO Emissions (g/hr)	1			140	234	
NOx Emissions (g/hr)	0			27	45	
VOC Emissions (g/hr)	0			32	54	
Dilemma Vehicles (#)	0			0	0	
Queue Length 50th (ft)	0			0	0	
Queue Length 95th (ft)	0			m94	7	
Internal Link Dist (ft)	185			249	281	
Turn Bay Length (ft)						
Base Capacity (vph)	364			1756	1821	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Starvation Cap Reductn	0			0	71	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.03			0.42	0.62	

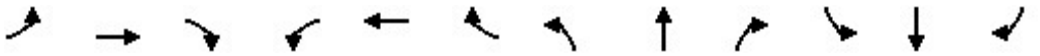
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 4.5 (3%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 1.1		Intersection LOS: A	
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 98: Rainier Ave S & S Frontenac St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	978	10	10	590	19	0	0	41	0	0	10
Future Volume (vph)	10	978	10	10	590	19	0	0	41	0	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00				0.98			
Frt		0.998			0.995				0.865			0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	3531	0	1770	3518	0	0	0	1644	0	0	1644
Flt Permitted	0.411			0.258								
Satd. Flow (perm)	762	3531	0	479	3518	0	0	0	1617	0	0	1644
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			8				478			226
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		318			302			586			351	
Travel Time (s)		8.7			8.2			13.3			8.0	
Confl. Peds. (#/hr)	13		15	15		13			14	14		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	11	1063	11	10	615	20	0	0	52	0	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1074	0	10	635	0	0	0	52	0	0	13
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2				1			1
Detector Template	Left	Thru		Left	Thru				Right			Right
Leading Detector (ft)	20	100		20	100				20			20
Trailing Detector (ft)	0	0		0	0				0			0
Detector 1 Position(ft)	0	0		0	0				0			0
Detector 1 Size(ft)	20	6		20	6				20			20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				0.0			0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				0.0			0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				0.0			0.0
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA				Free			Perm
Protected Phases		2			2							
Permitted Phases	2			2					Free			4
Detector Phase	2	2		2	2							4
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0							7.0
Minimum Split (s)	12.0	12.0		12.0	12.0							26.0
Total Split (s)	39.0	39.0		39.0	39.0							26.0
Total Split (%)	60.0%	60.0%		60.0%	60.0%							40.0%
Maximum Green (s)	34.5	34.5		34.5	34.5							23.0
Yellow Time (s)	3.5	3.5		3.5	3.5							3.0
All-Red Time (s)	1.0	1.0		1.0	1.0							0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0							0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5							3.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2							0.2
Recall Mode	C-Max	C-Max		C-Max	C-Max							None
Walk Time (s)												7.0
Flash Dont Walk (s)												16.0
Pedestrian Calls (#/hr)												14
Act Effct Green (s)	56.0	56.0		56.0	56.0				65.0			10.2
Actuated g/C Ratio	0.86	0.86		0.86	0.86				1.00			0.16
v/c Ratio	0.02	0.35		0.02	0.21				0.03			0.03
Control Delay	1.4	1.6		2.7	1.7				0.0			0.1
Queue Delay	0.0	0.0		0.0	0.0				0.0			0.0
Total Delay	1.4	1.6		2.7	1.7				0.0			0.1
LOS	A	A		A	A				A			A
Approach Delay		1.6			1.7						0.1	
Approach LOS		A			A						A	
90th %ile Green (s)	34.5	34.5		34.5	34.5							23.0
90th %ile Term Code	Coord	Coord		Coord	Coord							Ped
70th %ile Green (s)	50.5	50.5		50.5	50.5							7.0
70th %ile Term Code	Coord	Coord		Coord	Coord							Min
50th %ile Green (s)	60.5	60.5		60.5	60.5							0.0
50th %ile Term Code	Coord	Coord		Coord	Coord							Skip
30th %ile Green (s)	60.5	60.5		60.5	60.5							0.0
30th %ile Term Code	Coord	Coord		Coord	Coord							Skip
10th %ile Green (s)	60.5	60.5		60.5	60.5							0.0
10th %ile Term Code	Coord	Coord		Coord	Coord							Skip
Stops (vph)	1	116		2	60				0			0
Fuel Used(gal)	0	3		0	2				0			0
CO Emissions (g/hr)	2	240		3	140				13			2
NOx Emissions (g/hr)	0	47		1	27				3			0
VOC Emissions (g/hr)	1	56		1	32				3			0
Dilemma Vehicles (#)	0	0		0	0				0			0
Queue Length 50th (ft)	0	0		0	0				0			0
Queue Length 95th (ft)	m3	194		m3	63				0			0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		238			222			506			271	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	656	3042		413	3032				1617			727
Starvation Cap Reductn	0	0		0	0				0			0
Spillback Cap Reductn	0	0		0	0				0			0
Storage Cap Reductn	0	0		0	0				0			0
Reduced v/c Ratio	0.02	0.35		0.02	0.21				0.03			0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 54.5 (84%), Referenced to phase 2:EBWB, Start of 1st Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 1.5		Intersection LOS: A	
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 100: 52nd Ave S & Rainier Ave S

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	10	676	10	10	1127
Future Volume (vph)	10	10	676	10	10	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.932		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1728	0	3498	0	1770	3539
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1728	0	3498	0	1770	3539
Link Speed (mph)	30		25			25
Link Distance (ft)	456		183			240
Travel Time (s)	10.4		5.0			6.5
Confl. Peds. (#/hr)		1		46	46	
Peak Hour Factor	0.56	0.56	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	0%	0%	3%	3%	2%	2%
Adj. Flow (vph)	18	18	751	11	11	1186
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	762	0	11	1186
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	970	36	10	590	30	28
Future Volume (vph)	970	36	10	590	30	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.935	
Flt Protected			0.950		0.975	
Satd. Flow (prot)	3556	0	1770	3539	1732	0
Flt Permitted			0.950		0.975	
Satd. Flow (perm)	3556	0	1770	3539	1732	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	284			318	497	
Travel Time (s)	7.7			8.7	11.3	
Confl. Peds. (#/hr)		13	13		5	1
Peak Hour Factor	0.96	0.96	0.97	0.97	0.68	0.68
Heavy Vehicles (%)	1%	1%	2%	2%	0%	0%
Adj. Flow (vph)	1010	38	10	608	44	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1048	0	10	608	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	991	26	10	609	10	18
Future Volume (vph)	991	26	10	609	10	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996				0.913	
Flt Protected				0.999	0.983	
Satd. Flow (prot)	3560	0	0	1843	1705	0
Flt Permitted				0.999	0.983	
Satd. Flow (perm)	3560	0	0	1843	1705	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	261			384	325	
Travel Time (s)	7.1			10.5	7.4	
Confl. Peds. (#/hr)		22	22			
Peak Hour Factor	0.95	0.95	0.92	0.92	0.63	0.63
Heavy Vehicles (%)	1%	1%	3%	3%	0%	0%
Adj. Flow (vph)	1043	27	11	662	16	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1070	0	0	673	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		