HEATH & ASSOCIATES

Transportation Planning & Engineering

TRAFFIC IMPACT ANALYSIS

Rainier Lodging

Enumclaw, Washington

May 14, 2025

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RAINIER LODGING
TRAFFIC IMPACT ANALYSIS

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RAINIER LODGING
TRAFFIC IMPACT ANALYSIS

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RAINIER LODGING
TRAFFIC IMPACT ANALYSIS

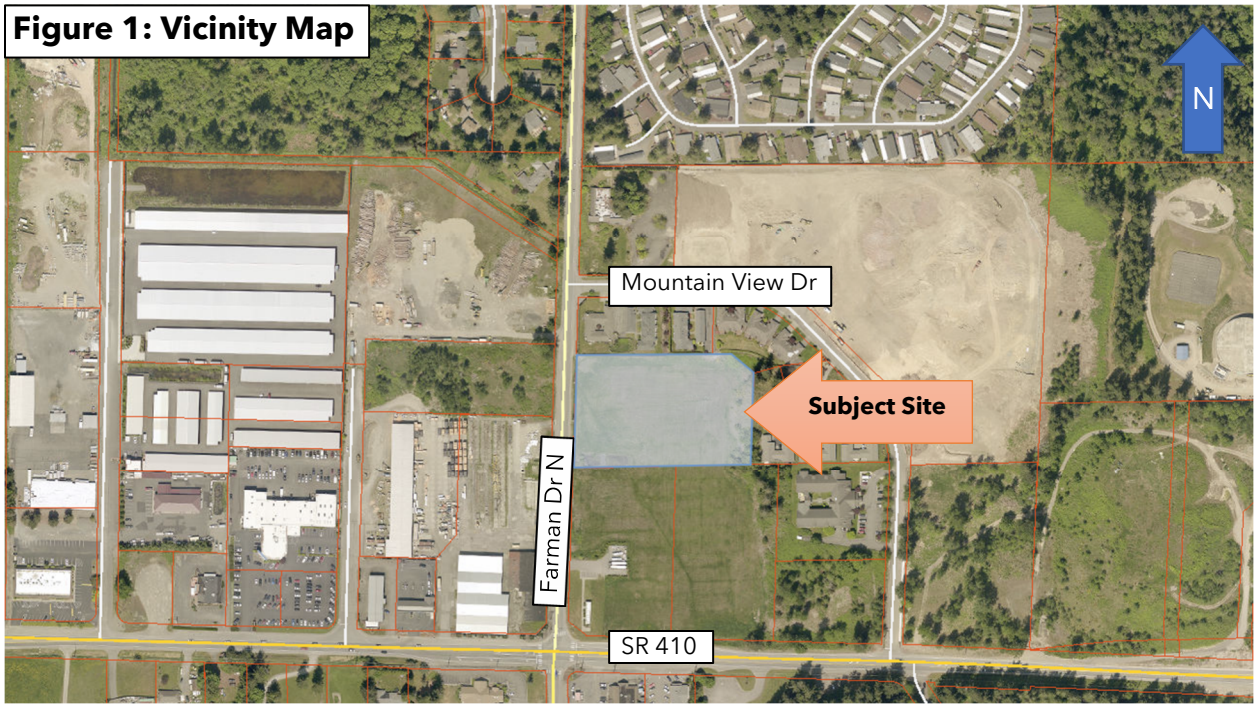
1. INTRODUCTION

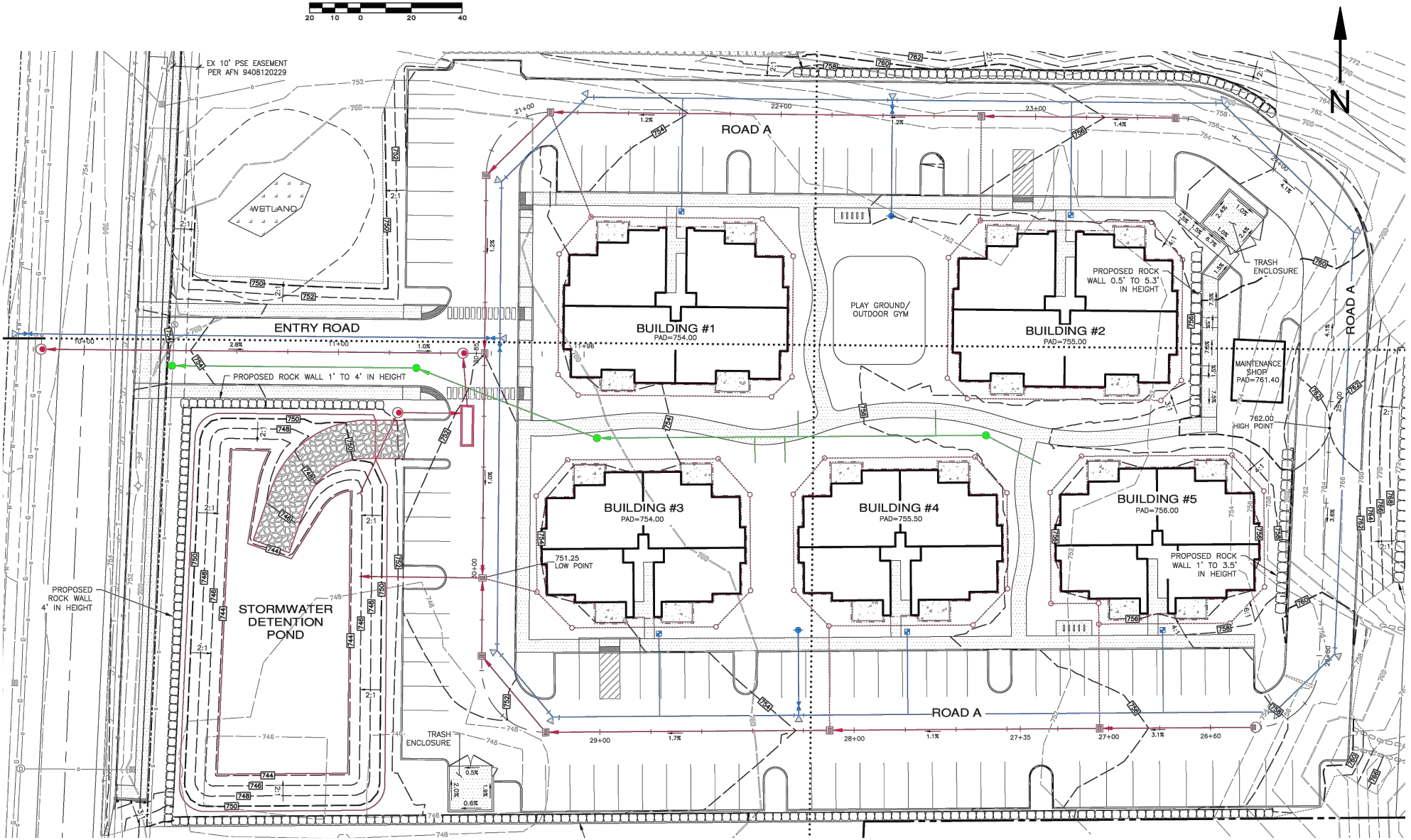
Heath & Associates has been retained to conduct a Traffic Impact Analysis (TIA) for a proposed residential development within the City of Enumclaw. This study evaluates potential transportation impacts associated with the project and has been prepared in accordance with the methodologies outlined in the Enumclaw Municipal Code.

2. PROJECT DESCRIPTION

Rainier Lodging is a proposed 60-unit apartment complex comprised of five buildings located within the City of Enumclaw. The subject site is bordered to the west via Farman Street N situated on 3.40-acres within a single undeveloped tax parcel (1920079136). Site ingress/egress is proposed via one new access point which is to extend east from Farman Street N, south of Mountain View Drive. **Figure 1** below illustrates the nearby roadway network with the subject site highlighted in blue. **Figure 2** displays the conceptual site plan and proposed access configuration.

Figure 1: Vicinity Map





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SITE PLAN
FIGURE 2

3. EXISTING CONDITIONS

3.1 Existing Street System

The street network serving the proposed project consists of a variety of roadways. The roadways studied for this project are listed below in **Table 1**.

Table 1: Roadway Network

Functional Classification	Roadway	Speed Limit	Lanes	Street Parking	Sidewalk
Major Arterial	SR-164/Griffin Ave[1]	25 mph	2-3	Some	Yes
	SR-410/Roosevelt Ave[2]	40 mph	2-5	No	Areas
Minor Arterial	Farman St N	35 mph	2	No	No
Collector	SE 440th St/Battersby Ave	35-25 mph	2	West of Garrett	West of Garrett
	Watson St N	25 mph	2	No	Yes
	Suntop Blvd N	25 mph	2	No	Yes

3.2 Transit Service

A review of King County Metro's Schedules & Maps indicates that the nearest transit route with respect to the subject site is DART 915. The nearest bus stop serving DART 915 is located at the intersection of Griffin Avenue and SR 410, approximately one mile west of the site. DART 915 operates between Enumclaw and Auburn, with weekday service from 4:36 AM to 7:49 PM and Saturday service from 9:50 AM to 6:37 PM. For more details, refer to King County Metro's Schedules & Maps.

3.3 Roadway Improvements

A review of the current WSDOT Statewide Transportation Improvement Program (STIP) 2025-2028 and the City of Enumclaw 2025-2030 Transportation Improvement Program indicates two improvement projects planned in the study area. Each project is identified and summarized below.

Battersby Avenue (TIP #: 4): This project aims to improve roadway conditions. The project spans from 255 Battersby Avenue to Farman Street N. The total estimated cost of $200,000 with an estimated completion year of 2026.

SR 410/SR 164 Signal Modifications (TIP #: 10): This project plans to modify the existing signal phasing and/or timing at the SR 410 & SR 164 intersection which will ultimately increase the efficiency and capacity of the intersection. The project has an estimated completion date of 2026 and is estimated to cost $100,000.

[1] Managed Access Class 5

[2] Managed Access Class 4

3.4 Existing Peak Hour Volumes and Travel Patterns

Field data for this study was collected in March 2025 at the following five study intersections. The study area was defined to include all arterial and collector intersections expected to receive 10 or more project-related peak hour trips (see Section 4 for details).

1. Roosevelt Avenue (SR 410) & Griffin Avenue (SR 164)
2. Roosevelt Avenue (SR 410) & Watson Street N
3. Roosevelt Avenue (SR 410) & Suntop Boulevard N
4. Roosevelt Avenue (SR 410) & Farman Street N
5. Farman Street N & Battersby Avenue

Data were obtained during the morning (AM) and evening (PM) peak periods between the hours of 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM, which generally translates to highest overall roadway volumes in a given 24-hour period. The peak hour (highest volumes) for both morning and evening periods is identified and utilized for capacity analysis.

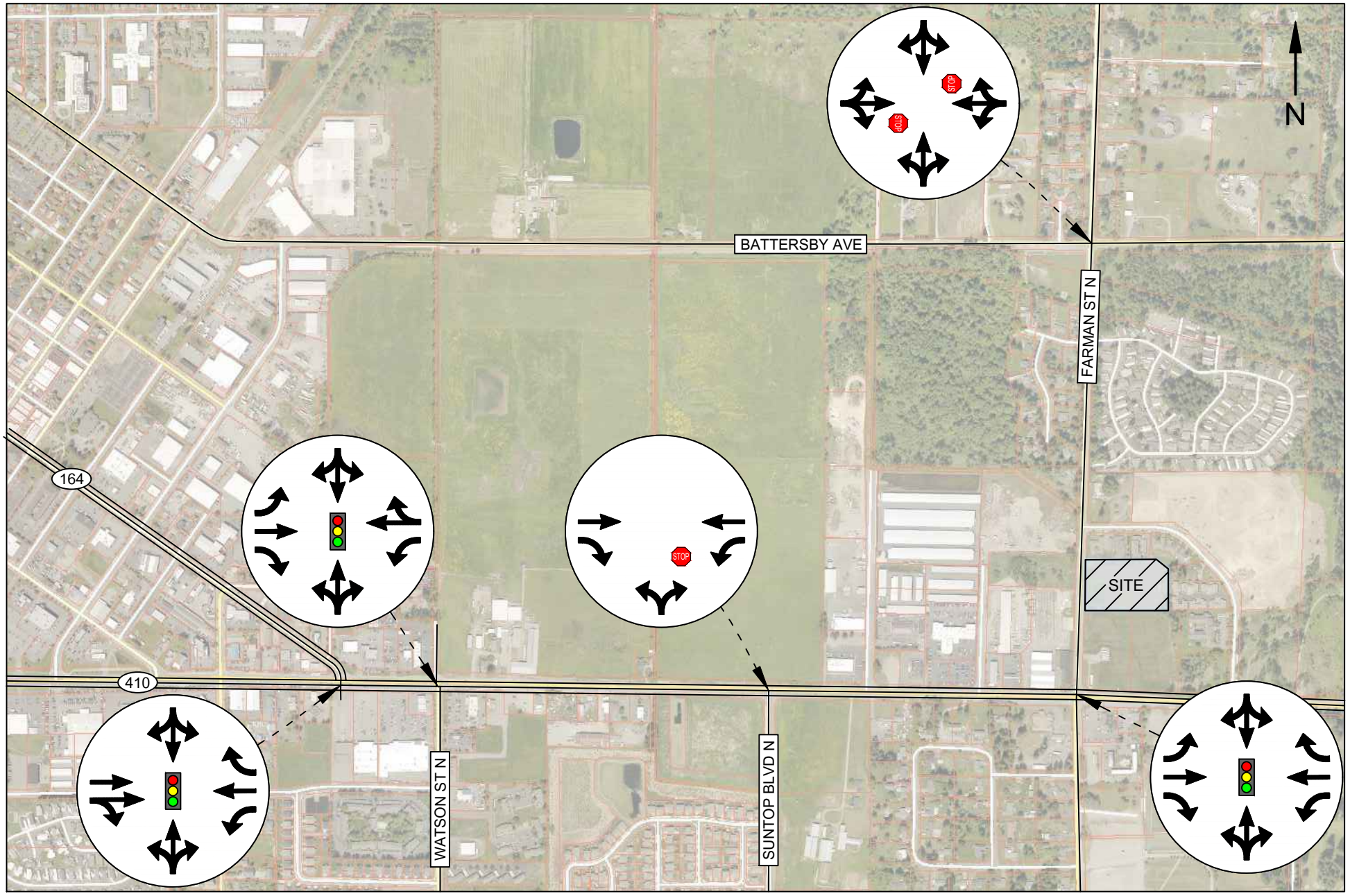
WSDOT's Short Count Factoring Guide indicates traffic volumes in March are generally higher than average[3] and therefore no seasonal adjustment factor was applied. **Figure 3** presents the intersection geometrics and control type for each study intersection. **Figures 4 and 5** depict the existing volumes during each peak hour.

3.5 Non-Motorist Activity & Infrastructure

Pedestrian and bicycle activity were monitored during AM and PM peak hour counts at all study intersections. **Figures 6 and 7** highlight peak hour non-motorist crossings. Except for a roughly 1,200-foot segment on the east side beginning just south of Kimberly Avenue, Farman Street generally lacks sidewalk. As part of the project, approximately 300 feet of new sidewalk would be constructed south from the existing terminus, extending the sidewalk network along Farman Street.

School-aged childing residing at the subject development would attend either Bryan Kibler Elementary School or Enumclaw Middle School, both of which are located over one mile away. As such, students would likely rely on school bus service and/or parent pick-up and drop-off for transportation

[3] Based on SFG-02 classification which shows March volumes are typically around five percent higher than average.



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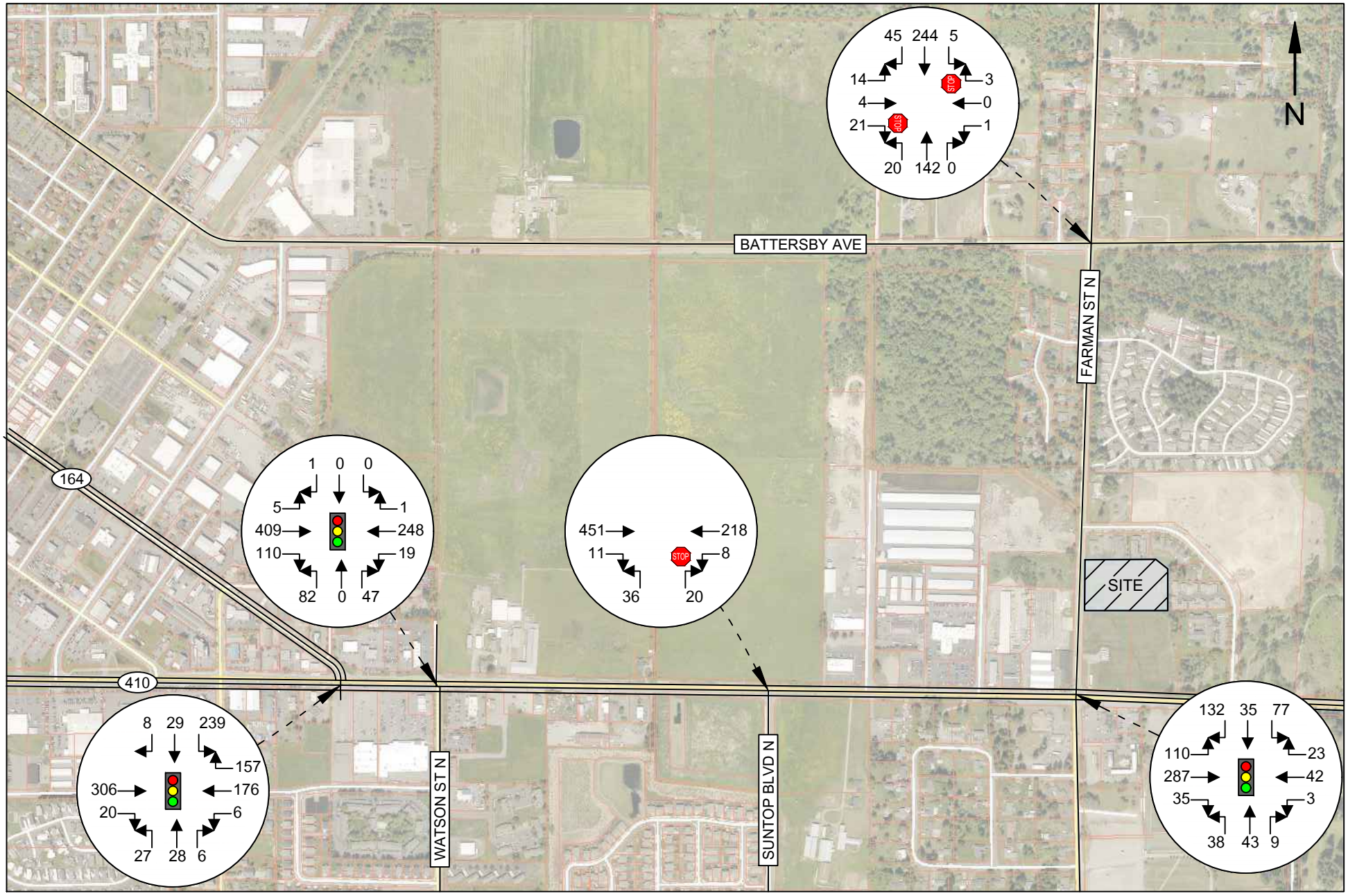
EXISTING INTERSECTION GEOMETRICS AND CONTROL TYPES
FIGURE 3



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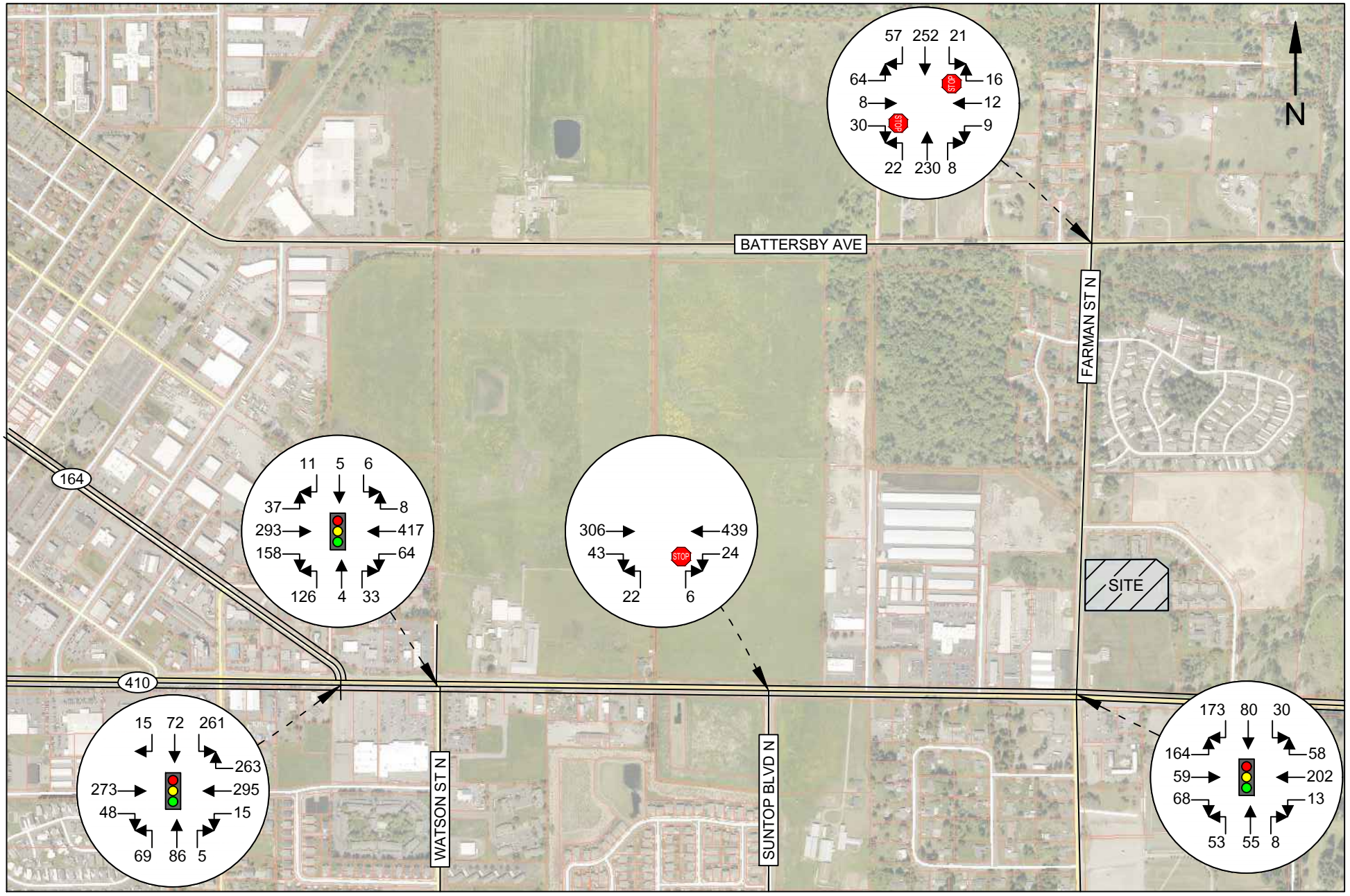
EXISTING AM PEAK HOUR VOLUMES
FIGURE 4



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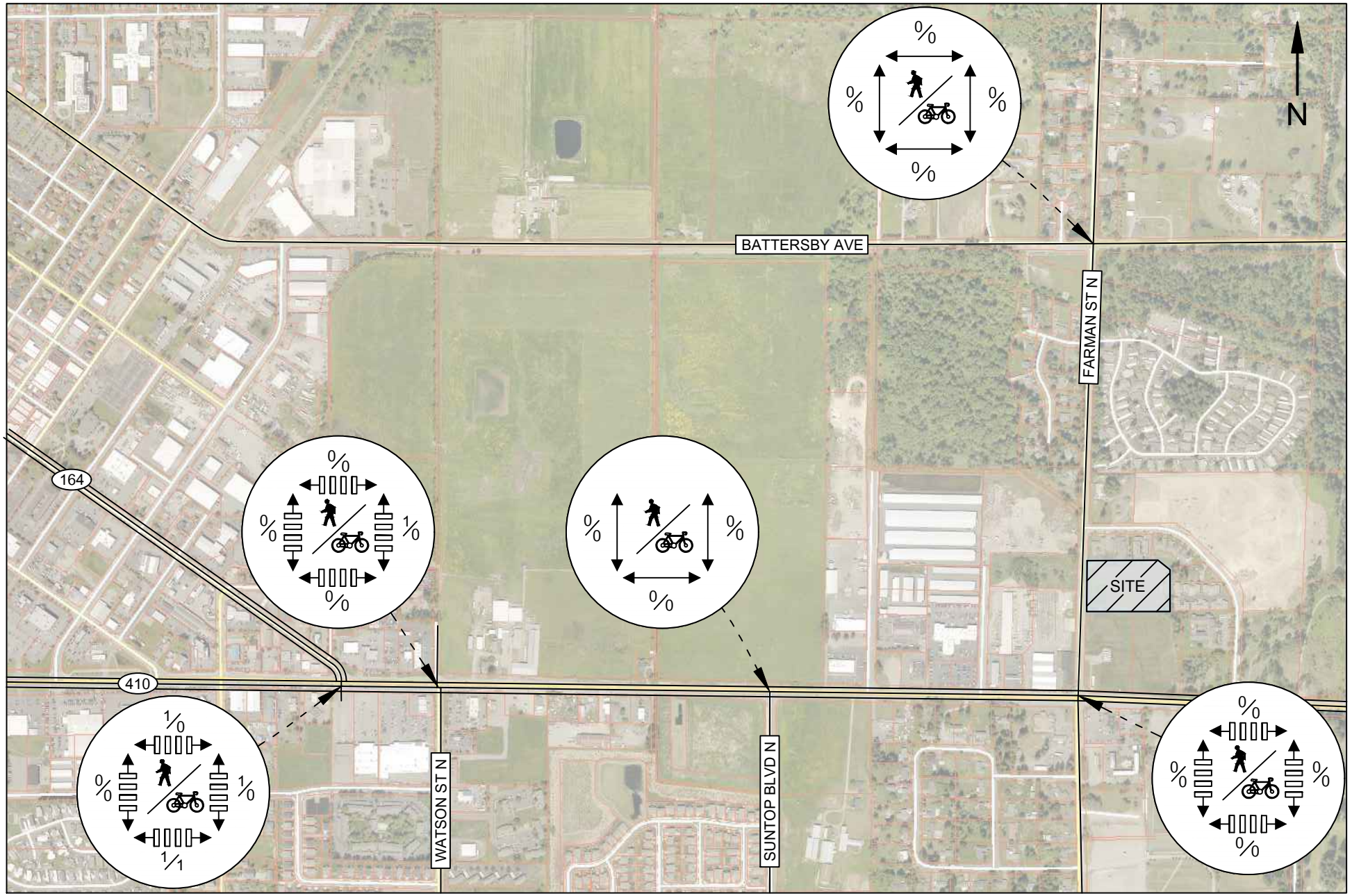
EXISTING PM PEAK HOUR VOLUMES
FIGURE 5



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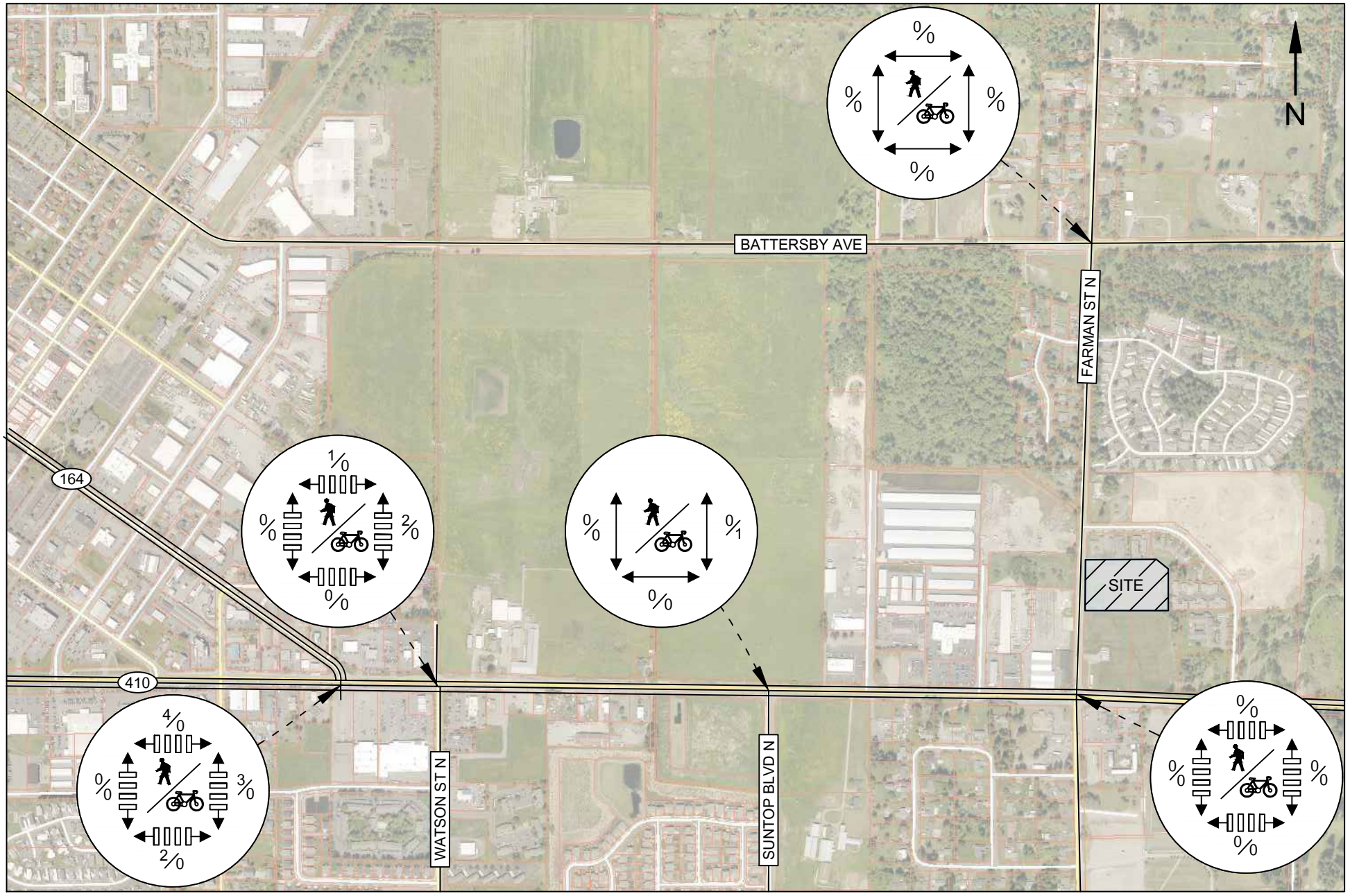
AM PEAK HOUR NON-MOTORIST VOLUMES
FIGURE 6



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PM PEAK HOUR NON-MOTORIST VOLUMES
FIGURE 7

3.6 Existing Level of Service

Level of Service (LOS) rates[4] the quality of traffic flow and user experience, typically on a scale from A to F, where:

- **LOS A** represents free-flowing traffic with minimal delays and low congestion.
- **LOS B** indicates stable traffic flow with some minor delays.
- **LOS C** shows moderate traffic flow with noticeable delays at peak times.
- **LOS D** is high-density traffic flow with more frequent and longer delays.
- **LOS E** is near-capacity conditions with significant delays and congestion.
- **LOS F** denotes over-capacity conditions, where traffic flow breaks down, resulting in severe congestion and delays.

LOS calculations were performed using Synchro 12. Signalized intersections report the overall LOS, while stop-controlled intersection report the worst approach. Signal timing sheets have been obtained from WSDOT and utilized in analysis. **Table 2** below summarizes the AM and PM peak hour LOS results.

Table 2: Existing Peak Hour Level of Service

Delays given in seconds per vehicle

Intersection	Control	Peak Hour	Critical Movement	LOS	Delay
SR 410 & SR 164	Signal	AM	Overall	B	14.9
		PM		C	21.3
SR 410 & Watson St N	Signal	AM	Overall	B	14.9
		PM		B	19.6
SR 410 & Suntop Blvd N	Stop	AM	NB	C	15.4
		PM		C	15.8
SR 410 & Farman St N	Signal	AM	Overall	B	13.1
		PM		B	13.9
Farman St N & Battersby Ave	Stop	AM	EB	B	12.9
		PM		C	17.7

[4] *Signalized Intersections - Level of Service*

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Stop Controlled Intersections – Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Highway Capacity Manual (HCM), 7th Edition

Level of Service Standards[5]: Enumclaw has adopted a standard of LOS D for signalized intersections and LOS E for unsignalized intersections. Moreover, SR 410, SR 164, and SR 169 all comprise a WSDOT standard of LOS D.

All intersections are shown to meet City and WSDOT standards, operating at LOS C or better conditions during either peak hour.

3.7 Safety Analysis

Collision history for each study intersection was requested from WSDOT for the prior five full years between 2019-2023. Refer to **Table 4** below for collision history by year.

Table 4: Collision History

Ref #	Intersection/Corridor	2019	2020	2021	2022	2023	Avg/Yr
1	SR 410 & SR 164	0	2	2	3	6	2.6
2	SR 410 & Watson St N	5	5	2	5	2	3.8
3	SR 410 between Waston & Suntop	2	1	1	0	0	0.8
4	SR 410 & Suntop Blvd N	0	0	1	0	0	0.2
5	SR 410 between Suntop & Farman	0	1	1	0	1	0.6
6	SR 410 & Farman St N	0	5	3	3	0	2.2
7	Farman St N between SR 410 & Battersby	0	0	2	1	2	1.0
8	Farman St N & Battersby Ave	0	0	3	1	0	0.8

A total of 60 collisions were recorded in the study area. The highest incident rate occurred at the SR 410 & Watson Street intersection with an average of 3.8 collisions per year over the past five years. The following sections analyze collision types, severity and contributing factors.

[5] City of Enumclaw's Comprehensive Plan, *Chapter 5 – Transportation*, (2015). & WSDOT Level of Service Standards – ArcGIS.

Collision Type Analysis

Summaries of collision types that occurred in the study area are provided in **Table 5** below.

Table 5: Collision History Crash Types

Crash Type	Number of Crashes (2019-2023)							
	Ref #1	2	3	4	5	6	7	8
Rear-end	3	13	1	0	2	5	0	0
Enter at Angle	5	2	0	1	1	5	0	2
From Opposite Direction	1	2	0	0	0	1	1	0
Struck Stationary Object	2	2	1	0	0	0	1	1
Vehicle Hits Non-Motorist	0	0	1	0	0	0	0	1
From Same Direction	2	0	1	0	0	0	0	0
Head-on	0	0	0	0	0	0	1	0
One Parked-One Moving	0	0	0	0	0	0	2	0

Collision types included: "rear-ends" (24/60), "enter at angle" (16/60), "from opposite direction" (5/60), "struck stationary object" (7/60), "vehicle strikes non-motorist" (2/60), "from same direction" (3/60), "head-on" (1/60), and "one parked – one moving" (2/60).

Collision Severity Analysis

A collision severity summary associated with each study intersection is provided below in **Table 6.**

Table 6: Collision History Severity

Collision Severity	Number of Crashes (2019-2023)							
	Ref #1	2	3	4	5	6	7	8
Fatal (K)	0	0	1	0	0	0	0	0
Incapacitating Injury (A)	0	0	0	0	0	0	1	0
Non-incapacitating Injury (B)	1	2	1	0	1	0	1	1
Possible Injury (C)	4	3	1	0	1	1	0	1
Property Damage Only (PDO)/Unknown	8	14	1	1	1	10	3	2

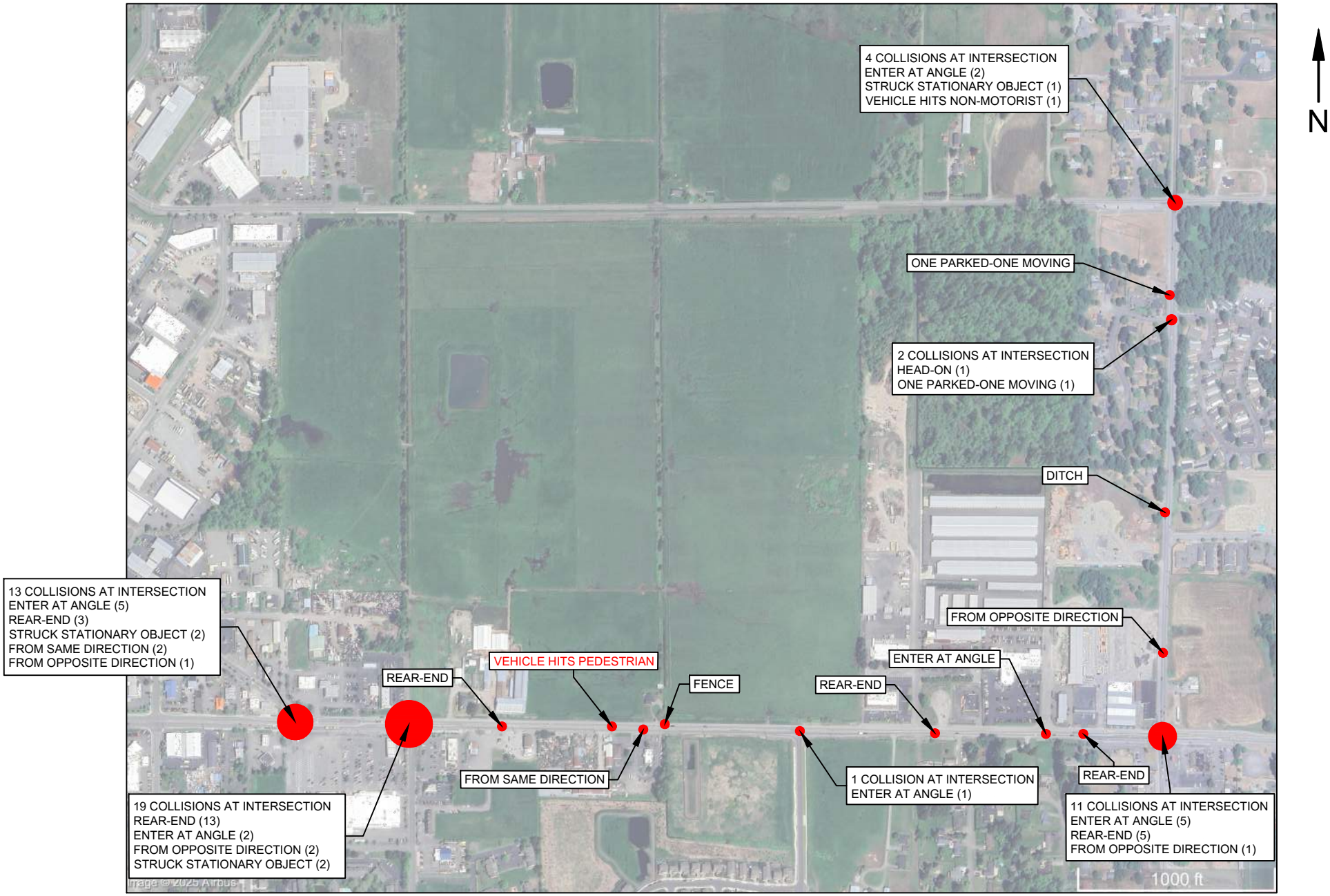
Collisions Involving Incapacitating Injury/Non-Motorists:
A more in-depth review of suspected serious injury/non-motorist involved collisions is provided below

Fatal Collision: The fatal collision occurred along SR 410 (milepost 25.11) in June of 2019 at around 1:10 AM when a vehicle going straight ahead struck a pedestrian. The weather conditions are listed as clear with a dry roadway surface and lighting conditions are listed as dark – with streetlights on. The driver contributing circumstance is listed as inattention.

Suspected Serious Injury Collision: The suspected serious collision occurred at the intersection of Farman Street N & Alpine Place in June of 2022 at around 5:25 PM. The collision type is listed as head-on with no contributing circumstance. The weather is listed as raining with a wet roadway surface.

Non-Motorist Collision: The collision occurred at the intersection of Farman Street N & Battersby Avenue in September of 2021 when a vehicle failed to grant the non-motorist right-of-way when making a left turn and struck the non-motorist. Weather conditions are listed as overcast with a dry roadway surface. The collision resulted in a suspected minor injury.

Figure 8 on the following page provides a collision history map.



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COLLISION HISTORY MAP
FIGURE 8

4. FORECAST TRAFFIC DEMAND & ANALYSIS

4.1 Project Trip Generation

Trip generation is defined as the number of vehicle movements that enter or exit the respective project site during a designated time period, such as a specific peak hour (AM or PM) or an entire day. The magnitude of the anticipated vehicle trip generation for the project was derived from the Institute of Transportation Engineers (ITE) publication, *Trip Generation,* 11th Edition. The designated Land Use Code (LUC) is defined as LUC 220 – Multifamily Housing (Low-Rise). Dwelling units were used as the input variable with ITE equations to determine trip ends.

LUC 220 shows high variability between the unadjusted curve equations and average rates, particularly for developments with fewer than 100 units. To improve accuracy, ITE data was filtered to include only samples with 30 to 90 units, resulting in a more representative fitted curve equation. The filtered ITE data sheets and equations are provided in the appendix. **Table 5** below summarizes the project's estimated trip generation.

Table 5: Project Trip Generation

Land Use	Units	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Multifamily (LUC 220)	60	460	9	18	**27**	19	14	**33**

Rainier Lodging is estimated to generate 460 average weekday daily trips. This includes 27 trips during the AM peak hour (9 inbound / 18 outbound) and 33 trips during the PM peak hour (19 inbound / 14 outbound).

4.2 Distribution & Assignment

Trip distribution describes the anticipated travel routes for inbound and outbound project traffic during the peak hour study periods. Trip distribution is based on proximity to major arterial routes and on previous projects in the area. Trip distribution has been assigned with a 40%/60% north/south split at the point of access via Farman Street N.

Figures 9 and 10 illustrate the AM and PM peak hour trip distribution and assignment, respectively.

4.3 Future Peak Hour Volumes

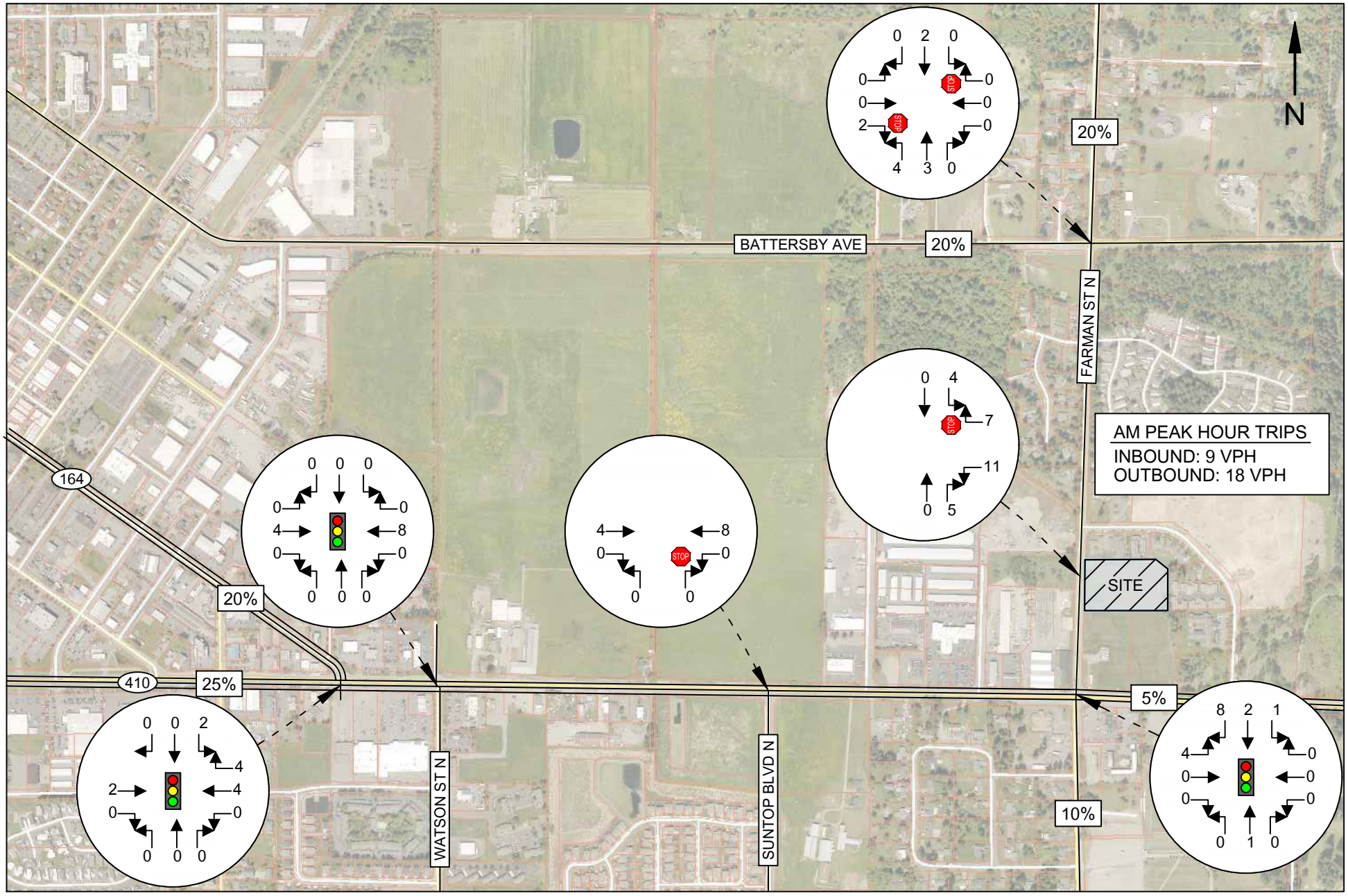
A 6-year horizon of 2031 was used for future traffic delay analysis. Forecast 2031 background traffic volumes were derived by applying a three percent compound annual growth rate[6] to the existing AM and PM peak hour volumes depicted in Figures 4 and 5.

In addition to the background growth rate, the following pipeline projects were included in forecast analysis: Gracepoint NW, Watson Street Apartments, Battersby Plat, Work MPH (Crystal Mountain MHC), The Enumclaw Aquatic Center, Mazatlan Enumclaw, Mountain View Multi, Grainery II, Holdener Phase I, Cole Street Storage, Pickle Farm, Sunrise Meadows/Holdener Phase II, Fiske 410, Gateway Commercial, Stevenson/Gambrel Meadows, and Gateway Plat.

Figures 11 and 12 present pipeline volumes during the AM and PM peak hours. **Figures 13 and 14** display the forecasted 2031 AM and PM peak hour volumes without the project-related trips. **Figures 15 and 16** depict the anticipated 2031 peak hour volumes with the inclusion of the project-related trips.

Additionally, the appendix includes **Figures A, B, C, and D**, which focus on the City's long-term planning. These figures illustrate the forecast 2045 (20-year horizon) AM and PM peak hour volumes both without and with the project.

[6] Per 202 Roosevelt Scoping Comments (12/4/2024).



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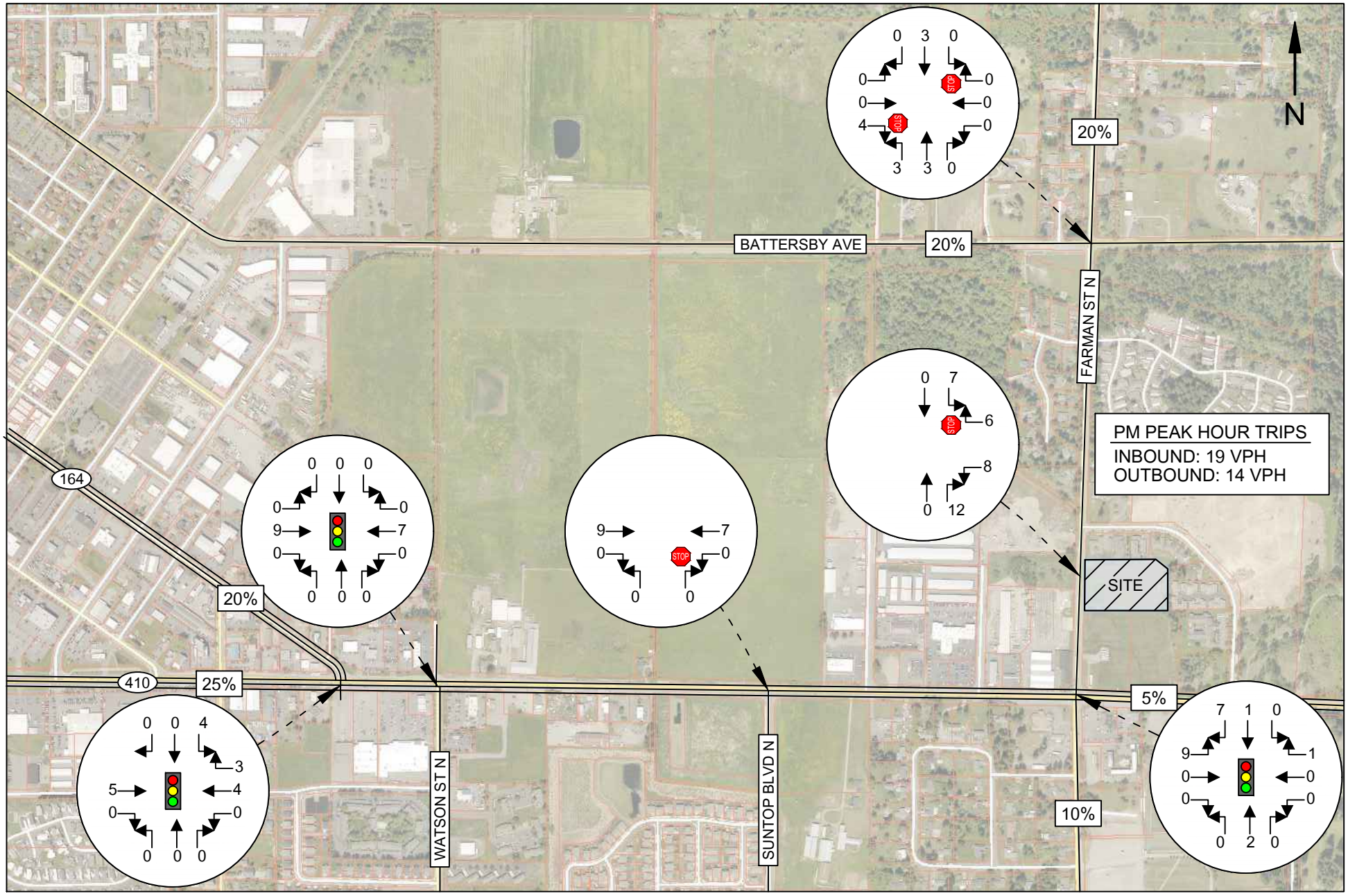
AM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 9



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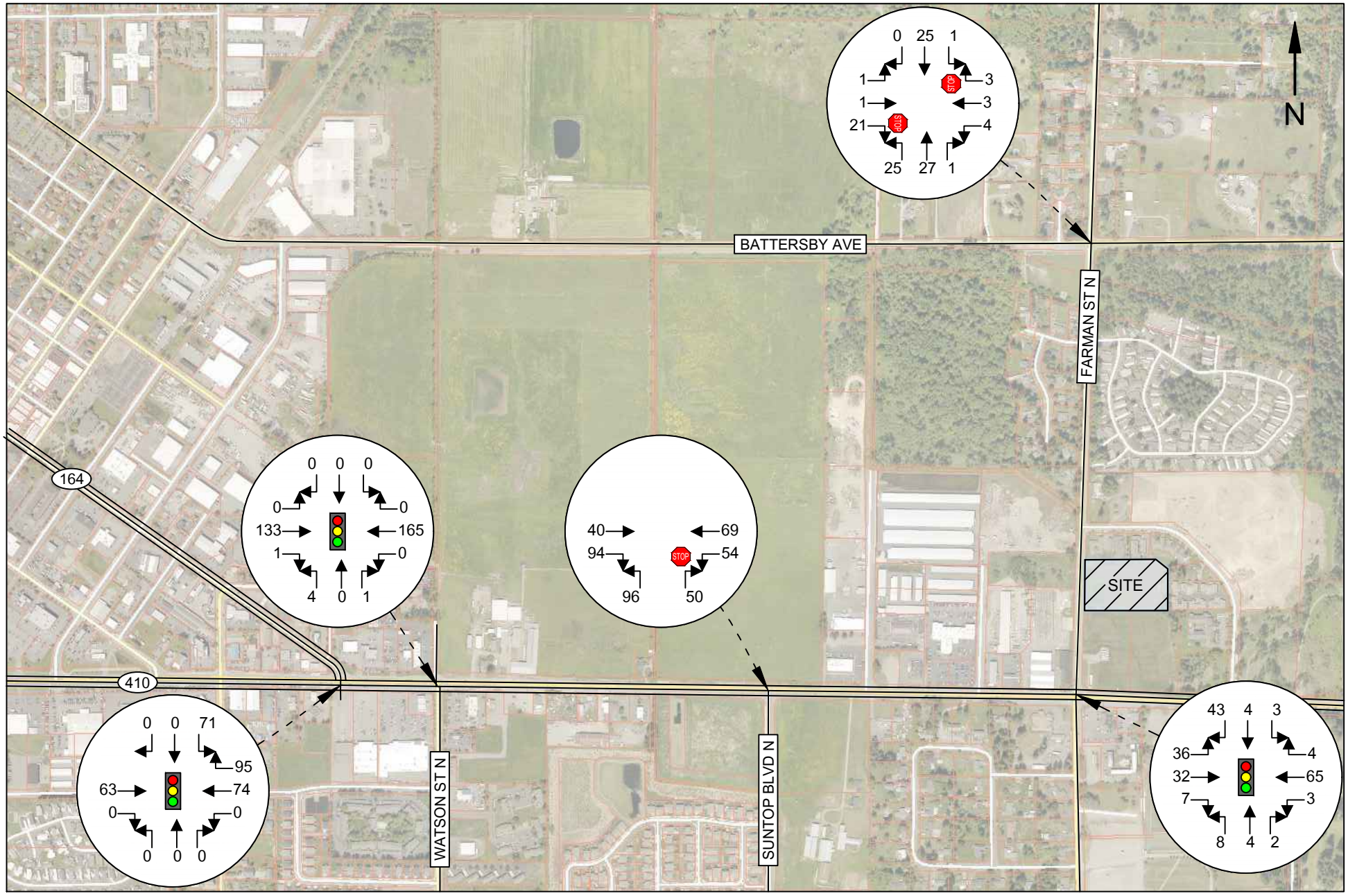
PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 10



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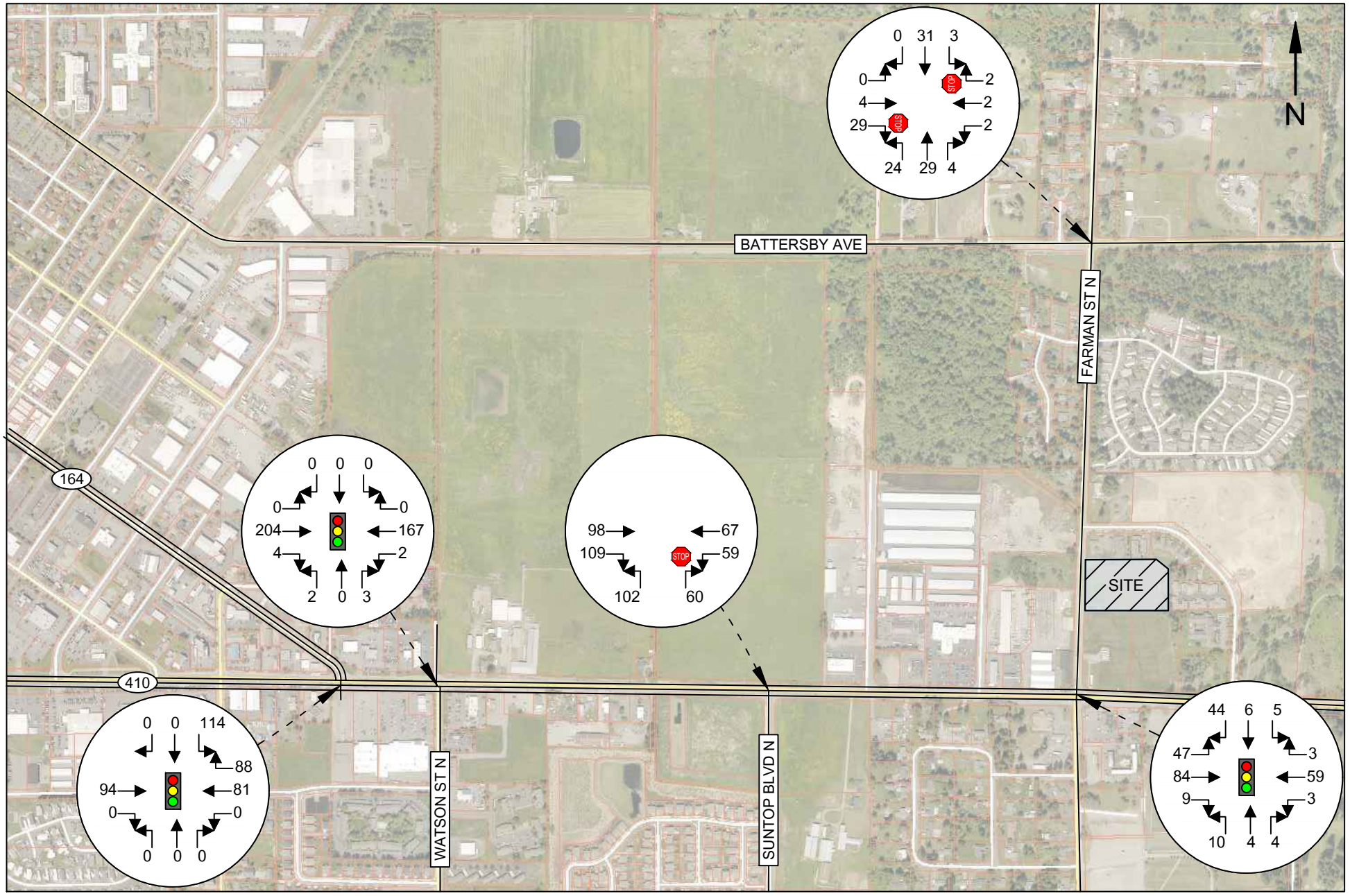
AM PEAK HOUR PIPELINE VOLUMES
FIGURE 11



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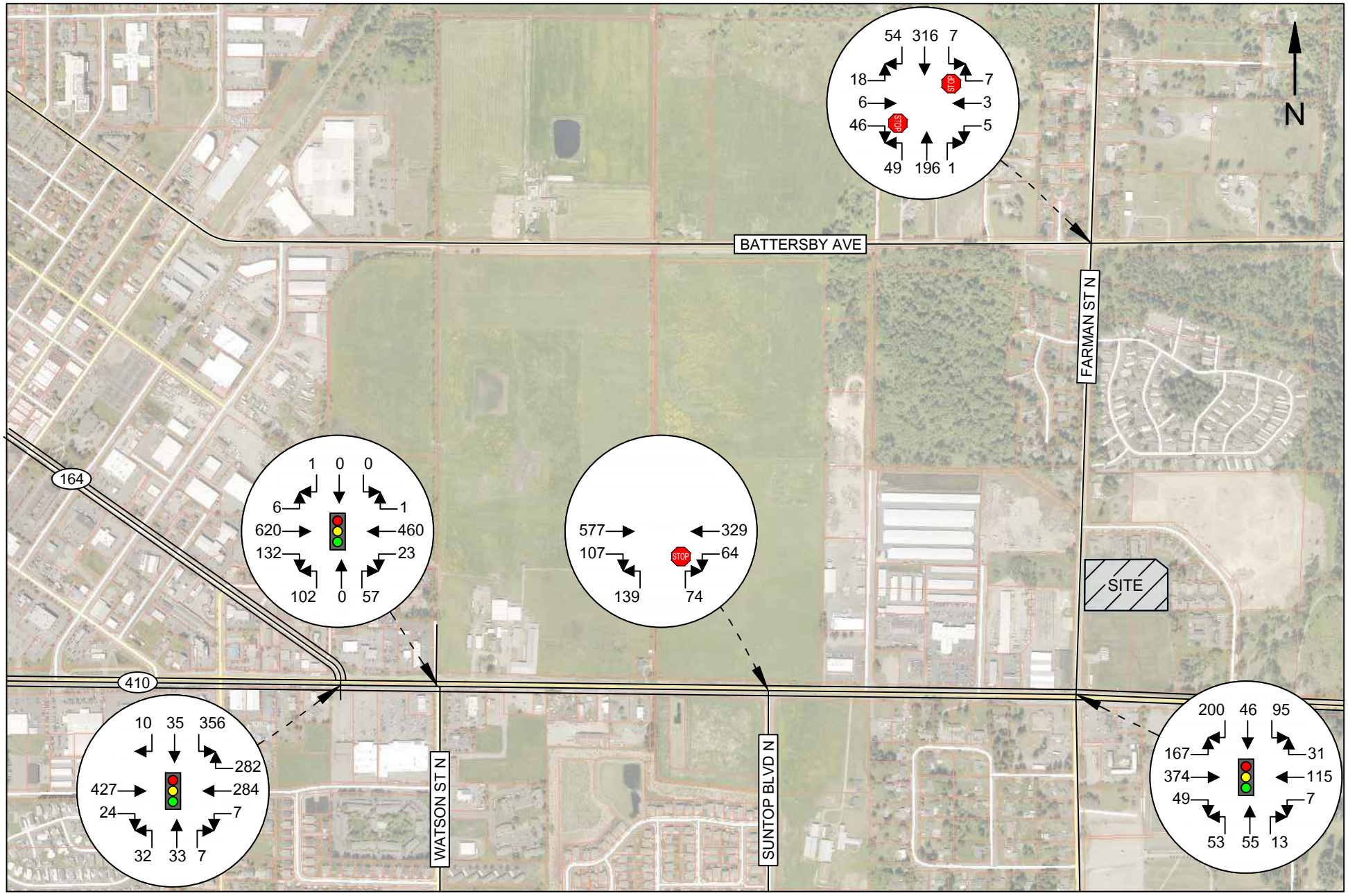
PM PEAK HOUR PIPELINE VOLUMES
FIGURE 12



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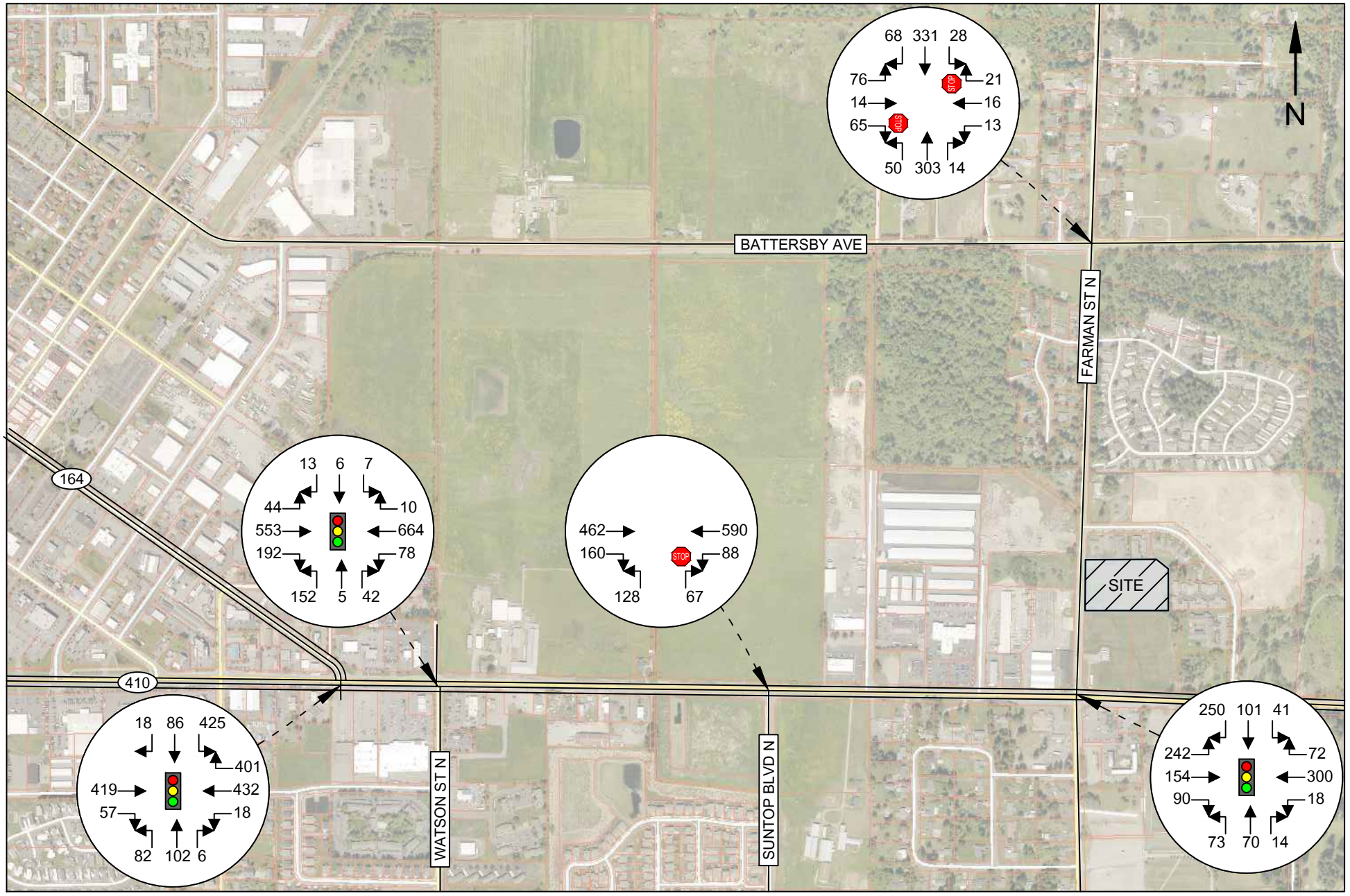
FORECAST 2031 AM PEAK HOUR VOLUMES WITHOUT PROJECT
FIGURE 13



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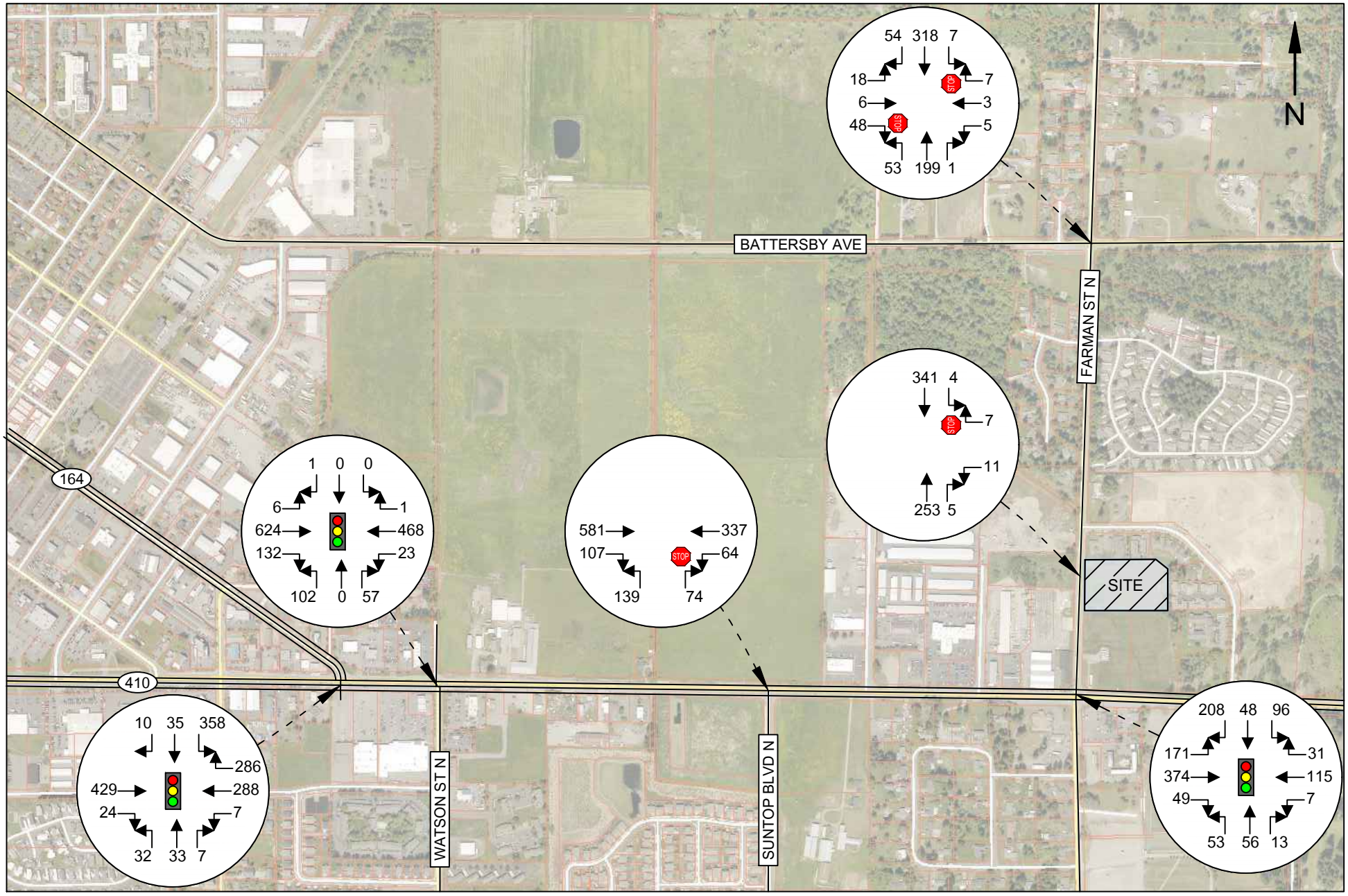
FORECAST 2031 PM PEAK HOUR VOLUMES WITHOUT PROJECT
FIGURE 14



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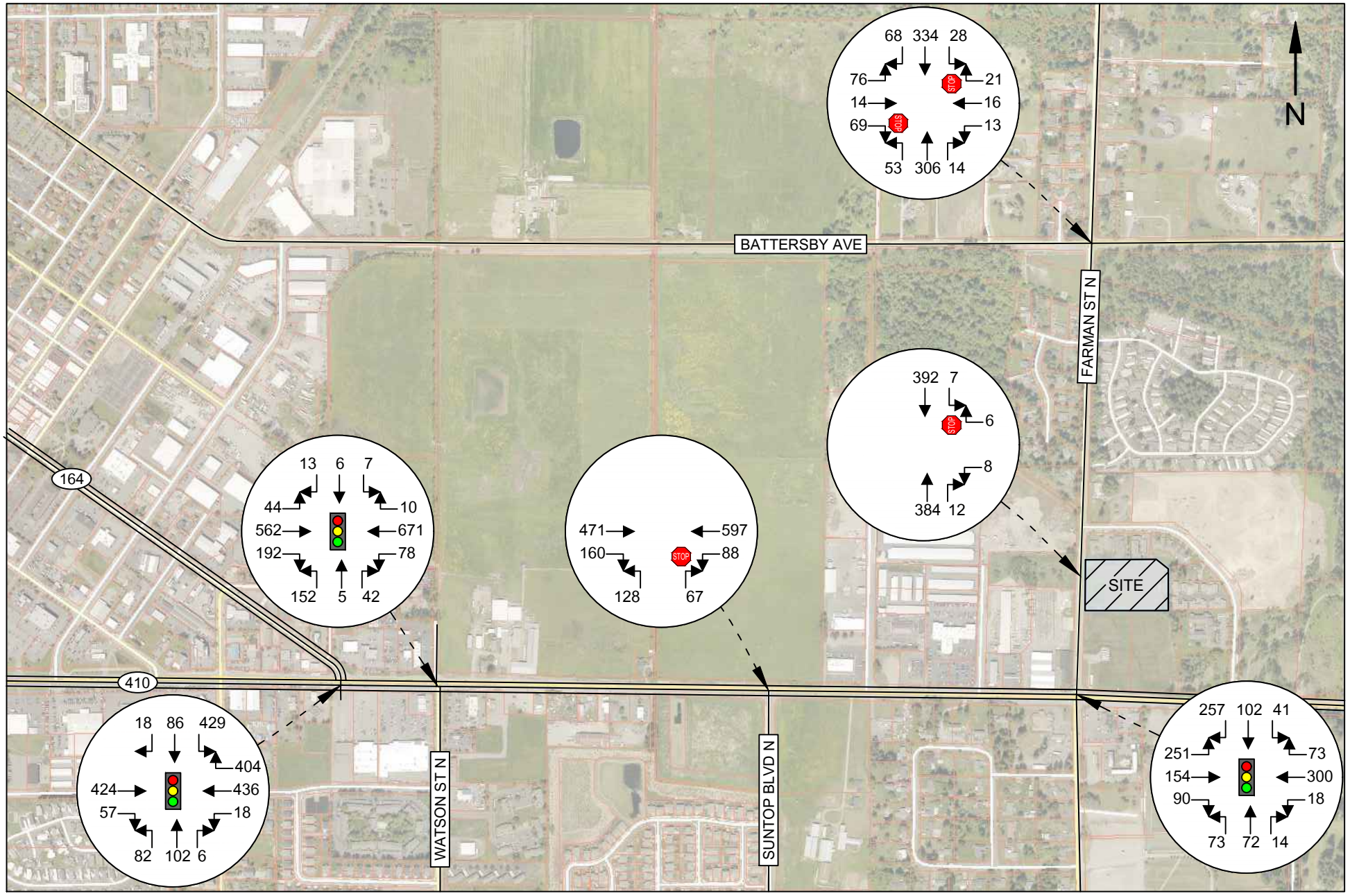
FORECAST 2031 AM PEAK HOUR VOLUMES WITH PROJECT
FIGURE 15



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FORECAST 2031 PM PEAK HOUR VOLUMES WITH PROJECT
FIGURE 16

4.4 Future Level of Service

Level of service analyses were made of the future peak hour volumes without (background) and with project related trips added to the key roadways and intersections. This analysis once again involved the use of the *Synchro 12* analysis program. Per WSDOT policy, the peak hour factor (PHF) has been set to 1.0 for all state route intersections. Delays for each study/access intersection under future 2031 conditions are shown below in **Table 6**.

The intersection of SR 410 & Suntop Boulevard N is scheduled for the construction of a roundabout by way of the Gateway project. As such, the intersection includes a scenario with the aforementioned roundabout in place.

Table 6: Forecast 2031 Peak Hour Level of Service

Delays given in Seconds Per Vehicle

		Without Project		*With Project*	
Intersection	**Peak-Hour**	**LOS**	**Delay**	**LOS**	**Delay**
SR 410 & SR 164	AM	B	17.8	B	17.9
	PM	D	36.2	D	36.8
SR 410 & Watson St N	AM	B	17.9	B	18.0
	PM	C	23.6	C	23.7
SR 410 & Suntop Blvd N	AM	E	43.7	E	45.3
	PM	**F**	**65.8**	**F**	**69.8**
	With Roundabout[7]		AM	A	6.4
			PM	A	6.3
SR 410 & Farman St N	AM	B	14.7	B	14.9
	PM	B	17.4	B	17.7
Farman St N & Battersby Ave	AM	C	16.4	C	16.7
	PM	D	34.7	E	36.2
Farman St N & Access	AM	--	--	B	12.3
	PM	--	--	B	14.2

All intersections are shown to continue to meet WSDOT and City Level of Service standards (LOS D/E or better), expect for the intersection of SR 410 & Suntop Boulevard N.

SR 410 & Suntop Boulevard N: Is shown to degrade to LOS F conditions with or without the project. However, a City Ordinance is in-place that requires the construction of a roundabout that is tied to the development of the commercial property on the southwest and southeast quadrants of the intersection. This development was included as pipeline and with the roundabout, the delays would improve to LOS A.

[7] Level of Service outputs from the SR 410 & Suntop Boulevard ICE – 11-03-2023 (Heath & Associates).

4.5 Left Turn Guidelines

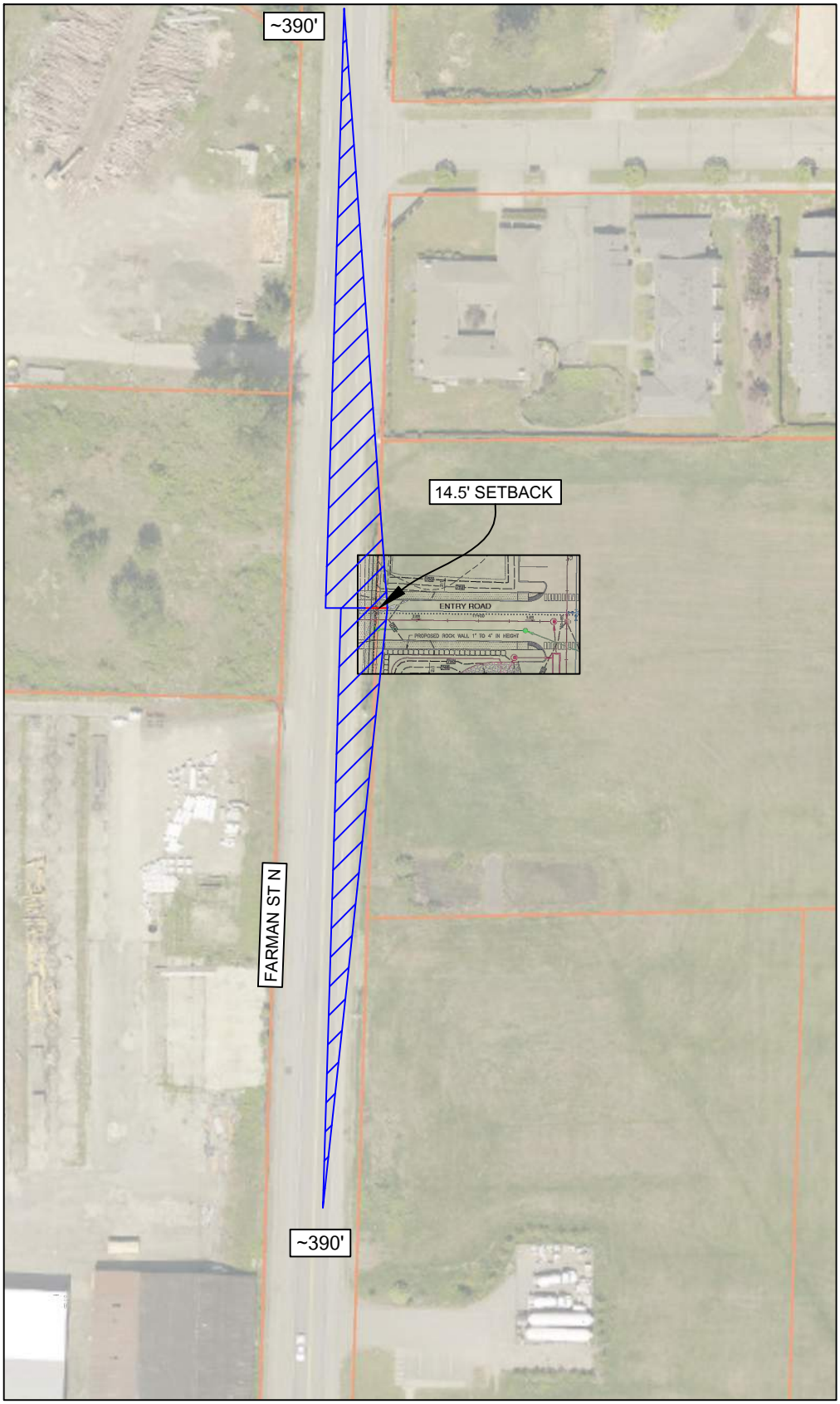
Left turn lanes are a means of providing necessary storage space for left turning vehicles at intersections. Procedures prescribed by WSDOT Design Manual Exhibit 1310-9 were used to determine whether the site's access on Farman Street N met typical thresholds for including a dedicated southbound left-turn lane. Using the forecast 2031 AM and PM peak hour with project volumes, a left turn is not warranted under either scenario. Refer to the appendix for the left turn warrant nomographs.

4.6 Project Access Sight Distance

Site ingress/egress is proposed via one new access point extending east from Farman Street N, just south of Mountain View Road.

Access Sight Distance:
Based on AASHTO standards[8] and a 35-mph speed limit along Mountain View Drive, sight lines are recommended to meet a minimum of 390 feet in both the north and south directions. Preliminary measurements of the access indicate sight lines meet the 390-foot requirement. No sight deficiencies are identified. Refer to **Figure 17** on the following page for the intersection's sight distance triangles.

[8] AASHTO. "A Policy on Geometric Design of Highway and Streets" 7th Edition. (2018).



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SIGHT DISTANCE
FIGURE 17

5. CONCLUSIONS & MITIGATION

Rainier Lodging is a proposed residential development consisting of 60 apartment units located within the Enumclaw city limits. The 3.40-acre site lies within a single tax parcel and is bordered to the west by Farman Street N. Access to the site is proposed via a single new roadway that would extend east from Farman Street N. Existing operations at nearby intersections were found to operate at LOS C or better, meeting both City and State level of service standards (LOS D/E). A review of collision history identified 60 reported collisions within the study area between 2019 and 2023 and is summarized in Section 3.7.

Based on ITE data, the project is estimated to generate 460 average weekday daily trips with 27 AM peak hour trips and 33 PM peak hour trips. Forecast 2031 analysis included a three percent annual growth rate along with 16 in-process developments as pipeline. Forecast 2031 AM and PM peak hour level of service was shown to operate within the LOS D or better ranges except for the intersection of SR 410 & Suntop Boulevard N operating at LOS F with or without the project. However, with the construction of a planned roundabout, this intersection would operate with LOS A conditions. A dedicated southbound left-turn lane did not meet WSDOT's minimum thresholds and therefore was not determined to be required at the Farman Street N access intersection.

Based on the above analysis, no intersection deficiencies or off-site mitigation is identified as a result of the proposed development.

The project would be subject to Transportation Impact Fees per EMC 19.24. Transportation Impact Fees are assessed per dwelling unit at a cost of $1,986.00. With 60 new dwelling units, TIF is estimated at:

60 units X $1,986.00 = **$119,160.00**

Final fees are subject to City assessment with rates in effect at such time.

Please feel free to contact me should you have any questions.

Aaron Van Aken, P.E., PTOE

RAINIER LODGING

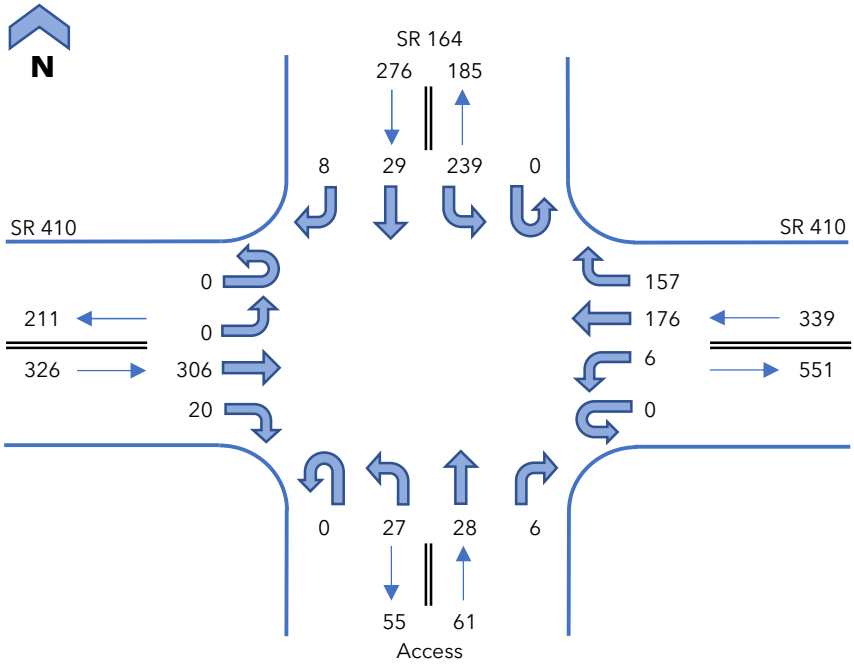
TRAFFIC IMPACT ANALYSIS

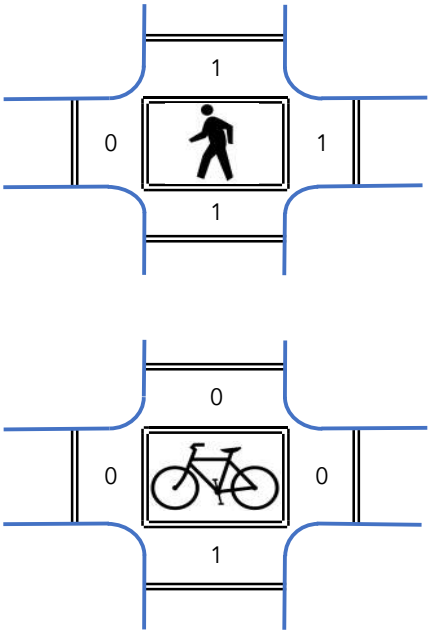
APPENDIX
Traffic Counts

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

SR 410 & SR 164





Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Access Northbound				SR 164 Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
7:00 AM	0	0	48	7	0	2	36	35	0	9	3	0	0	29	4	1	174	
7:15 AM	0	0	63	4	0	0	40	30	0	2	5	0	0	40	7	0	191	
7:30 AM	0	0	63	4	0	1	60	31	0	4	7	0	0	48	10	0	228	
7:45 AM	0	0	76	3	0	0	56	53	0	5	8	2	0	61	11	2	277	870
8:00 AM	0	0	77	8	0	0	38	36	0	8	7	3	0	66	8	4	255	951
8:15 AM	0	0	78	7	0	2	31	32	0	5	5	1	0	58	3	0	222	982
8:30 AM	0	0	75	2	0	4	51	36	0	9	8	0	0	54	7	2	248	1002
8:45 AM	0	0	79	5	0	1	67	46	0	9	5	2	0	39	12	3	268	993
Count Total	0	0	559	40	0	10	379	299	0	51	48	8	0	395	62	12	1863	--
Peak Hour Total	0	0	306	20	0	6	176	157	0	27	28	6	0	239	29	8	1002	--
PHF	0.96				0.78				0.85				0.88				0.90	--
Heavy Vehicles	0	0	27	3	0	0	11	5	0	2	4	1	0	11	2	1	67	--
HV %	0.0%	0.0%	8.8%	15.0%	0.0%	0.0%	6.3%	3.2%	0.0%	7.4%	14.3%	16.7%	0.0%	4.6%	6.9%	12.5%	6.7%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
7:00 AM	5	4	0	7	16
7:15 AM	8	5	0	10	23
7:30 AM	3	7	1	1	12
7:45 AM	4	7	0	2	13
8:00 AM	7	4	1	5	17
8:15 AM	9	3	1	5	18
8:30 AM	10	2	5	2	19
8:45 AM	2	9	0	2	13
Count Total	48	41	8	34	131
Peak Hour Total	30	16	7	14	67
Peak Hour HV%	9.2%	4.7%	11.5%	5.1%	6.7%

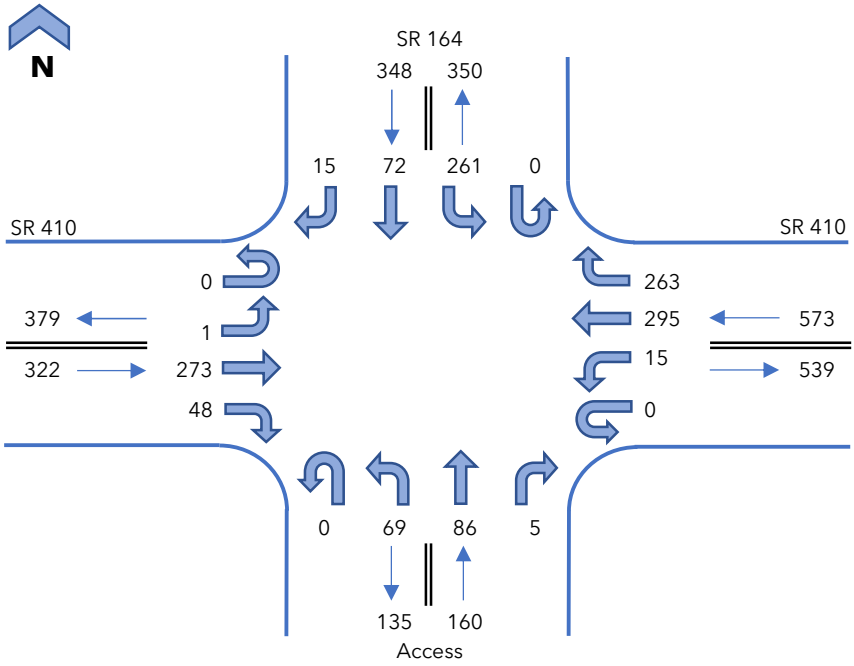
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
1	0	0	0	1
0	0	1	0	1
1	0	0	1	2
2	0	1	4	7
1	0	1	1	3

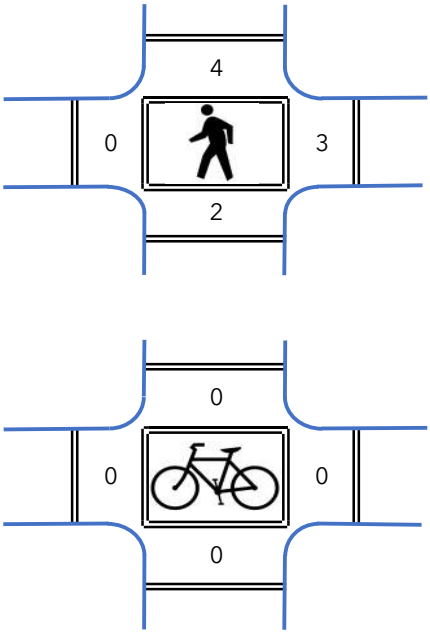
Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

SR 410 & SR 164





Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Access Northbound				SR 164 Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
4:00 PM	0	0	48	10	0	3	85	49	0	15	12	1	0	54	11	5	293	
4:15 PM	0	0	46	16	0	4	73	64	0	14	13	3	0	58	22	7	320	
4:30 PM	0	0	56	14	0	7	58	60	0	18	24	2	0	60	21	5	325	
4:45 PM	0	1	77	10	0	1	71	64	0	17	14	1	0	64	18	4	342	1280
5:00 PM	0	0	70	17	0	1	68	74	0	14	19	0	0	81	26	2	372	1359
5:15 PM	0	0	70	7	0	6	98	65	0	20	29	2	0	56	7	4	364	1403
5:30 PM	0	0	48	8	0	3	54	51	0	14	19	2	0	51	14	3	267	1345
5:45 PM	0	0	47	20	0	6	64	56	0	13	16	0	0	45	24	1	292	1295
Count Total	0	1	462	102	0	31	571	483	0	125	146	11	0	469	143	31	2575	--
Peak Hour Total	0	1	273	48	0	15	295	263	0	69	86	5	0	261	72	15	1403	--
PHF	0.91				0.85				0.78				0.80				0.94	--
Heavy Vehicles	0	0	12	0	0	1	15	8	0	0	3	0	0	4	1	1	45	--
HV %	0.0%	0.0%	4.4%	0.0%	0.0%	6.7%	5.1%	3.0%	0.0%	0.0%	3.5%	0.0%	0.0%	1.5%	1.4%	6.7%	3.2%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
4:00 PM	2	3	0	2	7
4:15 PM	0	5	1	2	8
4:30 PM	2	7	2	4	15
4:45 PM	6	7	0	0	13
5:00 PM	0	4	1	1	6
5:15 PM	4	6	0	1	11
5:30 PM	2	0	0	3	5
5:45 PM	0	4	1	5	10
Count Total	16	36	5	18	75
Peak Hour Total	12	24	3	6	45
Peak Hour HV%	3.7%	4.2%	1.9%	1.7%	3.2%

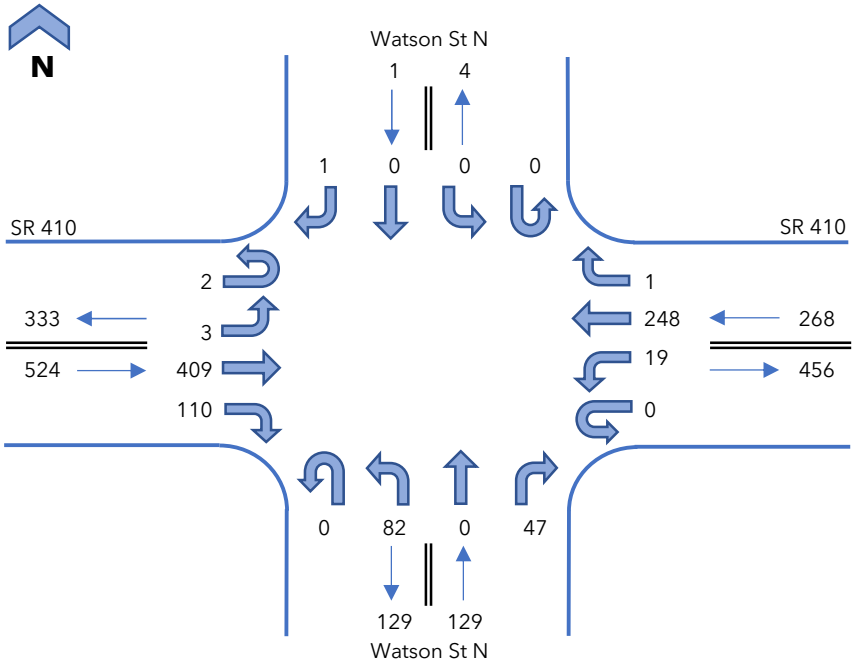
Pedestrians (Leg)				
E	W	N	S	Total
1	0	0	1	2
3	0	0	3	6
0	0	0	0	0
1	0	1	0	2
0	0	3	0	3
2	0	0	2	4
0	1	2	0	3
0	0	0	0	0
7	1	6	6	20
3	0	4	2	9

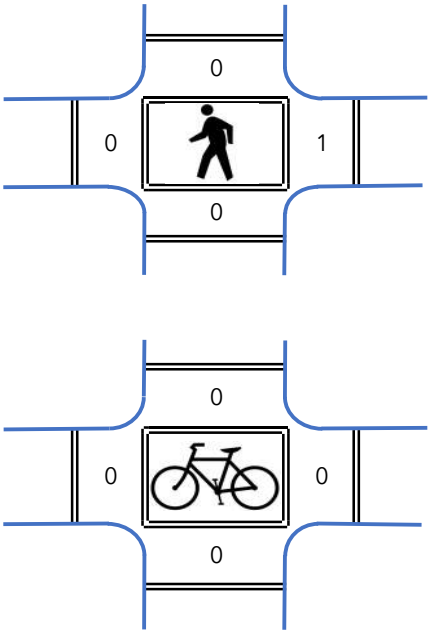
Bicycles (Leg)				
E	W	N	S	Total
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

SR 410 & Watson Street N





Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Watson St N Northbound				Watson St N Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
7:00 AM	0	0	52	17	0	3	46	0	0	26	0	7	0	0	0	0	151	
7:15 AM	1	0	80	16	0	4	51	0	0	17	0	7	0	0	0	0	176	
7:30 AM	0	0	84	22	0	5	72	0	0	22	0	9	0	0	0	0	214	
7:45 AM	0	0	106	30	0	9	84	0	0	26	0	18	0	0	0	0	273	814
8:00 AM	0	0	104	32	0	1	52	0	0	20	0	12	0	0	0	0	221	884
8:15 AM	1	3	110	22	0	2	48	0	0	13	0	11	0	0	0	0	210	918
8:30 AM	1	0	89	26	0	7	64	1	0	23	0	6	0	0	0	1	218	922
8:45 AM	0	3	98	24	0	9	90	0	0	24	0	8	0	0	0	0	256	905
Count Total	3	6	723	189	0	40	507	1	0	171	0	78	0	0	0	1	1719	--
Peak Hour Total	2	3	409	110	0	19	248	1	0	82	0	47	0	0	0	1	922	--
PHF	0.96				0.72				0.73				0.25				0.84	--
Heavy Vehicles	0	0	38	3	0	0	18	0	0	2	0	2	0	0	0	0	63	--
HV %	0.0%	0.0%	9.3%	2.7%	0.0%	0.0%	7.3%	0.0%	0.0%	2.4%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	6.8%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
7:00 AM	11	4	1	0	16
7:15 AM	22	7	0	0	29
7:30 AM	4	8	0	0	12
7:45 AM	4	8	1	0	13
8:00 AM	10	3	1	0	14
8:15 AM	16	4	2	0	22
8:30 AM	11	3	0	0	14
8:45 AM	3	10	0	0	13
Count Total	81	47	5	0	133
Peak Hour Total	41	18	4	0	63
Peak Hour HV%	7.8%	6.7%	3.1%	0.0%	6.8%

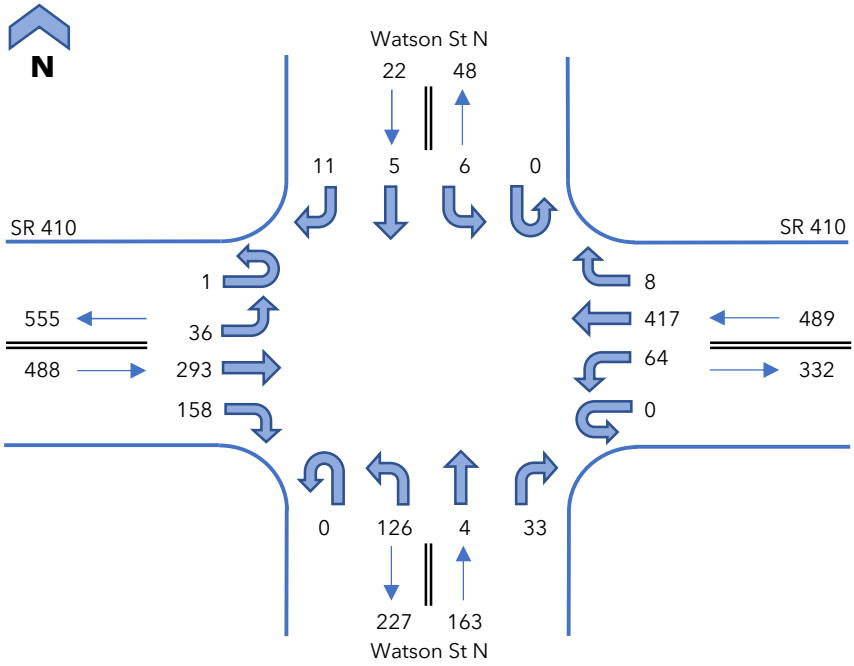
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
2	0	0	0	2
1	0	0	0	1

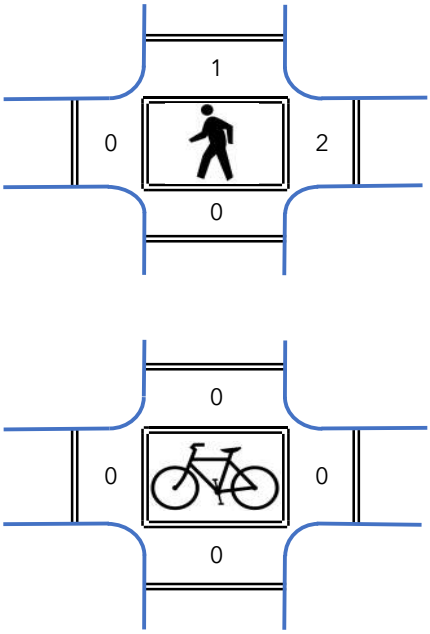
Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

SR 410 & Watson Street N





Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Watson St N Northbound				Watson St N Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
4:00 PM	0	4	59	31	0	22	101	0	0	28	1	11	0	1	0	0	258	
4:15 PM	0	5	69	34	0	16	107	0	0	24	0	5	0	1	1	1	263	
4:30 PM	0	8	59	40	0	13	93	2	0	25	0	7	0	2	1	3	253	
4:45 PM	1	8	89	30	0	17	100	1	0	30	2	11	0	1	0	0	290	1064
5:00 PM	0	10	71	44	0	19	101	2	0	36	2	8	0	1	2	4	300	1106
5:15 PM	0	10	74	44	0	15	123	3	0	35	0	7	0	2	2	4	319	1162
5:30 PM	0	4	54	34	0	10	83	1	0	25	2	8	0	0	0	4	225	1134
5:45 PM	0	7	50	32	0	14	81	1	0	34	2	8	0	1	0	2	232	1076
Count Total	1	56	525	289	0	126	789	10	0	237	9	65	0	9	6	18	2140	--
Peak Hour Total	1	36	293	158	0	64	417	8	0	126	4	33	0	6	5	11	1162	--
PHF	0.95				0.87				0.89				0.69				0.91	--
Heavy Vehicles	0	0	17	1	0	3	17	1	0	2	0	0	0	0	0	0	41	--
HV %	0.0%	0.0%	5.8%	0.6%	0.0%	4.7%	4.1%	12.5%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
4:00 PM	1	2	0	0	3
4:15 PM	4	5	0	0	9
4:30 PM	5	4	0	0	9
4:45 PM	7	7	0	0	14
5:00 PM	1	7	0	0	8
5:15 PM	5	3	2	0	10
5:30 PM	4	0	0	0	4
5:45 PM	2	4	0	0	6
Count Total	29	32	2	0	63
Peak Hour Total	18	21	2	0	41
Peak Hour HV%	3.7%	4.3%	1.2%	0.0%	3.5%

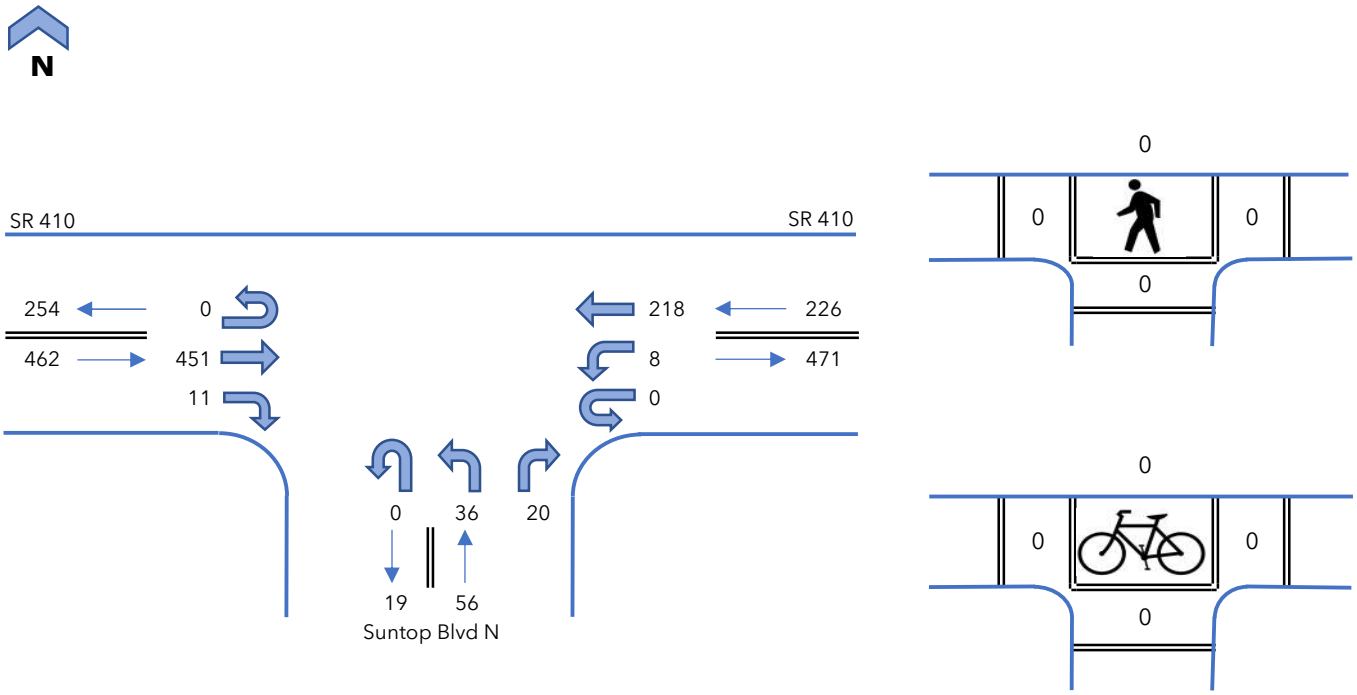
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	1	1
0	0	0	0	0
0	0	1	0	1
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	1	0	2
2	1	2	1	6
2	0	1	0	3

Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	1	2
1	0	0	1	2
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

SR 410 & Suntop Boulevard N



Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Suntop Blvd N Northbound								15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT						
7:00 AM	0	--	64	0	0	0	37	--	0	3	--	3	--	--	--	--	107	
7:15 AM	0	--	85	3	0	1	32	--	0	10	--	3	--	--	--	--	134	
7:30 AM	0	--	97	3	0	0	69	--	0	8	--	5	--	--	--	--	182	
7:45 AM	0	--	124	1	0	2	72	--	0	10	--	6	--	--	--	--	215	638
8:00 AM	0	--	116	5	0	2	42	--	0	8	--	6	--	--	--	--	179	710
8:15 AM	0	--	114	2	0	4	35	--	0	10	--	3	--	--	--	--	168	744
8:30 AM	0	--	103	7	0	1	59	--	0	6	--	3	--	--	--	--	179	741
8:45 AM	0	--	95	3	0	2	80	--	0	4	--	3	--	--	--	--	187	713
Count Total	0	--	798	24	0	12	426	--	0	59	--	32	--	--	--	--	1351	--
Peak Hour Total	0	--	451	11	0	8	218	--	0	36	--	20	--	--	--	--	744	--
PHF	0.92				0.76				0.88				--				0.87	--
Heavy Vehicles	0	--	28	1	0	1	19	--	0	0	--	0	--	--	--	--	49	--
HV %	0.0%	--	6.2%	9.1%	0.0%	12.5%	8.7%	--	0.0%	0.0%	--	0.0%	--	--	--	--	6.6%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
7:00 AM	9	2	0	--	11
7:15 AM	11	3	1	--	15
7:30 AM	5	8	0	--	13
7:45 AM	3	6	0	--	9
8:00 AM	9	4	0	--	13
8:15 AM	12	2	0	--	14
8:30 AM	12	2	0	--	14
8:45 AM	0	8	0	--	8
Count Total	61	35	1	--	97
Peak Hour Total	29	20	0	--	49
Peak Hour HV%	6.3%	8.8%	0.0%	--	6.6%

Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

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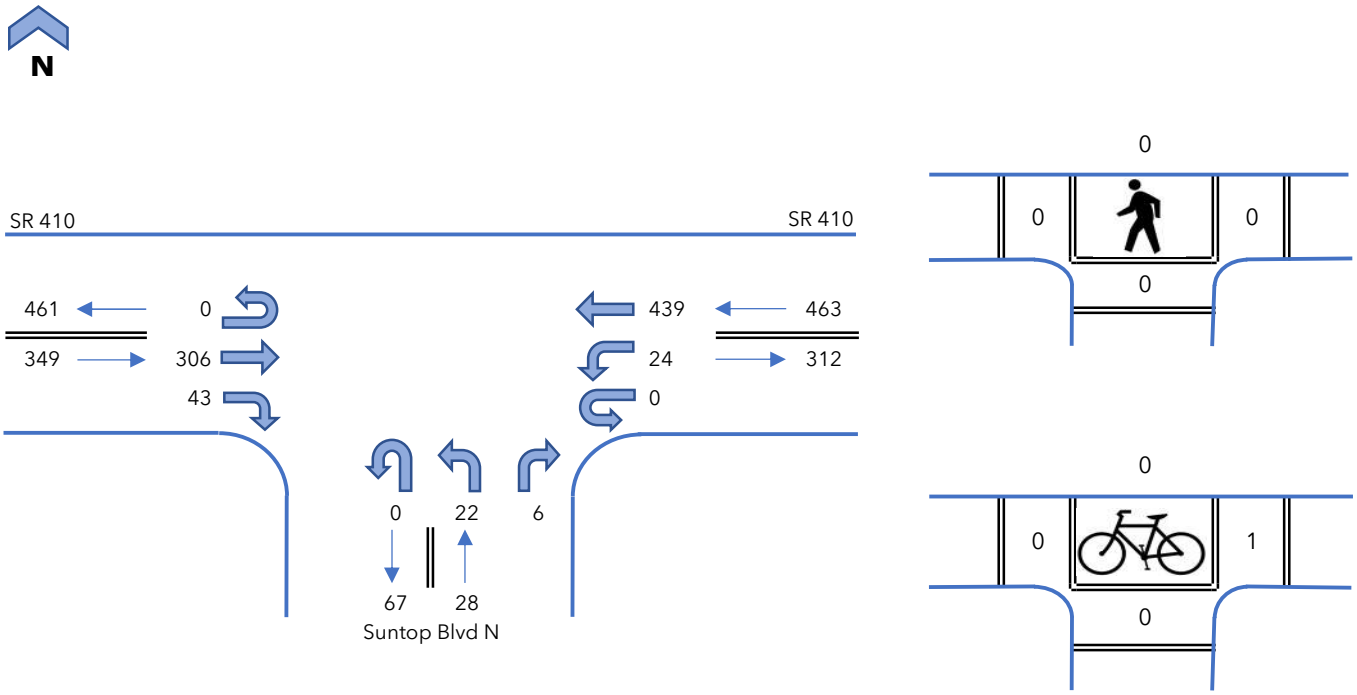
SR 410 & Suntop Boulevard N



Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Suntop Blvd N Northbound								15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT						
4:00 PM	0	--	71	7	0	5	124	--	0	3	--	2	--	--	--	--	212	
4:15 PM	0	--	66	7	0	4	108	--	0	4	--	1	--	--	--	--	190	
4:30 PM	0	--	61	8	0	6	96	--	0	4	--	2	--	--	--	--	177	
4:45 PM	0	--	87	9	0	9	107	--	0	4	--	3	--	--	--	--	219	798
5:00 PM	0	--	83	15	0	6	118	--	0	6	--	0	--	--	--	--	228	814
5:15 PM	0	--	75	11	0	3	118	--	0	8	--	1	--	--	--	--	216	840
5:30 PM	0	--	51	13	0	5	81	--	0	6	--	2	--	--	--	--	158	821
5:45 PM	0	--	52	9	0	1	79	--	0	3	--	1	--	--	--	--	145	747
Count Total	0	--	546	79	0	39	831	--	0	38	--	12	--	--	--	--	1545	--
Peak Hour Total	0	--	306	43	0	24	439	--	0	22	--	6	--	--	--	--	840	--
PHF	0.89				0.93				0.78				--				0.92	--
Heavy Vehicles	0	--	13	0	0	1	22	--	0	0	--	0	--	--	--	--	36	--
HV %	0.0%	--	4.2%	0.0%	0.0%	4.2%	5.0%	--	0.0%	0.0%	--	0.0%	--	--	--	--	4.3%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
4:00 PM	2	2	0	--	4
4:15 PM	3	5	0	--	8
4:30 PM	3	9	0	--	12
4:45 PM	6	5	0	--	11
5:00 PM	2	7	0	--	9
5:15 PM	2	2	0	--	4
5:30 PM	3	3	0	--	6
5:45 PM	2	2	0	--	4
Count Total	23	35	0	--	58
Peak Hour Total	13	23	0	--	36
Peak Hour HV%	3.7%	5.0%	0.0%	--	4.3%

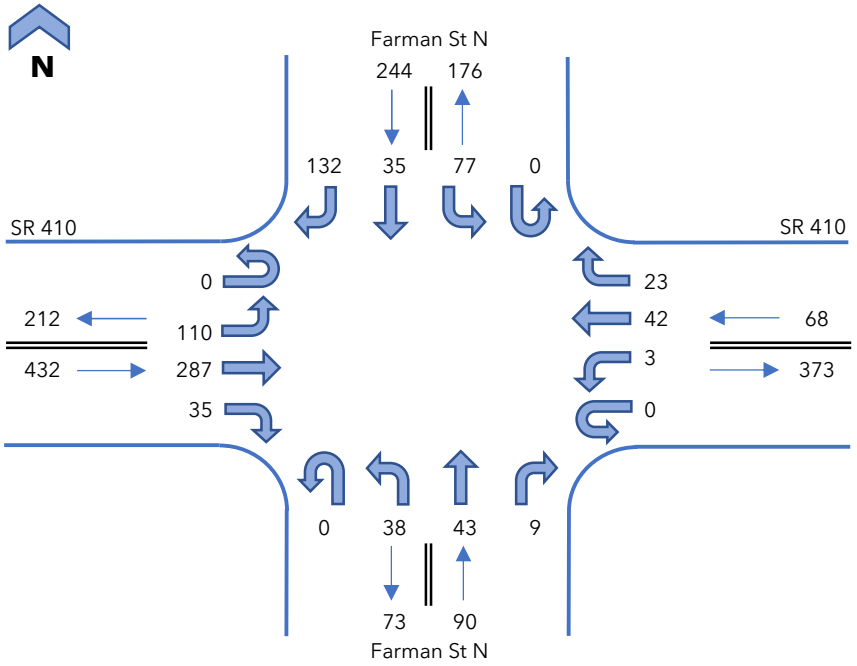
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

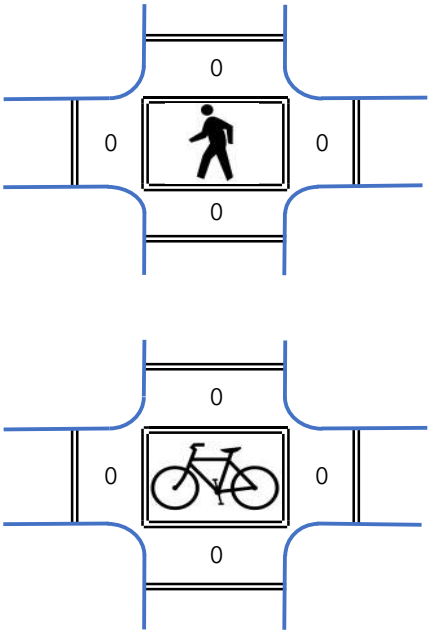
Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

SR 410 & Farman Street N





Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Farman St N Northbound				Farman St N Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
7:00 AM	0	16	37	3	0	1	10	11	0	10	7	2	0	10	6	19	132	
7:15 AM	0	15	56	9	0	0	4	9	0	8	5	2	0	21	9	20	158	
7:30 AM	0	17	62	7	0	2	4	5	0	12	6	3	0	12	12	53	195	
7:45 AM	0	26	65	15	0	1	9	7	0	11	10	3	0	25	14	52	238	723
8:00 AM	0	30	69	12	0	1	12	5	0	9	11	5	0	19	5	21	199	790
8:15 AM	0	24	81	4	0	1	4	4	0	8	10	1	0	18	10	25	190	822
8:30 AM	0	30	72	4	0	0	17	7	0	10	12	0	0	15	6	34	207	834
8:45 AM	0	21	54	10	0	1	17	5	0	11	7	0	0	15	11	48	200	796
Count Total	0	179	496	64	0	7	77	53	0	79	68	16	0	135	73	272	1519	--
Peak Hour Total	0	110	287	35	0	3	42	23	0	38	43	9	0	77	35	132	834	--
PHF	0.97				0.71				0.90				0.67				0.88	--
Heavy Vehicles	0	8	16	1	0	2	7	13	0	0	1	1	0	7	1	3	60	--
HV %	0.0%	7.3%	5.6%	2.9%	0.0%	66.7%	16.7%	56.5%	0.0%	0.0%	2.3%	11.1%	0.0%	9.1%	2.9%	2.3%	7.2%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
7:00 AM	9	8	0	1	18
7:15 AM	11	9	0	2	22
7:30 AM	5	6	2	3	16
7:45 AM	4	10	1	3	18
8:00 AM	4	5	0	5	14
8:15 AM	10	2	0	2	14
8:30 AM	7	5	1	1	14
8:45 AM	0	9	0	4	13
Count Total	50	54	4	21	129
Peak Hour Total	25	22	2	11	60
Peak Hour HV%	5.8%	32.4%	2.2%	4.5%	7.2%

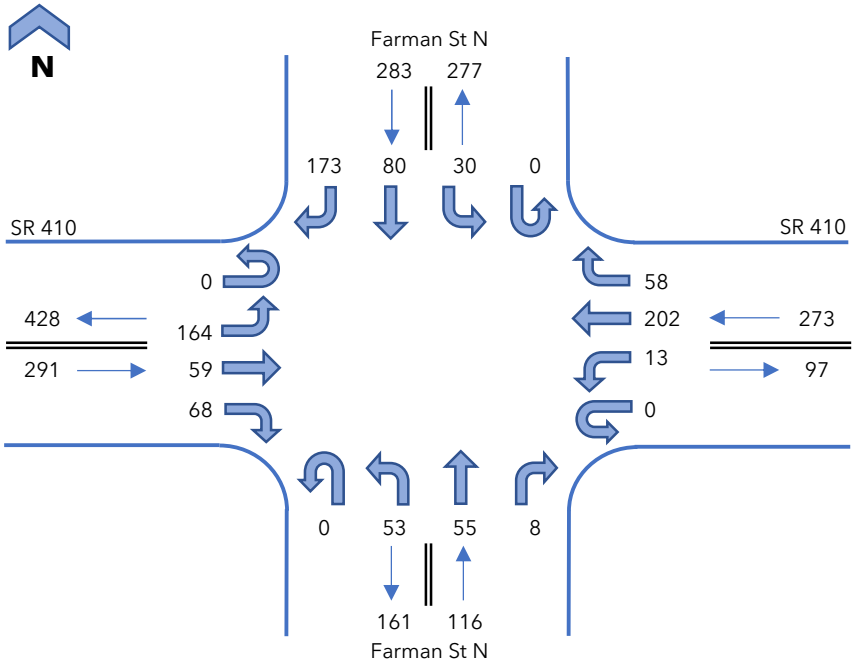
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

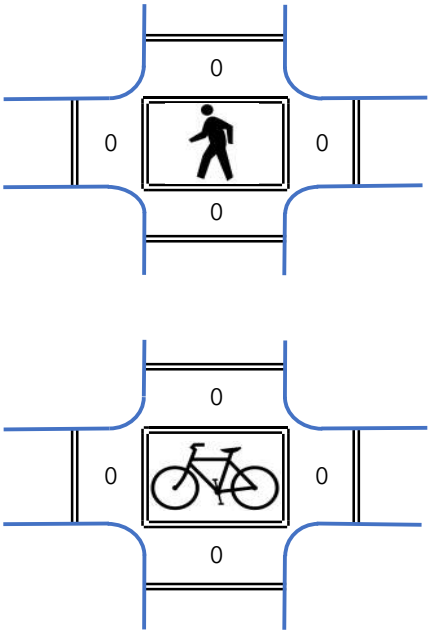
Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

SR 410 & Farman Street N





Interval Start Time	SR 410 Eastbound				SR 410 Westbound				Farman St N Northbound				Farman St N Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
4:00 PM	0	35	14	17	0	4	51	15	0	13	9	2	0	4	22	44	230	
4:15 PM	0	33	13	17	0	1	51	20	0	12	13	0	0	6	16	47	229	
4:30 PM	0	35	9	21	0	3	40	12	0	14	13	3	0	4	19	46	219	
4:45 PM	0	48	21	18	0	1	49	13	0	13	15	2	0	6	27	40	253	931
5:00 PM	0	43	11	18	0	4	58	17	0	12	16	2	0	10	14	44	249	950
5:15 PM	0	38	18	11	0	5	55	16	0	14	11	1	0	10	20	43	242	963
5:30 PM	0	23	9	13	0	5	29	9	0	15	9	1	0	5	16	32	166	910
5:45 PM	0	31	12	8	0	2	30	5	0	19	9	0	0	0	14	26	156	813
Count Total	0	286	107	123	0	25	363	107	0	112	95	11	0	45	148	322	1744	--
Peak Hour Total	0	164	59	68	0	13	202	58	0	53	55	8	0	30	80	173	963	--
PHF	0.84				0.86				0.97				0.97				0.95	--
Heavy Vehicles	0	1	3	0	0	0	4	0	0	0	1	0	0	1	0	5	15	--
HV %	0.0%	0.6%	5.1%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%	3.3%	0.0%	2.9%	1.6%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
4:00 PM	0	1	1	1	3
4:15 PM	1	1	0	3	5
4:30 PM	0	1	0	4	5
4:45 PM	3	2	0	2	7
5:00 PM	0	1	1	0	2
5:15 PM	1	0	0	0	1
5:30 PM	3	2	0	1	6
5:45 PM	1	1	0	0	2
Count Total	9	9	2	11	31
Peak Hour Total	4	4	1	6	15
Peak Hour HV%	1.4%	1.5%	0.9%	2.1%	1.6%

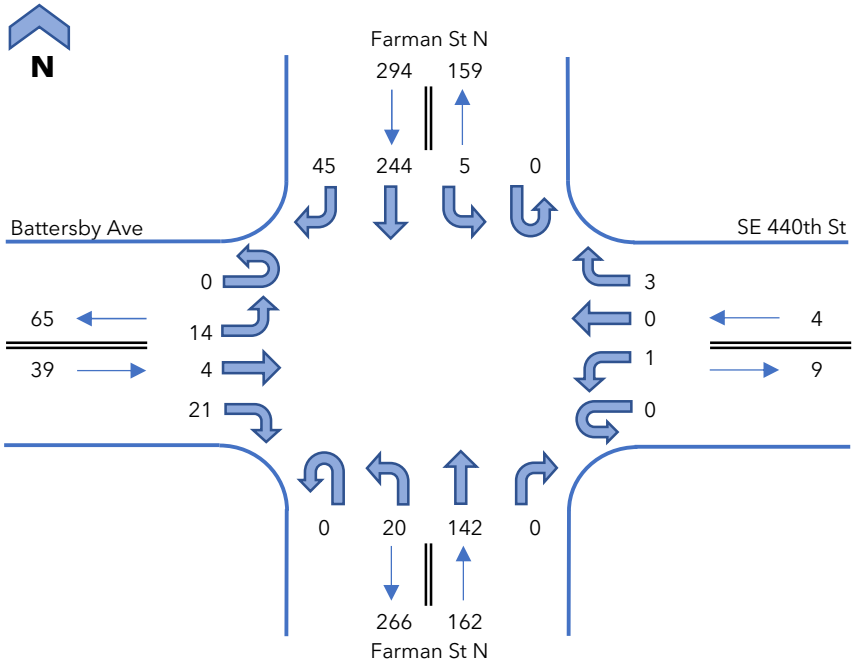
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

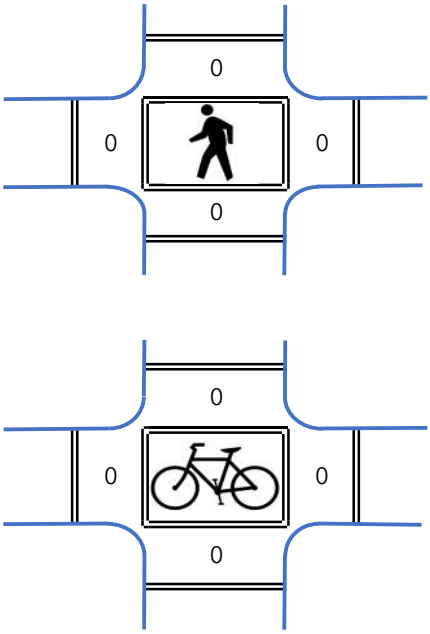
Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

Battersby Avenue (SE 440t Street) & Farman Street N





Interval Start Time	Battersby Ave Eastbound				SE 440th St Westbound				Farman St N Northbound				Farman St N Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
7:00 AM	0	3	0	3	0	1	0	0	0	4	24	0	0	1	33	5	74	
7:15 AM	0	1	0	2	0	0	0	0	0	1	27	0	0	3	49	10	93	
7:30 AM	0	3	0	6	0	1	0	0	0	2	25	0	0	1	69	9	116	
7:45 AM	0	3	0	5	0	0	0	0	0	11	40	0	0	1	87	13	160	443
8:00 AM	0	4	2	6	0	0	0	1	0	2	47	0	0	1	39	9	111	480
8:15 AM	0	4	2	4	0	0	0	2	0	5	30	0	0	2	49	14	112	499
8:30 AM	0	4	0	2	0	0	0	0	0	2	42	0	0	0	51	11	112	495
8:45 AM	0	7	1	1	0	0	1	0	0	6	33	0	0	2	60	13	124	459
Count Total	0	29	5	29	0	2	1	3	0	33	268	0	0	11	437	84	902	--
Peak Hour Total	0	14	4	21	0	1	0	3	0	20	142	0	0	5	244	45	499	--
PHF	0.81				0.50				0.79				0.73				0.78	--
Heavy Vehicles	0	1	2	2	0	0	0	1	0	0	28	0	0	2	15	1	52	--
HV %	0.0%	7.1%	50.0%	9.5%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	19.7%	0.0%	0.0%	40.0%	6.1%	2.2%	10.4%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
7:00 AM	1	0	8	2	11
7:15 AM	0	0	10	4	14
7:30 AM	0	0	5	2	7
7:45 AM	0	0	8	3	11
8:00 AM	3	0	9	10	22
8:15 AM	2	1	6	3	12
8:30 AM	0	0	8	4	12
8:45 AM	0	0	3	9	12
Count Total	6	1	57	37	101
Peak Hour Total	5	1	28	18	52
Peak Hour HV%	12.8%	25.0%	17.3%	6.1%	10.4%

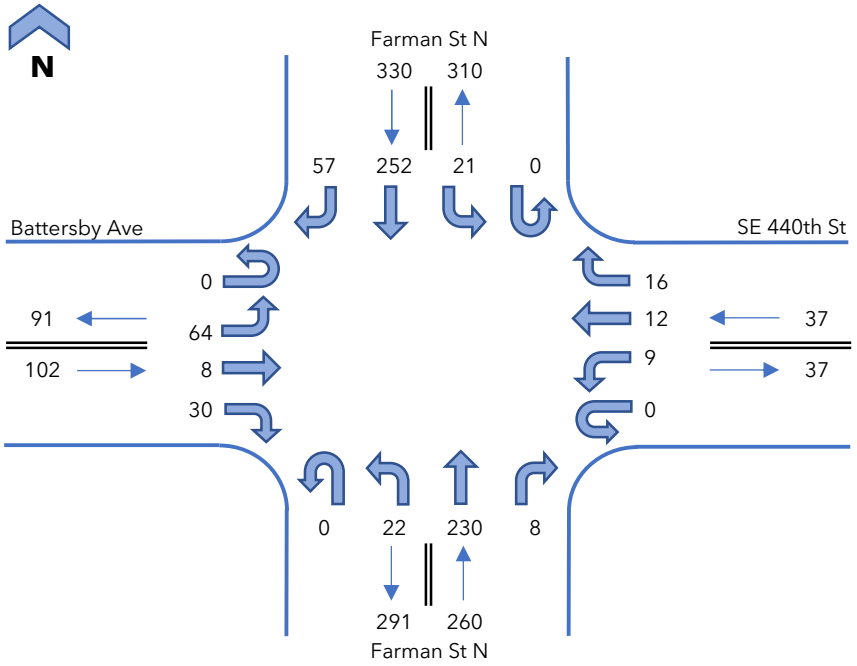
Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

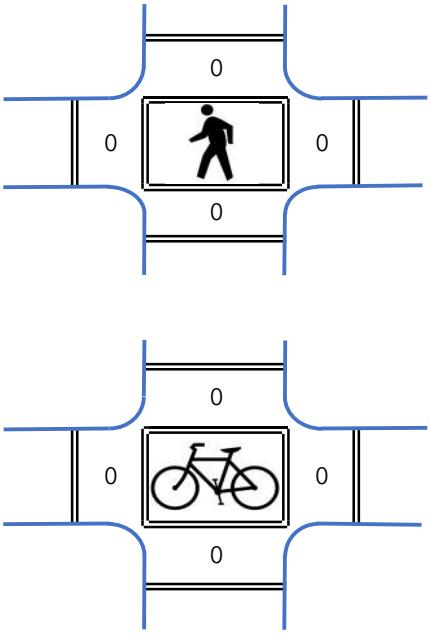
Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0

HEATH & ASSOCIATES
Transportation Planning & Engineering

Date Collected: 3/19/2025
Day of the Week: Wednesday
Time Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM

Battersby Avenue (SE 440t Street) & Farman Street N





Interval Start Time	Battersby Ave Eastbound				SE 440th St Westbound				Farman St N Northbound				Farman St N Southbound				15 Minute Totals	Hourly Totals
	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT	UT	LT	T	RT		
4:00 PM	0	17	5	5	0	1	2	3	0	4	54	2	0	7	62	15	177	
4:15 PM	0	14	1	5	0	3	2	4	0	4	59	2	0	7	58	17	176	
4:30 PM	0	18	1	11	0	4	6	8	0	10	48	2	0	5	54	7	174	
4:45 PM	0	15	1	9	0	1	2	1	0	4	69	2	0	2	78	18	202	729
5:00 PM	0	14	0	5	0	5	2	2	0	5	58	2	0	1	68	8	170	722
5:15 PM	0	17	0	8	0	1	1	3	0	11	61	0	0	0	51	6	159	705
5:30 PM	0	6	1	5	0	0	0	1	0	3	42	0	0	0	50	13	121	652
5:45 PM	0	4	0	3	0	0	2	1	0	11	36	1	0	0	38	11	107	557
Count Total	0	105	9	51	0	15	17	23	0	52	427	11	0	22	459	95	1286	--
Peak Hour Total	0	64	8	30	0	9	12	16	0	22	230	8	0	21	252	57	729	--
PHF	0.85				0.51				0.87				0.84				0.90	--
Heavy Vehicles	0	3	0	1	0	0	1	2	0	1	1	0	0	3	9	1	22	--
HV %	0.0%	4.7%	0.0%	3.3%	0.0%	0.0%	8.3%	12.5%	0.0%	4.5%	0.4%	0.0%	0.0%	14.3%	3.6%	1.8%	3.0%	--

Interval Start Time	Heavy Vehicles				
	EB	WB	NB	SB	Total
4:00 PM	1	1	1	2	5
4:15 PM	1	2	0	5	8
4:30 PM	1	0	1	3	5
4:45 PM	1	0	0	3	4
5:00 PM	0	0	1	0	1
5:15 PM	0	0	1	1	2
5:30 PM	0	0	0	2	2
5:45 PM	0	0	0	0	0
Count Total	4	3	4	16	27
Peak Hour Total	4	3	2	13	22
Peak Hour HV%	3.9%	8.1%	0.8%	3.9%	3.0%

Pedestrians (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Bicycles (Leg)				
E	W	N	S	Total
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
ITE Sheets

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

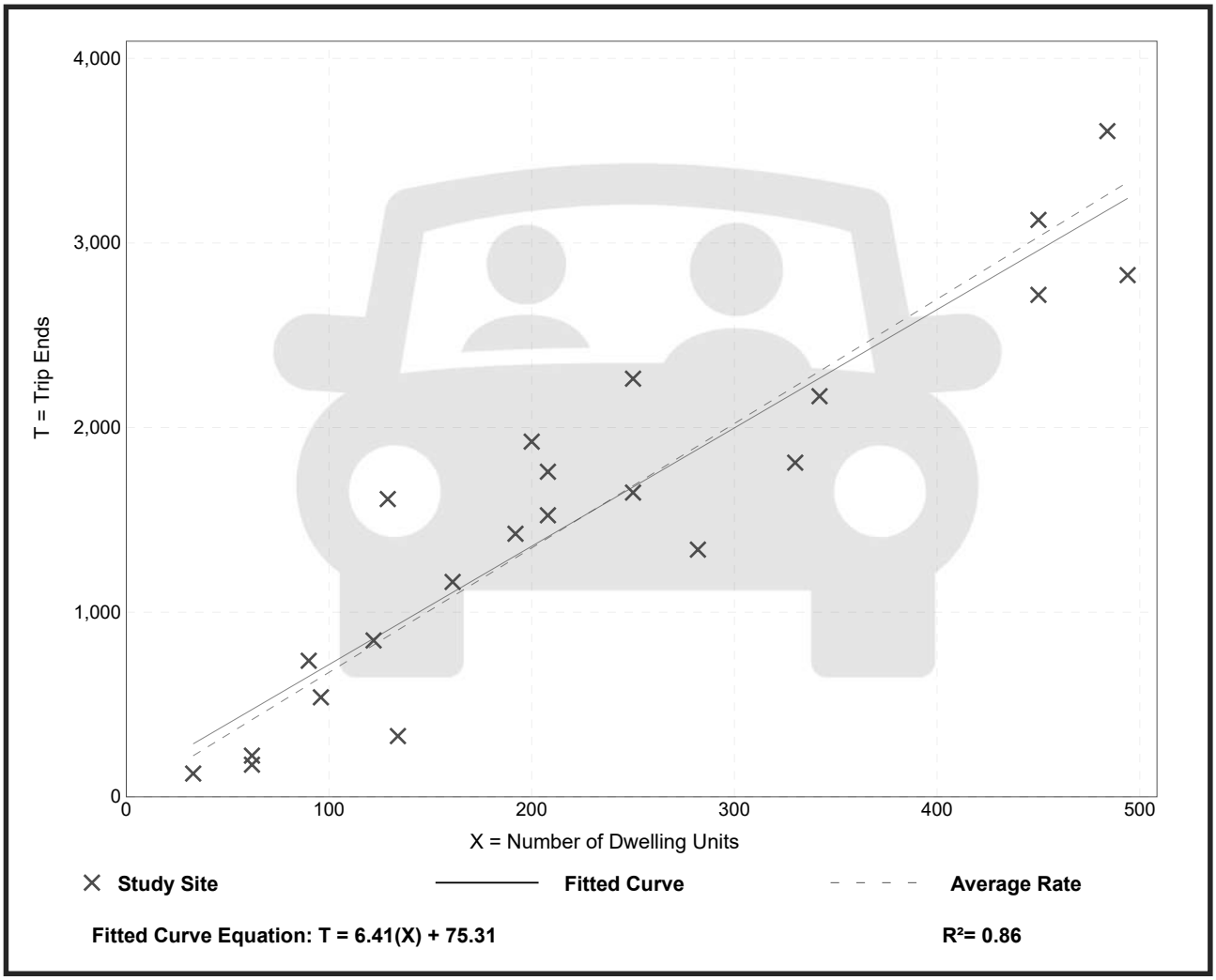
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 229
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

Data Plot and Equation



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Filtered by range - 30-90

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	7 out of 49
Avg. Num. of Dwelling Units:	52
Directional Distribution:	33% entering , 67% exiting

Vehicle Trip Generation per Dwelling Unit

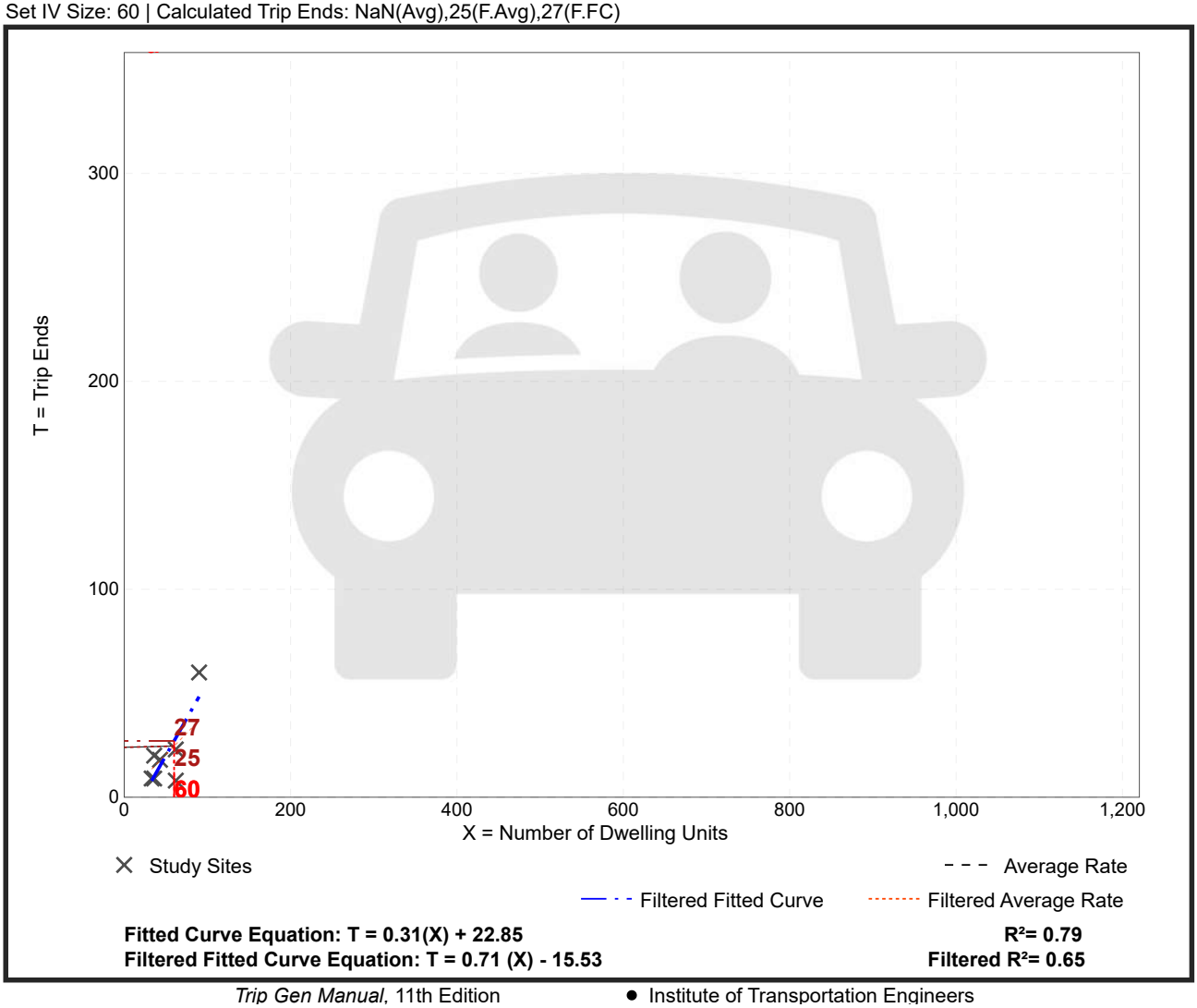
Average Rate	Range of Rates	Standard Deviation
0.41	0.13 - 0.67	0.21

Data Filtered By: [IV Value: 30-90]

Data Plot and Equation

Caution – Filtered Data Set

Set IV Size: 60 | Calculated Trip Ends: NaN(Avg),25(F.Avg),27(F.FC)



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Filtered by range - 30-90

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	10 out of 59
Avg. Num. of Dwelling Units:	57
Directional Distribution:	58% entering , 42% exiting

Vehicle Trip Generation per Dwelling Unit

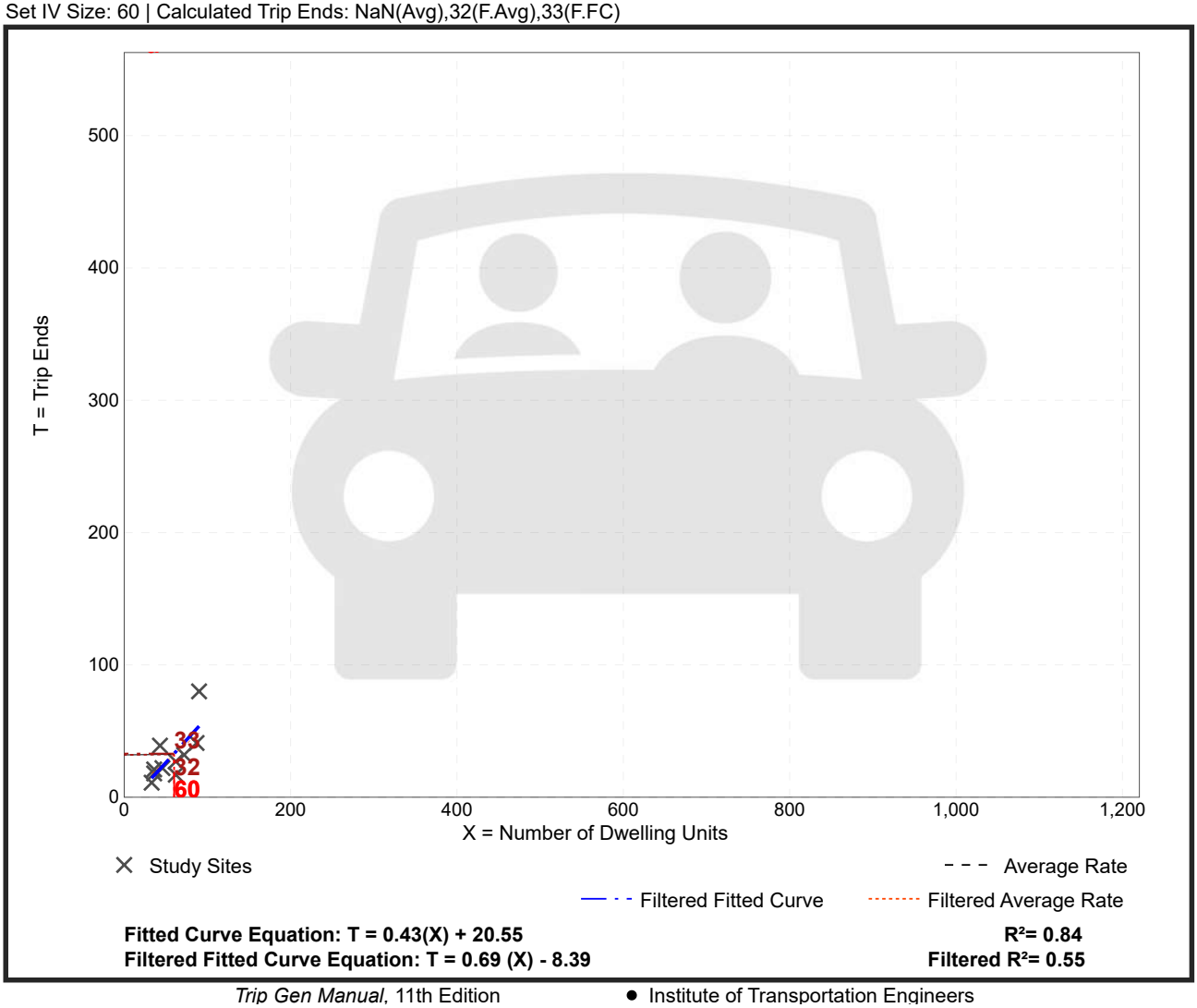
Average Rate	Range of Rates	Standard Deviation
0.54	0.27 - 0.91	0.22

Data Filtered By: [IV Value: 30-90]

Data Plot and Equation

Caution – Filtered Data Set

Set IV Size: 60 | Calculated Trip Ends: NaN(Avg),32(F.Avg),33(F.FC)



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RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Pipeline Excel

Heath & Associates, Inc.
Pipeline Volumes - Rainier Lodging TIA
7-Apr-25

SR 410 & SR 164
AM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW			5	3	4						5	
2. Watson St Apartments				2	2						1	
3. Battersby Plat					2						1	
4.Work MPH (Crystal Mountain MHC)			7	15	5						2	
5. The Enumclaw Aquatic Center												
6. Mazatlan Enumclaw												
7. Mountain View Multi			1	3	2							
8. Grainery II			1	3	2						1	
9. Holdener Phase I			3	11	5						2	
10. Cole Street Storage												
11. Pickle Farm			4	1	1						1	
12. Holdener Phase II/Sunrise Meadows			2	7	3						1	
13. Fiske 410			5	15	12						3	
14. Gateway Commercial			43	35	35						43	
15. Stevenson/Gambrel Meadows					1						2	
16. Gateway Plat											1	
Totals	0	0	71	95	74	0	0	0	0	0	63	0

SR 410 & SR 164
PM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW			3	3	4						3	
2. Watson St Apartments			2	1	1						2	
3. Battersby Plat					1						3	
4.Work MPH (Crystal Mountain MHC)			24	13	6						8	
5. The Enumclaw Aquatic Center					3						2	
6. Mazatlan Enumclaw			2	1	3						5	
7. Mountain View Multi			3	1	2						2	
8. Grainery II			3	2	1						3	
9. Holdener Phase I			12	7	3						5	
10. Cole Street Storage												
11. Pickle Farm			1	4	1						1	
12. Holdener Phase II/Sunrise Meadows			7	4	2						3	
13. Fiske 410			16	9	7						13	
14. Gateway Commercial			41	43	43						41	
15. Stevenson/Gambrel Meadows					3						2	
16. Gateway Plat					1						1	
Totals	0	0	114	88	81	0	0	0	0	0	94	0

SR 410 & Watson St N
AM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW					7						10	
2. Watson St Apartments							1		4	1		
3. Battersby Plat					2						1	
4.Work MPH (Crystal Mountain MHC)					20						9	
5. The Enumclaw Aquatic Center												
6. Mazatlan Enumclaw												
7. Mountain View Multi					5						1	
8. Grainery II					5						2	
9. Holdener Phase I					16						5	
10. Cole Street Storage												
11. Pickle Farm					2						5	
12. Holdener Phase II/Sunrise Meadows					10						3	
13. Fiske 410					27						8	
14. Gateway Commercial					70						86	
15. Stevenson/Gambrel Meadows					1						2	
16. Gateway Plat											1	
Totals	0	0	0	0	165	0	1	0	4	1	133	0

SR 410 & Watson St N
PM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW					7						6	
2. Watson St Apartments						1	1		2	4		
3. Battersby Plat					1						3	
4.Work MPH (Crystal Mountain MHC)					19						32	
5. The Enumclaw Aquatic Center					3						2	
6. Mazatlan Enumclaw					4	1	2				7	
7. Mountain View Multi					3						5	
8. Grainery II					3						6	
9. Holdener Phase I					10						17	
10. Cole Street Storage												
11. Pickle Farm					5						2	
12. Holdener Phase II/Sunrise Meadows					6						10	
13. Fiske 410					16						29	
14. Gateway Commercial					86						82	
15. Stevenson/Gambrel Meadows					3						2	
16. Gateway Plat					1						1	
Totals	0	0	0	0	167	2	3	0	2	4	204	0

SR 410 & Suntop Blvd N
AM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW					7						10	
2. Watson St Apartments											1	
3. Battersby Plat					2						1	
4.Work MPH (Crystal Mountain MHC)					20						9	
5. The Enumclaw Aquatic Center												
6. Mazatlan Enumclaw												
7. Mountain View Multi					5						1	
8. Grainery II					5						2	
9. Holdener Phase I						2	5		16	5		
10. Cole Street Storage												
11. Pickle Farm					2						5	
12. Holdener Phase II/Sunrise Meadows						1	2		10	3		
13. Fiske 410					27						8	
14. Gateway Commercial						51	43		70	86		
15. Stevenson/Gambrel Meadows					1						2	
16. Gateway Plat											1	
Totals	0	0	0	0	69	54	50	0	96	94	40	0

SR 410 & Suntop Blvd N
PM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW					7						6	
2. Watson St Apartments					1						1	
3. Battersby Plat					1						3	
4.Work MPH (Crystal Mountain MHC)					19						32	
5. The Enumclaw Aquatic Center					3						2	
6. Mazatlan Enumclaw					5	2	4				9	
7. Mountain View Multi					3						5	
8. Grainery II					3						6	
9. Holdener Phase I						5	3		10	17		
10. Cole Street Storage												
11. Pickle Farm					5						2	
12. Holdener Phase II/Sunrise Meadows						3	2		6	10		
13. Fiske 410					16						29	
14. Gateway Commercial						49	51		86	82		
15. Stevenson/Gambrel Meadows					3						2	
16. Gateway Plat					1						1	
Totals	0	0	0	0	67	59	60	0	102	109	98	0

SR 410 & Farman St N
AM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW		1	1	1	1			1				
2. Watson St Apartments											1	
3. Battersby Plat	2	1	1									1
4.Work MPH (Crystal Mountain MHC)			1	3	20	1	1				9	
5. The Enumclaw Aquatic Center												
6. Mazatlan Enumclaw												
7. Mountain View Multi					5						1	
8. Grainery II	5	1										2
9. Holdener Phase I	1				1						2	3
10. Cole Street Storage												
11. Pickle Farm		1			1			3				
12. Holdener Phase II/Sunrise Meadows	1										1	1
13. Fiske 410					27	2	1				8	
14. Gateway Commercial	34				9				8	7	7	29
15. Stevenson/Gambrel Meadows					1						2	
16. Gateway Plat											1	
Totals	43	4	3	4	65	3	2	4	8	7	32	36

SR 410 & Farman St N
PM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW		1	1		1			1				
2. Watson St Apartments					1						1	
3. Battersby Plat	1	1						1				3
4.Work MPH (Crystal Mountain MHC)			4	3	19	1	2				32	
5. The Enumclaw Aquatic Center					3						2	
6. Mazatlan Enumclaw	2				1				2	1		1
7. Mountain View Multi					3						5	
8. Grainery II	3	1						1				6
9. Holdener Phase I	3				2						1	2
10. Cole Street Storage												
11. Pickle Farm		3						1			1	
12. Holdener Phase II/Sunrise Meadows	2				1						1	1
13. Fiske 410					16	2	2				29	
14. Gateway Commercial	33				8				8	8	9	34
15. Stevenson/Gambrel Meadows					3						2	
16. Gateway Plat					1						1	
Totals	44	6	5	3	59	3	4	4	10	9	84	47

Farman St N & Battersby Ave
AM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW		1						1	1	1		
2. Watson St Apartments												
3. Battersby Plat			1	3	3	4	1				1	
4.Work MPH (Crystal Mountain MHC)		1						3				
5. The Enumclaw Aquatic Center												
6. Mazatlan Enumclaw												
7. Mountain View Multi		1						1	1			
8. Grainery II		1						1	1			
9. Holdener Phase I		1						1	2			
10. Cole Street Storage												1
11. Pickle Farm		1								1		
12. Holdener Phase II/Sunrise Meadows		1						1				
13. Fiske 410		1						4	6	2		
14. Gateway Commercial		17						15	14	17		
15. Stevenson/Gambrel Meadows												
16. Gateway Plat												
Totals	0	25	1	3	3	4	1	27	25	21	1	1

Farman St N & Battersby Ave
PM Peak Hour
Pipeline Volume Summations

1. Gracepoint NW								1	1	1		
2. Watson St Apartments												
3. Battersby Plat			3	2	2	2	4				4	
4.Work MPH (Crystal Mountain MHC)		4						3				
5. The Enumclaw Aquatic Center		1						1		1		
6. Mazatlan Enumclaw												
7. Mountain View Multi		1						1		1		
8. Grainery II		1						1		1		
9. Holdener Phase I		2						1	1	1		
10. Cole Street Storage												
11. Pickle Farm								1	1			
12. Holdener Phase II/Sunrise Meadows		1						1		1		
13. Fiske 410		4						2	4	7		
14. Gateway Commercial		17						17	17	16		
15. Stevenson/Gambrel Meadows												
16. Gateway Plat												
Totals	0	31	3	2	2	2	4	29	24	29	4	0

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Forecast Excel - 2031

Peak Hour Forecast Intersection Volumes

Annual Growth Rate: 6 %
# of Years to Horizon: 3
2031

AM Peak Hour

1. SR 410 & SR 164

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	8	29	239	157	176	6	6	28	27	20	306	0
Project Trips	0	0	2	4	4	0	0	0	0	0	2	0
Pipeline	0	0	71	95	74	0	0	0	0	0	63	0
Without	10	35	356	282	284	7	7	33	32	24	427	0
With	10	35	358	286	288	7	7	33	32	24	429	0

2. SR 410 & Watson St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	1	0	0	1	248	19	47	0	82	110	409	5
Project Trips	0	0	0	0	8	0	0	0	0	0	4	0
Pipeline	0	0	0	0	165	0	1	0	4	1	133	0
Without	1	0	0	1	460	23	57	0	102	132	620	6
With	1	0	0	1	468	23	57	0	102	132	624	6

3. SR 410 & Suntop Blvd N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	0	0	0	0	218	8	20	0	36	11	451	0
Project Trips	0	0	0	0	8	0	0	0	0	0	4	0
Pipeline	0	0	0	0	69	54	50	0	96	94	40	0
Without	0	0	0	0	329	64	74	0	139	107	577	0
With	0	0	0	0	337	64	74	0	139	107	581	0

4. SR 410 & Farman St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	132	35	77	23	42	3	9	43	38	35	287	110
Project Trips	8	2	1	0	0	0	0	1	0	0	0	4
Pipeline	43	4	3	4	65	3	2	4	8	7	32	36
Without	200	46	95	31	115	7	13	55	53	49	374	167
With	208	48	96	31	115	7	13	56	53	49	374	171

5. Farman St N & Battersby Ave

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	45	244	5	3	0	1	0	142	20	21	4	14
Project Trips	0	2	0	0	0	0	0	3	4	2	0	0
Pipeline	0	25	1	3	3	4	1	27	25	21	1	1
Without	54	316	7	7	3	5	1	196	49	46	6	18
With	54	318	7	7	3	5	1	199	53	48	6	18

PM Peak Hour

1. SR 410 & SR 164

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	15	72	261	263	295	15	5	86	69	48	273	0
Project Trips	0	0	4	3	4	0	0	0	0	0	5	0
Pipeline	0	0	114	88	81	0	0	0	0	0	94	0
Without	18	86	425	401	432	18	6	102	82	57	419	0
With	18	86	429	404	436	18	6	102	82	57	424	0

2. SR 410 & Watson St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	11	5	6	8	417	64	33	4	126	158	293	37
Project Trips	0	0	0	0	7	0	0	0	0	0	9	0
Pipeline	0	0	0	0	167	2	3	0	2	4	204	0
Without	13	6	7	10	664	78	42	5	152	192	553	44
With	13	6	7	10	671	78	42	5	152	192	562	44

3. SR 410 & Suntop Blvd N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	0	0	0	0	439	24	6	0	22	43	306	0
Project Trips	0	0	0	0	7	0	0	0	0	0	9	0
Pipeline	0	0	0	0	67	59	60	0	102	109	98	0
Without	0	0	0	0	590	88	67	0	128	160	462	0
With	0	0	0	0	597	88	67	0	128	160	471	0

4. SR 410 & Farman St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	173	80	30	58	202	13	8	55	53	68	59	164
Project Trips	7	1	0	1	0	0	0	2	0	0	0	9
Pipeline	44	6	5	3	59	3	4	4	10	9	84	47
Without	250	101	41	72	300	18	14	70	73	90	154	242
With	257	102	41	73	300	18	14	72	73	90	154	251

5. Farman St N & Battersby Ave

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	57	252	21	16	12	9	8	230	22	30	8	64
Project Trips	0	3	0	0	0	0	0	3	3	4	0	0
Pipeline	0	31	3	2	2	2	4	29	24	29	4	0
Without	68	331	28	21	16	13	14	303	50	65	14	76
With	68	334	28	21	16	13	14	306	53	69	14	76

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Forecast Excel - 2045

Peak Hour Forecast Intersection Volumes

Annual Growth Rate: 6 %
# of Years to Horizon: 20
2045

AM Peak Hour

1. SR 410 & SR 164

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	8	29	239	157	176	6	6	28	27	20	306	0
Project Trips	0	0	2	4	4	0	0	0	0	0	2	0
Pipeline	0	0	71	95	74	0	0	0	0	0	63	0
Without	26	93	838	599	638	19	19	90	87	64	1,044	0
With	26	93	840	603	642	19	19	90	87	64	1,046	0

2. SR 410 & Watson St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	1	0	0	1	248	19	47	0	82	110	409	5
Project Trips	0	0	0	0	8	0	0	0	0	0	4	0
Pipeline	0	0	0	0	165	0	1	0	4	1	133	0
Without	3	0	0	3	960	61	152	0	267	354	1,445	16
With	3	0	0	3	968	61	152	0	267	354	1,449	16

3. SR 410 & Suntop Blvd N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	0	0	0	0	218	8	20	0	36	11	451	0
Project Trips	0	0	0	0	8	0	0	0	0	0	4	0
Pipeline	0	0	0	0	69	54	50	0	96	94	40	0
Without	0	0	0	0	768	80	114	0	211	129	1,486	0
With	0	0	0	0	776	80	114	0	211	129	1,490	0

4. SR 410 & Farman St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	132	35	77	23	42	3	9	43	38	35	287	110
Project Trips	8	2	1	0	0	0	0	1	0	0	0	4
Pipeline	43	4	3	4	65	3	2	4	8	7	32	36
Without	466	116	250	78	200	13	31	142	130	119	952	389
With	474	118	251	78	200	13	31	143	130	119	952	393

5. Farman St N & Battersby Ave

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	45	244	5	3	0	1	0	142	20	21	4	14
Project Trips	0	2	0	0	0	0	0	3	4	2	0	0
Pipeline	0	25	1	3	3	4	1	27	25	21	1	1
Without	144	808	17	13	3	7	1	482	89	88	14	46
With	144	810	17	13	3	7	1	485	93	90	14	46

PM Peak Hour

1. SR 410 & SR 164

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	15	72	261	263	295	15	5	86	69	48	273	0
Project Trips	0	0	4	3	4	0	0	0	0	0	5	0
Pipeline	0	0	114	88	81	0	0	0	0	0	94	0
Without	48	231	951	931	1,027	48	16	276	221	154	970	0
With	48	231	955	934	1,031	48	16	276	221	154	975	0

2. SR 410 & Watson St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	11	5	6	8	417	64	33	4	126	158	293	37
Project Trips	0	0	0	0	7	0	0	0	0	0	9	0
Pipeline	0	0	0	0	167	2	3	0	2	4	204	0
Without	35	16	19	26	1,504	207	109	13	406	511	1,144	119
With	35	16	19	26	1,511	207	109	13	406	511	1,153	119

3. SR 410 & Suntop Blvd N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	0	0	0	0	439	24	6	0	22	43	306	0
Project Trips	0	0	0	0	7	0	0	0	0	0	9	0
Pipeline	0	0	0	0	67	59	60	0	102	109	98	0
Without	0	0	0	0	1,475	136	79	0	173	247	1,079	0
With	0	0	0	0	1,482	136	79	0	173	247	1,088	0

4. SR 410 & Farman St N

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	173	80	30	58	202	13	8	55	53	68	59	164
Project Trips	7	1	0	1	0	0	0	2	0	0	0	9
Pipeline	44	6	5	3	59	3	4	4	10	9	84	47
Without	599	263	101	189	707	45	30	180	180	227	273	573
With	606	264	101	190	707	45	30	182	180	227	273	582

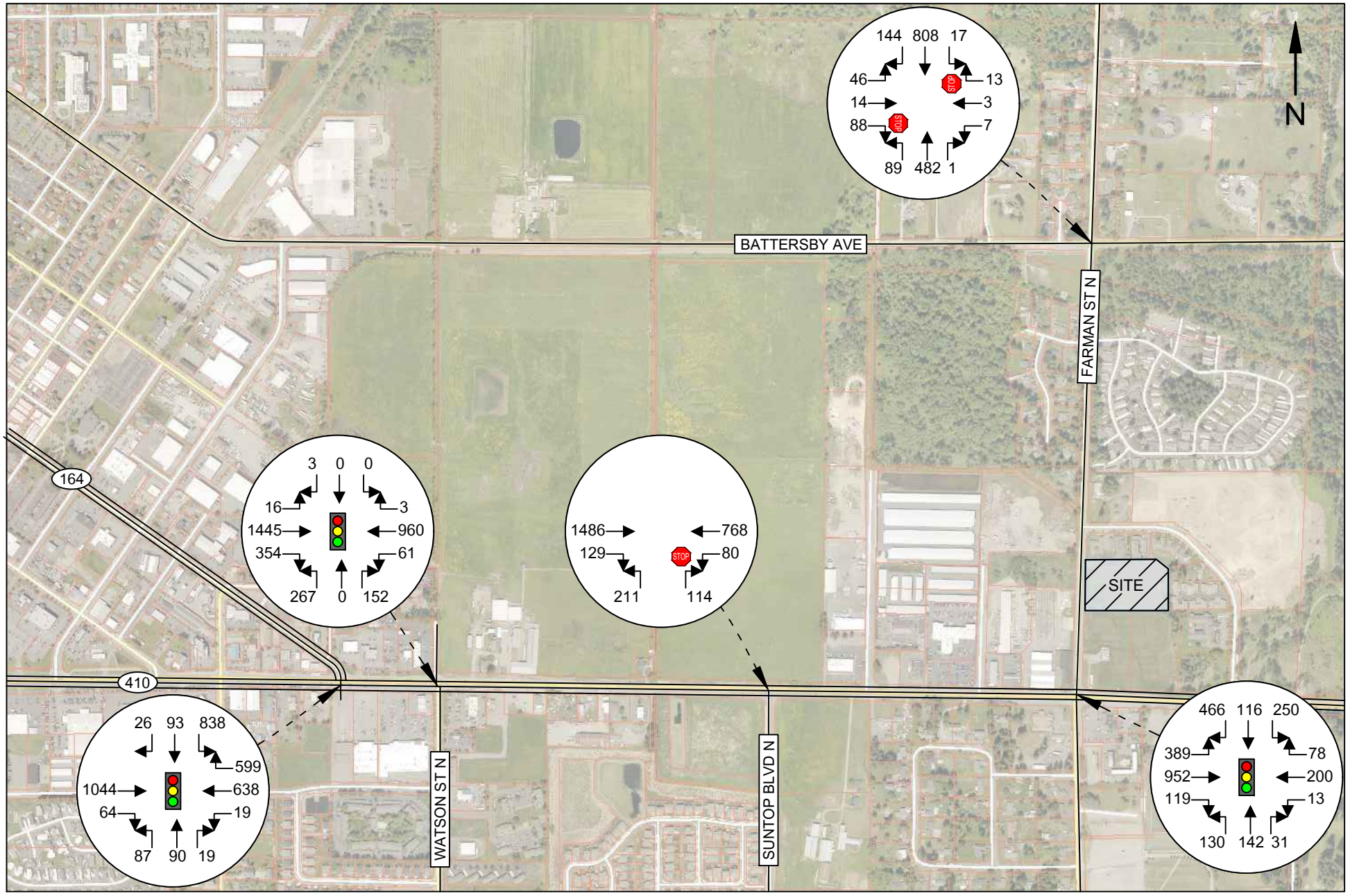
5. Farman St N & Battersby Ave

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	57	252	21	16	12	9	8	230	22	30	8	64
Project Trips	0	3	0	0	0	0	0	3	3	4	0	0
Pipeline	0	31	3	2	2	2	4	29	24	29	4	0
Without	183	839	70	53	40	31	30	767	95	125	30	205
With	183	842	70	53	40	31	30	770	98	129	30	205

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Forecast 2045 Peak Hour Volumes



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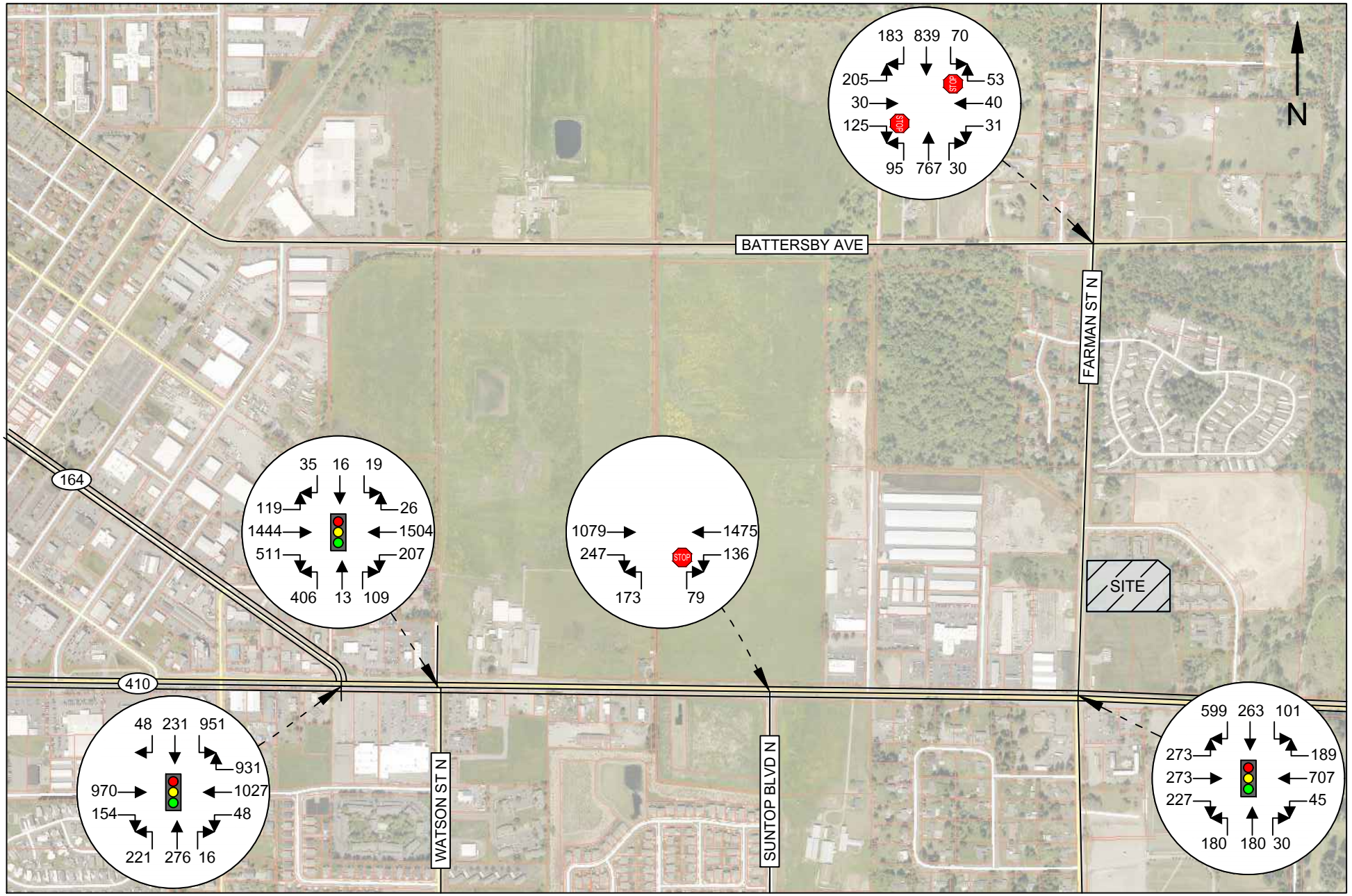
RAINIER LODGING

FORECAST 2045 AM PEAK HOUR VOLUMES WITHOUT PROJECT
FIGURE A



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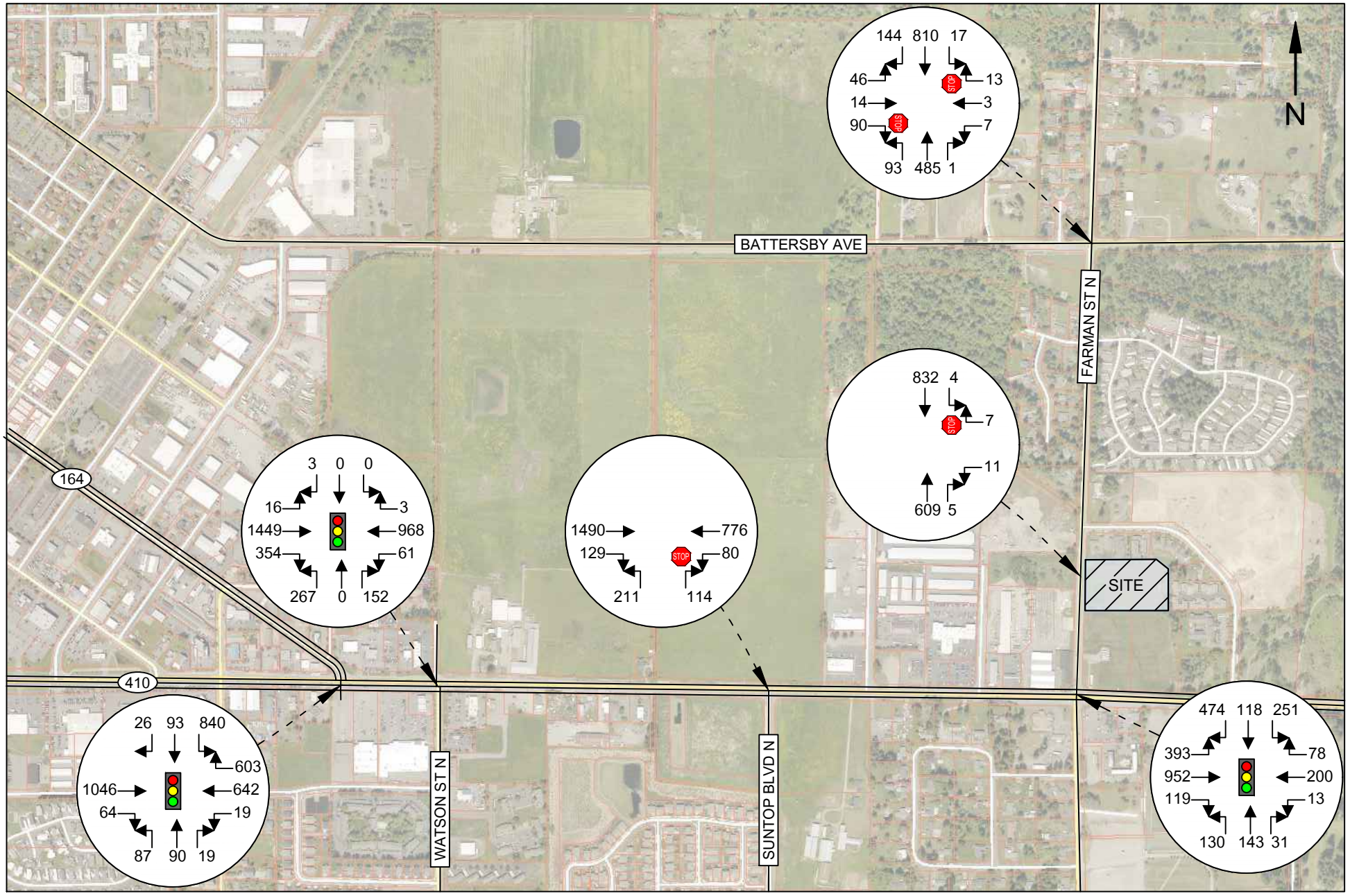
RAINIER LODGING

FORECAST 2045 PM PEAK HOUR VOLUMES WITHOUT PROJECT
FIGURE B



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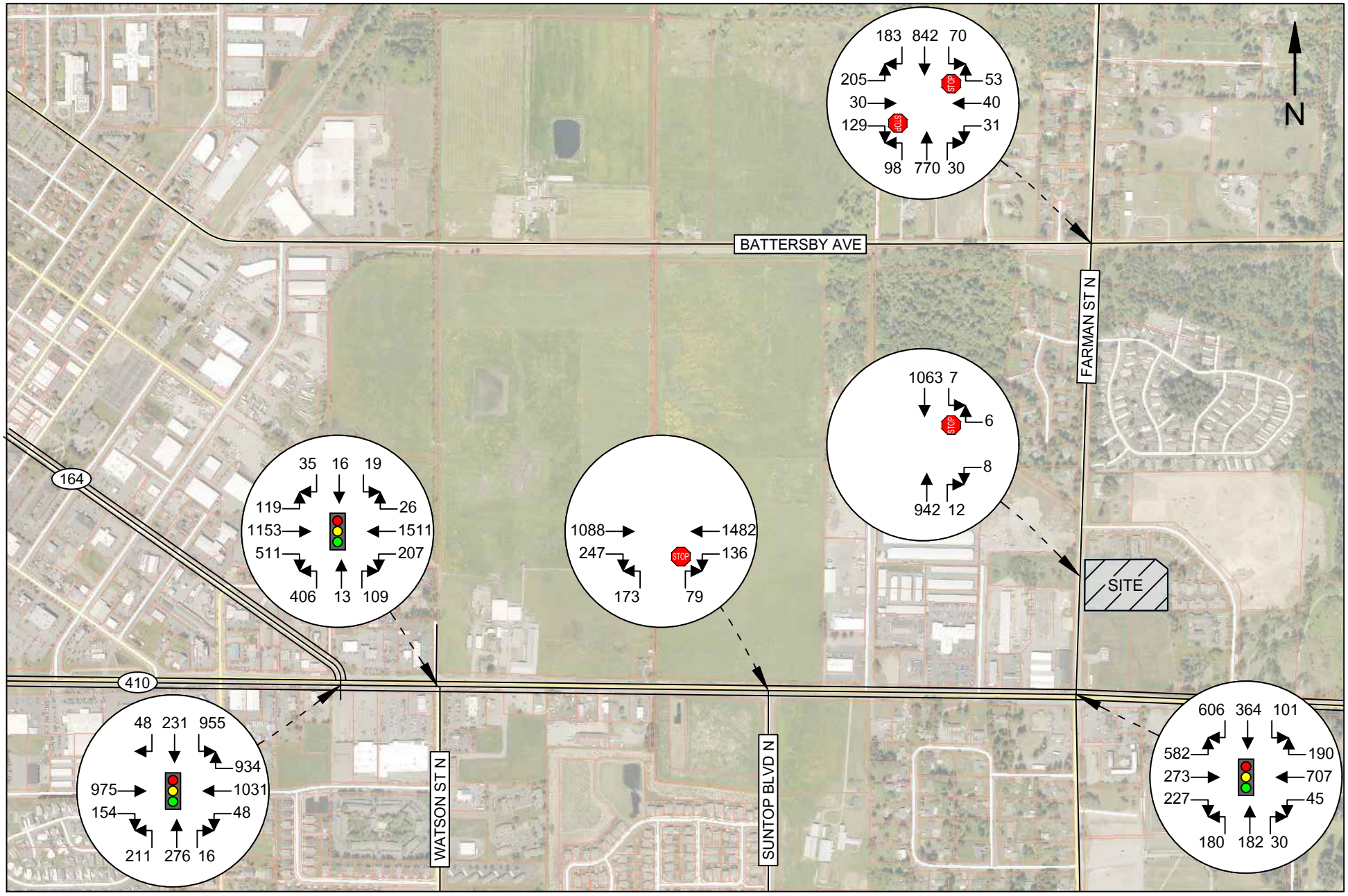
RAINIER LODGING

FORECAST 2031 AM PEAK HOUR VOLUMES WITH PROJECT
FIGURE C



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RAINIER LODGING

FORECAST 2045 PM PEAK HOUR VOLUMES WITH PROJECT
FIGURE D

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Existing Peak Hour LOS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	306	20	6	176	157	27	28	6	239	29	8
Future Volume (veh/h)	0	306	20	6	176	157	27	28	6	239	29	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1674	1589	1786	1716	1758	1702	1603	1561	1730	1702	1617
Adj Flow Rate, veh/h	0	340	22	7	196	174	30	31	7	266	32	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	9	15	1	6	3	7	14	17	5	7	13
Cap, veh/h	0	782	50	332	443	374	52	53	12	379	46	13
Arrive On Green	0.00	0.26	0.26	0.26	0.26	0.26	0.08	0.08	0.08	0.27	0.27	0.27
Sat Flow, veh/h	0	3111	195	971	1716	1449	677	699	158	1405	169	48
Grp Volume(v), veh/h	0	178	184	7	196	174	68	0	0	307	0	0
Grp Sat Flow(s),veh/h/ln	0	1590	1632	971	1716	1449	1534	0	0	1622	0	0
Q Serve(g_s), s	0.0	3.9	3.9	0.3	4.0	4.2	1.8	0.0	0.0	7.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.9	3.9	4.2	4.0	4.2	1.8	0.0	0.0	7.1	0.0	0.0
Prop In Lane	0.00		0.12	1.00		1.00	0.44		0.10	0.87		0.03
Lane Grp Cap(c), veh/h	0	411	422	332	443	374	117	0	0	437	0	0
V/C Ratio(X)	0.00	0.43	0.44	0.02	0.44	0.46	0.58	0.00	0.00	0.70	0.00	0.00
Avail Cap(c_a), veh/h	0	1285	1319	866	1387	1172	1285	0	0	1358	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.9	12.9	14.7	12.9	13.0	18.6	0.0	0.0	13.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	0.0	0.7	0.9	4.5	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.2	0.0	1.2	1.1	0.7	0.0	0.0	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	13.6	13.6	14.7	13.6	13.9	23.1	0.0	0.0	15.8	0.0	0.0
LnGrp LOS		B	B	B	B	B	C			B		
Approach Vol, veh/h		362			377			68			307	
Approach Delay, s/veh		13.6			13.8			23.1			15.8	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	17.1	8.3	17.1	16.3
Change Period (Y+Rc), s	6.3	5.1	6.3	5.1
Max Green Setting (Gmax), s	33.7	34.9	33.7	34.9
Max Q Clear Time (g_c+I1), s	5.9	3.8	6.2	9.1
Green Ext Time (p_c), s	2.0	0.4	1.7	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	14.9
HCM 7th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	409	110	19	248	1	82	0	47	0	0	1
Future Volume (vph)	5	409	110	19	248	1	82	0	47	0	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130		0	125		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	105			130			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	1.00		0.98	1.00	1.00			0.99			0.98	
Frt			0.850		0.999			0.951			0.865	
Flt Protected	0.950			0.950				0.969				
Satd. Flow (prot)	1693	1651	1485	1693	1681	0	0	1602	0	0	1509	0
Flt Permitted	0.579			0.412				0.969				
Satd. Flow (perm)	1030	1651	1453	734	1681	0	0	1601	0	0	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131					108			488	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		649			1991			1192			353	
Travel Time (s)		11.1			33.9			32.5			9.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	9%	3%	1%	7%	1%	2%	1%	4%	1%	1%	1%
Adj. Flow (vph)	6	487	131	23	295	1	98	0	56	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	487	131	23	296	0	0	154	0	0	1	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA			NA	
Protected Phases		2			6		3	3			4	
Permitted Phases	2		2	6						4		
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.3	26.3	26.3	24.3	24.3		32.1	32.1		40.1	40.1	
Total Split (s)	45.0	45.0	45.0	45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	52.9%	52.9%	52.9%	52.9%	52.9%		23.5%	23.5%		23.5%	23.5%	
Maximum Green (s)	38.7	38.7	38.7	38.7	38.7		14.9	14.9		14.9	14.9	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		3.1	3.1		3.1	3.1	
All-Red Time (s)	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	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3			5.1			5.1	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	13.0	13.0	13.0	10.0	10.0		20.0	20.0		28.0	28.0	
Pedestrian Calls (#/hr)	1	1	1	1	1		1	1		1	1	
Act Effct Green (s)	28.4	28.4	28.4	28.4	28.4			10.1			9.6	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56			0.20			0.19	
v/c Ratio	0.01	0.53	0.15	0.06	0.32			0.38			0.00	
Control Delay (s/veh)	15.8	18.3	4.6	15.9	15.1			12.7			0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay (s/veh)	15.8	18.3	4.6	15.9	15.1			12.7			0.0	
LOS	B	B	A	B	B			B			A	
Approach Delay (s/veh)		15.4			15.2			12.7				
Approach LOS		B			B			B				

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 51			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay (s/veh): 14.9		Intersection LOS: B	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Watson St N & SR 410

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	451	11	8	218	36	20
Future Vol, veh/h	451	11	8	218	36	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	90	120	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	9	13	9	1	1
Mvmt Flow	518	13	9	251	41	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	531	0	787	518
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	4.23	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.317	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	983	-	362	559
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	983	-	358	559
Mov Cap-2 Maneuver	-	-	-	-	358	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.31	15.38
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	411	-	-	983	-
HCM Lane V/C Ratio	0.157	-	-	0.009	-
HCM Ctrl Dly (s/v)	15.4	-	-	8.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	287	35	3	42	23	38	43	9	77	35	132
Future Volume (veh/h)	110	287	35	3	42	23	38	43	9	77	35	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1702	1716	1758	859	1561	1000	1786	1772	1646	1674	1758	1772
Adj Flow Rate, veh/h	125	326	40	3	48	26	43	49	10	88	40	150
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	7	6	3	67	17	57	1	2	11	9	3	2
Cap, veh/h	534	474	412	241	288	156	261	250	41	213	86	206
Arrive On Green	0.10	0.28	0.28	0.00	0.18	0.18	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1621	1716	1490	818	1561	847	492	967	159	348	332	797
Grp Volume(v), veh/h	125	326	40	3	48	26	102	0	0	278	0	0
Grp Sat Flow(s),veh/h/ln	1621	1716	1490	818	1561	847	1618	0	0	1478	0	0
Q Serve(g_s), s	2.3	6.5	0.8	0.1	1.0	1.0	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	2.3	6.5	0.8	0.1	1.0	1.0	1.8	0.0	0.0	6.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.42		0.10	0.32		0.54
Lane Grp Cap(c), veh/h	534	474	412	241	288	156	551	0	0	505	0	0
V/C Ratio(X)	0.23	0.69	0.10	0.01	0.17	0.17	0.18	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	1202	2401	2084	547	2185	1185	1256	0	0	1225	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.8	12.4	10.3	12.8	13.2	13.2	11.2	0.0	0.0	12.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.8	0.1	0.0	0.3	0.5	0.2	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.0	0.2	0.0	0.3	0.2	0.5	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.0	14.2	10.4	12.8	13.4	13.7	11.4	0.0	0.0	13.8	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		491			77			102			278	
Approach Delay, s/veh		13.1			13.5			11.4			13.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	16.9		15.8	9.2	13.4		15.8				
Change Period (Y+Rc), s	5.5	6.3		5.9	5.5	6.3		5.9				
Max Green Setting (Gmax), s	14.5	53.7		29.1	19.5	53.7		29.1				
Max Q Clear Time (g_c+I1), s	2.1	8.5		8.5	4.3	3.0		3.8				
Green Ext Time (p_c), s	0.0	2.1		1.6	0.2	0.3		0.5				

Intersection Summary			
HCM 7th Control Delay, s/veh		13.1	
HCM 7th LOS		B	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	4	21	1	0	3	20	142	0	5	244	45
Future Vol, veh/h	14	4	21	1	0	3	20	142	0	5	244	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	7	50	10	1	1	33	1	20	1	40	6	2
Mvmt Flow	18	5	27	1	0	4	26	182	0	6	313	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	588	588	342	562	617	182	371	0	0	182	0	0
Stage 1	354	354	-	233	233	-	-	-	-	-	-	-
Stage 2	233	233	-	328	383	-	-	-	-	-	-	-
Critical Hdwy	7.17	7	6.3	7.11	6.51	6.53	4.11	-	-	4.5	-	-
Critical Hdwy Stg 1	6.17	6	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	6	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.45	3.39	3.509	4.009	3.597	2.209	-	-	2.56	-	-
Pot Cap-1 Maneuver	413	363	683	439	407	787	1194	-	-	1194	-	-
Stage 1	653	553	-	772	713	-	-	-	-	-	-	-
Stage 2	759	631	-	687	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	399	352	683	403	395	787	1194	-	-	1194	-	-
Mov Cap-2 Maneuver	399	352	-	403	395	-	-	-	-	-	-	-
Stage 1	648	550	-	753	696	-	-	-	-	-	-	-
Stage 2	737	616	-	649	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.91	10.71	1	0.14
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	222	-	-	505	636	30	-	-
HCM Lane V/C Ratio	0.021	-	-	0.099	0.008	0.005	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	12.9	10.7	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	273	48	15	295	263	69	86	5	261	72	15
Future Volume (veh/h)	0	273	48	15	295	263	69	86	5	261	72	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1744	1786	1702	1730	1758	1786	1744	1786	1772	1786	1702
Adj Flow Rate, veh/h	0	290	51	16	314	280	73	91	5	278	77	16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	4	1	7	5	3	1	4	1	2	1	7
Cap, veh/h	0	804	139	306	494	418	117	146	8	369	102	21
Arrive On Green	0.00	0.29	0.29	0.29	0.29	0.29	0.16	0.16	0.16	0.29	0.29	0.29
Sat Flow, veh/h	0	2902	488	938	1730	1466	733	913	50	1280	354	74
Grp Volume(v), veh/h	0	169	172	16	314	280	169	0	0	371	0	0
Grp Sat Flow(s),veh/h/ln	0	1657	1647	938	1730	1466	1696	0	0	1708	0	0
Q Serve(g_s), s	0.0	5.0	5.2	0.9	9.8	10.4	5.7	0.0	0.0	12.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.0	5.2	6.0	9.8	10.4	5.7	0.0	0.0	12.2	0.0	0.0
Prop In Lane	0.00		0.30	1.00		1.00	0.43		0.03	0.75		0.04
Lane Grp Cap(c), veh/h	0	473	470	306	494	418	270	0	0	492	0	0
V/C Ratio(X)	0.00	0.36	0.37	0.05	0.64	0.67	0.63	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	0	903	898	550	943	800	958	0	0	964	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.6	17.6	20.0	19.3	19.5	24.3	0.0	0.0	20.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	0.1	1.4	1.9	2.4	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.8	0.2	3.6	3.3	2.4	0.0	0.0	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	18.0	18.1	20.1	20.6	21.4	26.6	0.0	0.0	22.4	0.0	0.0
LnGrp LOS		B	B	C	C	C	C			C		
Approach Vol, veh/h		341			610			169			371	
Approach Delay, s/veh		18.1			21.0			26.6			22.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	23.9	14.9	23.9	22.9
Change Period (Y+Rc), s	6.3	5.1	6.3	5.1
Max Green Setting (Gmax), s	33.7	34.9	33.7	34.9
Max Q Clear Time (g_c+I1), s	7.2	7.7	12.4	14.2
Green Ext Time (p_c), s	1.9	1.0	2.8	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	21.3
HCM 7th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	293	158	64	417	8	126	4	33	6	5	11
Future Volume (vph)	37	293	158	64	417	8	126	4	33	6	5	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130		0	125		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	105			130			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	1.00		0.97	1.00	1.00			0.99			0.99	
Frt			0.850		0.997			0.973			0.932	
Flt Protected	0.950			0.950				0.963			0.986	
Satd. Flow (prot)	1693	1698	1515	1629	1722	0	0	1649	0	0	1618	0
Flt Permitted	0.383			0.539				0.963			0.986	
Satd. Flow (perm)	681	1698	1475	921	1722	0	0	1644	0	0	1617	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174		2			13			12	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		649			1991			1192			353	
Travel Time (s)		11.1			33.9			32.5			9.6	
Confl. Peds. (#/hr)	3		3	3		3	3		3	3		3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	6%	1%	5%	4%	13%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	41	322	174	70	458	9	138	4	36	7	5	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	322	174	70	467	0	0	178	0	0	24	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	
Permitted Phases	2		2	6								
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.3	26.3	26.3	24.3	24.3		32.1	32.1		40.1	40.1	
Total Split (s)	45.0	45.0	45.0	45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	52.9%	52.9%	52.9%	52.9%	52.9%		23.5%	23.5%		23.5%	23.5%	
Maximum Green (s)	38.7	38.7	38.7	38.7	38.7		14.9	14.9		14.9	14.9	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		3.1	3.1		3.1	3.1	
All-Red Time (s)	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	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3			5.1			5.1	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	13.0	13.0	13.0	10.0	10.0		20.0	20.0		28.0	28.0	
Pedestrian Calls (#/hr)	3	3	3	3	3		3	3		3	3	
Act Effct Green (s)	25.2	25.2	25.2	25.2	25.2			13.1			10.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43			0.22			0.17	
v/c Ratio	0.14	0.44	0.24	0.18	0.63			0.47			0.08	
Control Delay (s/veh)	19.2	19.2	4.9	18.6	22.8			26.8			19.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay (s/veh)	19.2	19.2	4.9	18.6	22.8			26.8			19.1	
LOS	B	B	A	B	C			C			B	
Approach Delay (s/veh)		14.5			22.2			26.8			19.1	
Approach LOS		B			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 58.5			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 19.6		Intersection LOS: B	
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Watson St N & SR 410

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	43	24	439	22	6
Future Vol, veh/h	306	43	24	439	22	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	90	120	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	1	4	5	1	1
Mvmt Flow	333	47	26	477	24	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	379	0	862	333
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	529	-
Critical Hdwy	-	-	4.14	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.236	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1168	-	327	711
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	593	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1168	-	320	711
Mov Cap-2 Maneuver	-	-	-	-	320	-
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	580	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.42	15.85
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	362	-	-	1168	-
HCM Lane V/C Ratio	0.084	-	-	0.022	-
HCM Ctrl Dly (s/v)	15.8	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	59	68	13	202	58	53	55	8	30	80	173
Future Volume (veh/h)	164	59	68	13	202	58	53	55	8	30	80	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1730	1786	1786	1772	1786	1786	1772	1786	1758	1786	1758
Adj Flow Rate, veh/h	173	62	72	14	213	61	56	58	8	32	84	182
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	1	1	2	1	1	2	1	3	1	3
Cap, veh/h	459	503	440	435	341	291	267	235	26	120	138	254
Arrive On Green	0.12	0.29	0.29	0.02	0.19	0.19	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1701	1730	1514	1701	1772	1514	531	890	100	92	522	963
Grp Volume(v), veh/h	173	62	72	14	213	61	122	0	0	298	0	0
Grp Sat Flow(s),veh/h/ln	1701	1730	1514	1701	1772	1514	1521	0	0	1576	0	0
Q Serve(g_s), s	3.2	1.1	1.5	0.3	4.6	1.4	0.0	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	3.2	1.1	1.5	0.3	4.6	1.4	2.3	0.0	0.0	7.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.46		0.07	0.11		0.61
Lane Grp Cap(c), veh/h	459	503	440	435	341	291	528	0	0	512	0	0
V/C Ratio(X)	0.38	0.12	0.16	0.03	0.62	0.21	0.23	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	1267	2243	1962	1000	2298	1962	1600	0	0	1753	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	10.8	10.9	13.0	15.4	14.1	12.1	0.0	0.0	13.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.1	0.2	0.0	1.9	0.4	0.2	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.4	0.1	1.6	0.4	0.7	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	10.9	11.1	13.0	17.2	14.4	12.3	0.0	0.0	14.8	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		307			288			122			298	
Approach Delay, s/veh		11.3			16.4			12.3			14.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	18.3		16.8	10.3	14.3		16.8				
Change Period (Y+Rc), s	5.5	6.3		5.9	5.5	6.3		5.9				
Max Green Setting (Gmax), s	14.5	53.7		44.1	24.5	53.7		44.1				
Max Q Clear Time (g_c+I1), s	2.3	3.5		9.0	5.2	6.6		4.3				
Green Ext Time (p_c), s	0.0	0.6		2.0	0.4	1.4		0.8				

Intersection Summary		
HCM 7th Control Delay, s/veh		13.9
HCM 7th LOS		B

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	64	8	30	9	12	16	22	230	8	21	252	57
Future Vol, veh/h	64	8	30	9	12	16	22	230	8	21	252	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	1	3	1	8	13	5	1	1	14	4	2
Mvmt Flow	71	9	33	10	13	18	24	256	9	23	280	63

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	669	672	312	640	699	260	343	0	0	264	0	0
Stage 1	358	358	-	309	309	-	-	-	-	-	-	-
Stage 2	311	313	-	331	390	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.51	6.23	7.11	6.58	6.33	4.15	-	-	4.24	-	-
Critical Hdwy Stg 1	6.15	5.51	-	6.11	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.51	-	6.11	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.009	3.327	3.509	4.072	3.417	2.245	-	-	2.326	-	-
Pot Cap-1 Maneuver	367	379	726	390	357	753	1199	-	-	1233	-	-
Stage 1	653	629	-	703	649	-	-	-	-	-	-	-
Stage 2	693	659	-	684	597	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	329	361	726	346	340	753	1199	-	-	1233	-	-
Mov Cap-2 Maneuver	329	361	-	346	340	-	-	-	-	-	-	-
Stage 1	638	614	-	687	633	-	-	-	-	-	-	-
Stage 2	646	643	-	628	583	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	17.74	13.85	0.68	0.51
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	151	-	-	395	448	110	-	-
HCM Lane V/C Ratio	0.02	-	-	0.287	0.092	0.019	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	17.7	13.8	8	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.3	0.1	-	-

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Forecast 2031 Without Project LOS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	427	24	7	284	282	32	33	7	356	35	10
Future Volume (veh/h)	0	427	24	7	284	282	32	33	7	356	35	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1674	1589	1786	1716	1758	1702	1603	1561	1730	1702	1617
Adj Flow Rate, veh/h	0	427	24	7	284	282	32	33	7	356	35	10
Peak Hour 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
Percent Heavy Veh, %	0	9	15	1	6	3	7	14	17	5	7	13
Cap, veh/h	0	855	48	287	480	406	50	52	11	463	46	13
Arrive On Green	0.00	0.28	0.28	0.28	0.28	0.28	0.07	0.07	0.07	0.32	0.32	0.32
Sat Flow, veh/h	0	3140	171	895	1716	1450	682	704	149	1440	142	40
Grp Volume(v), veh/h	0	221	230	7	284	282	72	0	0	401	0	0
Grp Sat Flow(s),veh/h/ln	0	1590	1637	895	1716	1450	1535	0	0	1622	0	0
Q Serve(g_s), s	0.0	5.9	6.0	0.3	7.3	8.8	2.3	0.0	0.0	11.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.9	6.0	6.3	7.3	8.8	2.3	0.0	0.0	11.3	0.0	0.0
Prop In Lane	0.00		0.10	1.00		1.00	0.44		0.10	0.89		0.02
Lane Grp Cap(c), veh/h	0	445	458	287	480	406	113	0	0	521	0	0
V/C Ratio(X)	0.00	0.50	0.50	0.02	0.59	0.70	0.64	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	0	1055	1087	631	1139	963	1055	0	0	1115	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.3	15.3	18.0	15.8	16.3	22.9	0.0	0.0	15.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.8	0.0	1.2	2.2	5.8	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	1.9	0.1	2.5	2.6	1.0	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	16.2	16.2	18.0	16.9	18.5	28.7	0.0	0.0	17.9	0.0	0.0
LnGrp LOS		B	B	B	B	B	C			B		
Approach Vol, veh/h		451			573			72			401	
Approach Delay, s/veh		16.2			17.7			28.7			17.9	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.5	8.8	20.5	21.4
Change Period (Y+Rc), s	6.3	5.1	6.3	5.1
Max Green Setting (Gmax), s	33.7	34.9	33.7	34.9
Max Q Clear Time (g_c+I1), s	8.0	4.3	10.8	13.3
Green Ext Time (p_c), s	2.5	0.4	2.6	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	17.8
HCM 7th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	620	132	23	460	1	102	0	57	0	0	1
Future Volume (vph)	6	620	132	23	460	1	102	0	57	0	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130		0	125		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	105			130			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	1.00		0.98	1.00	1.00			0.99			0.98	
Frt			0.850					0.952			0.865	
Flt Protected	0.950			0.950				0.969				
Satd. Flow (prot)	1693	1651	1485	1693	1682	0	0	1604	0	0	1509	0
Flt Permitted	0.432			0.296				0.969				
Satd. Flow (perm)	769	1651	1453	527	1682	0	0	1603	0	0	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132					108			354	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		649			1991			1192			353	
Travel Time (s)		11.1			33.9			32.5			9.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour 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
Heavy Vehicles (%)	1%	9%	3%	1%	7%	1%	2%	1%	4%	1%	1%	1%
Adj. Flow (vph)	6	620	132	23	460	1	102	0	57	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	620	132	23	461	0	0	159	0	0	1	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA			NA	
Protected Phases		2			6		3	3			4	
Permitted Phases	2		2	6						4		
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.3	26.3	26.3	24.3	24.3		32.1	32.1		40.1	40.1	
Total Split (s)	45.0	45.0	45.0	45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	52.9%	52.9%	52.9%	52.9%	52.9%		23.5%	23.5%		23.5%	23.5%	
Maximum Green (s)	38.7	38.7	38.7	38.7	38.7		14.9	14.9		14.9	14.9	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		3.1	3.1		3.1	3.1	
All-Red Time (s)	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	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3			5.1			5.1	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	13.0	13.0	13.0	10.0	10.0		20.0	20.0		28.0	28.0	
Pedestrian Calls (#/hr)	1	1	1	1	1		1	1		1	1	
Act Effct Green (s)	30.5	30.5	30.5	30.5	30.5			10.0			9.4	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53			0.17			0.16	
v/c Ratio	0.01	0.71	0.16	0.08	0.52			0.43			0.00	
Control Delay (s/veh)	15.8	21.9	4.6	16.5	17.7			14.6			0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay (s/veh)	15.8	21.9	4.6	16.5	17.7			14.6			0.0	
LOS	B	C	A	B	B			B			A	
Approach Delay (s/veh)		18.8			17.6			14.6				
Approach LOS		B			B			B				

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 58			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 17.9		Intersection LOS: B	
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Watson St N & SR 410

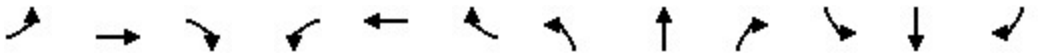
Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	577	107	64	329	139	74
Future Vol, veh/h	577	107	64	329	139	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	90	120	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	9	13	9	1	1
Mvmt Flow	577	107	64	329	139	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	684	0	1034	577
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	457	-
Critical Hdwy	-	-	4.23	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.317	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	860	-	258	518
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	860	-	239	518
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	592	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.55	43.72
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	294	-	-	860	-
HCM Lane V/C Ratio	0.724	-	-	0.074	-
HCM Ctrl Dly (s/v)	43.7	-	-	9.5	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	5.2	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	374	49	7	115	31	53	55	13	95	46	200
Future Volume (veh/h)	167	374	49	7	115	31	53	55	13	95	46	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1702	1716	1758	859	1561	1000	1786	1772	1646	1674	1758	1772
Adj Flow Rate, veh/h	167	374	49	7	115	31	53	55	13	95	46	200
Peak Hour 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
Percent Heavy Veh, %	7	6	3	67	17	57	1	2	11	9	3	2
Cap, veh/h	490	508	441	214	300	163	261	237	46	195	90	257
Arrive On Green	0.11	0.30	0.30	0.01	0.19	0.19	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1621	1716	1490	818	1561	847	487	800	155	308	303	867
Grp Volume(v), veh/h	167	374	49	7	115	31	121	0	0	341	0	0
Grp Sat Flow(s),veh/h/ln	1621	1716	1490	818	1561	847	1443	0	0	1478	0	0
Q Serve(g_s), s	3.4	8.7	1.1	0.3	2.9	1.4	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	3.4	8.7	1.1	0.3	2.9	1.4	2.3	0.0	0.0	9.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.44		0.11	0.28		0.59
Lane Grp Cap(c), veh/h	490	508	441	214	300	163	544	0	0	542	0	0
V/C Ratio(X)	0.34	0.74	0.11	0.03	0.38	0.19	0.22	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1017	2071	1798	473	1884	1022	1030	0	0	1058	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	14.1	11.4	14.5	15.7	15.1	11.8	0.0	0.0	14.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.1	0.1	0.1	0.8	0.6	0.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.9	0.3	0.0	0.9	0.2	0.8	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	16.2	11.5	14.6	16.5	15.6	12.0	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		590			153			121			341	
Approach Delay, s/veh		14.5			16.2			12.0			15.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	19.5		19.1	10.5	14.9		19.1				
Change Period (Y+Rc), s	5.5	6.3		5.9	5.5	6.3		5.9				
Max Green Setting (Gmax), s	14.5	53.7		29.1	19.5	53.7		29.1				
Max Q Clear Time (g_c+I1), s	2.3	10.7		11.3	5.4	4.9		4.3				
Green Ext Time (p_c), s	0.0	2.5		2.0	0.3	0.7		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	14.7	
HCM 7th LOS	B	

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	6	46	5	3	7	49	196	1	7	316	54
Future Vol, veh/h	18	6	46	5	3	7	49	196	1	7	316	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	7	50	10	1	1	33	1	20	1	40	6	2
Mvmt Flow	23	8	59	6	4	9	63	251	1	9	405	69

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	837	836	440	804	870	252	474	0	0	253	0	0
Stage 1	458	458	-	378	378	-	-	-	-	-	-	-
Stage 2	379	378	-	427	492	-	-	-	-	-	-	-
Critical Hdwy	7.17	7	6.3	7.11	6.51	6.53	4.11	-	-	4.5	-	-
Critical Hdwy Stg 1	6.17	6	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	6	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.45	3.39	3.509	4.009	3.597	2.209	-	-	2.56	-	-
Pot Cap-1 Maneuver	281	255	601	302	291	717	1093	-	-	1120	-	-
Stage 1	573	494	-	646	617	-	-	-	-	-	-	-
Stage 2	633	539	-	608	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	252	236	601	244	268	717	1093	-	-	1120	-	-
Mov Cap-2 Maneuver	252	236	-	244	268	-	-	-	-	-	-	-
Stage 1	567	489	-	603	576	-	-	-	-	-	-	-
Stage 2	579	503	-	533	543	-	-	-	-	-	-	-

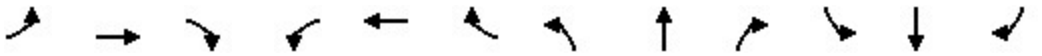
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.44	15.5	1.69	0.15
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	358	-	-	404	362	32	-	-
HCM Lane V/C Ratio	0.057	-	-	0.222	0.053	0.008	-	-
HCM Ctrl Dly (s/v)	8.5	0	-	16.4	15.5	8.2	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	0.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	419	57	18	432	401	82	102	6	425	86	18
Future Volume (veh/h)	0	419	57	18	432	401	82	102	6	425	86	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1744	1786	1702	1730	1758	1786	1744	1786	1772	1786	1702
Adj Flow Rate, veh/h	0	419	57	18	432	401	82	102	6	425	86	18
Peak Hour 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
Percent Heavy Veh, %	0	4	1	7	5	3	1	4	1	2	1	7
Cap, veh/h	0	930	126	248	550	467	116	145	9	468	95	20
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.32	0.16	0.16	0.16	0.34	0.34	0.34
Sat Flow, veh/h	0	3014	396	832	1730	1469	732	910	54	1371	277	58
Grp Volume(v), veh/h	0	236	240	18	432	401	190	0	0	529	0	0
Grp Sat Flow(s),veh/h/ln	0	1657	1666	832	1730	1469	1696	0	0	1706	0	0
Q Serve(g_s), s	0.0	10.3	10.4	1.6	20.6	23.2	9.6	0.0	0.0	26.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.3	10.4	12.0	20.6	23.2	9.6	0.0	0.0	26.8	0.0	0.0
Prop In Lane	0.00		0.24	1.00		1.00	0.43		0.03	0.80		0.03
Lane Grp Cap(c), veh/h	0	527	529	248	550	467	269	0	0	582	0	0
V/C Ratio(X)	0.00	0.45	0.45	0.07	0.79	0.86	0.71	0.00	0.00	0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	616	619	293	643	546	653	0	0	657	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.6	24.6	29.4	28.1	29.0	36.1	0.0	0.0	28.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.1	5.5	11.6	3.4	0.0	0.0	15.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	4.0	0.3	8.8	9.1	4.2	0.0	0.0	13.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	25.2	25.3	29.6	33.6	40.6	39.5	0.0	0.0	44.0	0.0	0.0
LnGrp LOS		C	C	C	C	D	D			D		
Approach Vol, veh/h		476			851			190			529	
Approach Delay, s/veh		25.2			36.8			39.5			44.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.1		19.5		35.1		36.0				
Change Period (Y+Rc), s		6.3		5.1		6.3		5.1				
Max Green Setting (Gmax), s		33.7		34.9		33.7		34.9				
Max Q Clear Time (g_c+I1), s		12.4		11.6		25.2		28.8				
Green Ext Time (p_c), s		2.6		1.1		2.8		1.9				

Intersection Summary		
HCM 7th Control Delay, s/veh		36.2
HCM 7th LOS		D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	553	192	78	664	10	152	5	42	7	6	13
Future Volume (vph)	44	553	192	78	664	10	152	5	42	7	6	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130		0	125		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	105			130			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			0.97	1.00	1.00			0.99			0.99	
Frt			0.850		0.998			0.972			0.932	
Flt Protected	0.950			0.950				0.963			0.987	
Satd. Flow (prot)	1693	1698	1515	1629	1724	0	0	1647	0	0	1620	0
Flt Permitted	0.222			0.325				0.963			0.987	
Satd. Flow (perm)	396	1698	1475	556	1724	0	0	1643	0	0	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192		1			14			13	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		649			1991			1192			353	
Travel Time (s)		11.1			33.9			32.5			9.6	
Confl. Peds. (#/hr)	3		3	3		3	3		3	3		3
Peak Hour 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
Heavy Vehicles (%)	1%	6%	1%	5%	4%	13%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	44	553	192	78	664	10	152	5	42	7	6	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	553	192	78	674	0	0	199	0	0	26	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	
Permitted Phases	2		2	6								
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.3	26.3	26.3	24.3	24.3		32.1	32.1		40.1	40.1	
Total Split (s)	45.0	45.0	45.0	45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	52.9%	52.9%	52.9%	52.9%	52.9%		23.5%	23.5%		23.5%	23.5%	
Maximum Green (s)	38.7	38.7	38.7	38.7	38.7		14.9	14.9		14.9	14.9	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		3.1	3.1		3.1	3.1	
All-Red Time (s)	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	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3			5.1			5.1	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	13.0	13.0	13.0	10.0	10.0		20.0	20.0		28.0	28.0	
Pedestrian Calls (#/hr)	3	3	3	3	3		3	3		3	3	
Act Effct Green (s)	33.4	33.4	33.4	33.4	33.4			14.3			10.0	
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.50			0.21			0.15	
v/c Ratio	0.22	0.66	0.23	0.28	0.79			0.55			0.10	
Control Delay (s/veh)	22.3	23.0	4.3	21.6	27.4			32.2			21.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay (s/veh)	22.3	23.0	4.3	21.6	27.4			32.2			21.2	
LOS	C	C	A	C	C			C			C	
Approach Delay (s/veh)		18.4			26.8			32.2			21.2	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 67.4			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 23.6		Intersection LOS: C	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Watson St N & SR 410

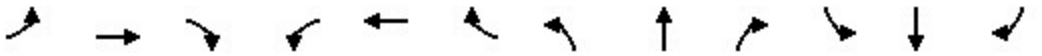
Intersection	
Int Delay, s/veh	9.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	462	160	88	590	128	67
Future Vol, veh/h	462	160	88	590	128	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	90	120	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	1	4	5	1	1
Mvmt Flow	462	160	88	590	128	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	622	0	1228	462
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	766	-
Critical Hdwy	-	-	4.14	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.236	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	949	-	198	602
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	461	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	949	-	179	602
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	418	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.19	65.79
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	236	-	-	949	-
HCM Lane V/C Ratio	0.825	-	-	0.093	-
HCM Ctrl Dly (s/v)	65.8	-	-	9.2	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	6.4	-	-	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	154	90	18	300	72	73	70	14	41	101	250
Future Volume (veh/h)	242	154	90	18	300	72	73	70	14	41	101	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1730	1786	1786	1772	1786	1786	1772	1786	1758	1786	1758
Adj Flow Rate, veh/h	242	154	90	18	300	72	73	70	14	41	101	250
Peak Hour 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
Percent Heavy Veh, %	1	5	1	1	2	1	1	2	1	3	1	3
Cap, veh/h	439	603	528	414	405	346	232	197	33	101	147	312
Arrive On Green	0.14	0.35	0.35	0.02	0.23	0.23	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1701	1730	1514	1701	1772	1514	441	632	105	95	472	999
Grp Volume(v), veh/h	242	154	90	18	300	72	157	0	0	392	0	0
Grp Sat Flow(s),veh/h/ln	1701	1730	1514	1701	1772	1514	1178	0	0	1566	0	0
Q Serve(g_s), s	5.5	3.5	2.3	0.4	8.8	2.1	0.0	0.0	0.0	5.6	0.0	0.0
Cycle Q Clear(g_c), s	5.5	3.5	2.3	0.4	8.8	2.1	5.1	0.0	0.0	12.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.46		0.09	0.10		0.64
Lane Grp Cap(c), veh/h	439	603	528	414	405	346	462	0	0	560	0	0
V/C Ratio(X)	0.55	0.26	0.17	0.04	0.74	0.21	0.34	0.00	0.00	0.70	0.00	0.00
Avail Cap(c_a), veh/h	946	1666	1458	820	1707	1458	1071	0	0	1298	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.8	13.0	12.6	15.8	20.0	17.4	14.7	0.0	0.0	17.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.2	0.2	0.0	2.7	0.3	0.4	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.2	0.7	0.2	3.4	0.7	1.4	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	13.2	12.7	15.9	22.6	17.7	15.1	0.0	0.0	19.1	0.0	0.0
LnGrp LOS	B	B	B	B	C	B	B			B		
Approach Vol, veh/h		486			390			157			392	
Approach Delay, s/veh		13.5			21.4			15.1			19.1	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	25.7		23.3	13.4	19.1		23.3				
Change Period (Y+Rc), s	5.5	6.3		5.9	5.5	6.3		5.9				
Max Green Setting (Gmax), s	14.5	53.7		44.1	24.5	53.7		44.1				
Max Q Clear Time (g_c+I1), s	2.4	5.5		14.7	7.5	10.8		7.1				
Green Ext Time (p_c), s	0.0	1.1		2.7	0.6	2.0		1.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			17.4									
HCM 7th LOS			B									

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	76	14	65	13	16	21	50	303	14	28	331	68
Future Vol, veh/h	76	14	65	13	16	21	50	303	14	28	331	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	1	3	1	8	13	5	1	1	14	4	2
Mvmt Flow	84	16	72	14	18	23	56	337	16	31	368	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	924	931	406	893	961	344	443	0	0	352	0	0
Stage 1	468	468	-	456	456	-	-	-	-	-	-	-
Stage 2	457	463	-	438	506	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.51	6.23	7.11	6.58	6.33	4.15	-	-	4.24	-	-
Critical Hdwy Stg 1	6.15	5.51	-	6.11	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.51	-	6.11	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.009	3.327	3.509	4.072	3.417	2.245	-	-	2.326	-	-
Pot Cap-1 Maneuver	247	268	643	263	250	674	1101	-	-	1143	-	-
Stage 1	570	563	-	586	558	-	-	-	-	-	-	-
Stage 2	578	566	-	600	530	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	200	242	643	199	226	674	1101	-	-	1143	-	-
Mov Cap-2 Maneuver	200	242	-	199	226	-	-	-	-	-	-	-
Stage 1	549	542	-	550	523	-	-	-	-	-	-	-
Stage 2	505	530	-	498	511	-	-	-	-	-	-	-

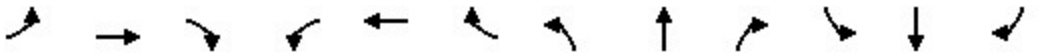
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	34.68	19.79	1.15	0.54
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	243	-	-	287	299	114	-	-
HCM Lane V/C Ratio	0.05	-	-	0.6	0.186	0.027	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	34.7	19.8	8.2	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3.6	0.7	0.1	-	-

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Forecast 2031 With Project LOS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	429	24	7	288	286	32	33	7	358	35	10
Future Volume (veh/h)	0	429	24	7	288	286	32	33	7	358	35	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1674	1589	1786	1716	1758	1702	1603	1561	1730	1702	1617
Adj Flow Rate, veh/h	0	429	24	7	288	286	32	33	7	358	35	10
Peak Hour 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
Percent Heavy Veh, %	0	9	15	1	6	3	7	14	17	5	7	13
Cap, veh/h	0	862	48	288	484	409	50	52	11	464	45	13
Arrive On Green	0.00	0.28	0.28	0.28	0.28	0.28	0.07	0.07	0.07	0.32	0.32	0.32
Sat Flow, veh/h	0	3141	170	894	1716	1450	682	704	149	1441	141	40
Grp Volume(v), veh/h	0	222	231	7	288	286	72	0	0	403	0	0
Grp Sat Flow(s),veh/h/ln	0	1590	1637	894	1716	1450	1535	0	0	1622	0	0
Q Serve(g_s), s	0.0	6.0	6.0	0.3	7.4	9.0	2.3	0.0	0.0	11.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.0	6.0	6.4	7.4	9.0	2.3	0.0	0.0	11.5	0.0	0.0
Prop In Lane	0.00		0.10	1.00		1.00	0.44		0.10	0.89		0.02
Lane Grp Cap(c), veh/h	0	448	462	288	484	409	113	0	0	523	0	0
V/C Ratio(X)	0.00	0.50	0.50	0.02	0.60	0.70	0.64	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	0	1047	1078	624	1129	955	1047	0	0	1105	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.3	15.4	18.0	15.9	16.4	23.1	0.0	0.0	15.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.8	0.0	1.2	2.2	5.9	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	2.0	0.1	2.5	2.7	1.0	0.0	0.0	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	16.2	16.2	18.0	17.0	18.6	28.9	0.0	0.0	18.1	0.0	0.0
LnGrp LOS		B	B	B	B	B	C			B		
Approach Vol, veh/h		453			581			72			403	
Approach Delay, s/veh		16.2			17.8			28.9			18.1	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.7	8.9	20.7	21.6
Change Period (Y+Rc), s	6.3	5.1	6.3	5.1
Max Green Setting (Gmax), s	33.7	34.9	33.7	34.9
Max Q Clear Time (g_c+I1), s	8.0	4.3	11.0	13.5
Green Ext Time (p_c), s	2.5	0.4	2.6	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	17.9
HCM 7th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	624	132	23	468	1	102	0	57	0	0	1
Future Volume (vph)	6	624	132	23	468	1	102	0	57	0	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130		0	125		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	105			130			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	1.00		0.98	1.00	1.00			0.99			0.98	
Frt			0.850					0.952			0.865	
Flt Protected	0.950			0.950				0.969				
Satd. Flow (prot)	1693	1651	1485	1693	1682	0	0	1604	0	0	1509	0
Flt Permitted	0.425			0.294				0.969				
Satd. Flow (perm)	757	1651	1453	524	1682	0	0	1603	0	0	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132					108			349	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		649			1991			1192			353	
Travel Time (s)		11.1			33.9			32.5			9.6	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour 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
Heavy Vehicles (%)	1%	9%	3%	1%	7%	1%	2%	1%	4%	1%	1%	1%
Adj. Flow (vph)	6	624	132	23	468	1	102	0	57	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	624	132	23	469	0	0	159	0	0	1	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA			NA	
Protected Phases		2			6		3	3			4	
Permitted Phases	2		2	6						4		
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.3	26.3	26.3	24.3	24.3		32.1	32.1		40.1	40.1	
Total Split (s)	45.0	45.0	45.0	45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	52.9%	52.9%	52.9%	52.9%	52.9%		23.5%	23.5%		23.5%	23.5%	
Maximum Green (s)	38.7	38.7	38.7	38.7	38.7		14.9	14.9		14.9	14.9	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		3.1	3.1		3.1	3.1	
All-Red Time (s)	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	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3			5.1			5.1	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	13.0	13.0	13.0	10.0	10.0		20.0	20.0		28.0	28.0	
Pedestrian Calls (#/hr)	1	1	1	1	1		1	1		1	1	
Act Effct Green (s)	30.6	30.6	30.6	30.6	30.6			10.0			9.4	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53			0.17			0.16	
v/c Ratio	0.02	0.72	0.16	0.08	0.53			0.43			0.00	
Control Delay (s/veh)	15.8	21.9	4.6	16.5	17.8			14.7			0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay (s/veh)	15.8	21.9	4.6	16.5	17.8			14.7			0.0	
LOS	B	C	A	B	B			B			A	
Approach Delay (s/veh)		18.9			17.7			14.7				
Approach LOS		B			B			B				

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 58.1			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 18.0		Intersection LOS: B	
Intersection Capacity Utilization 60.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Watson St N & SR 410

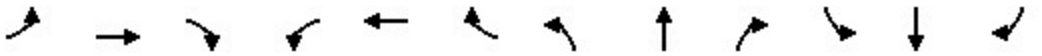
Intersection	
Int Delay, s/veh	7.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	581	107	64	337	139	74
Future Vol, veh/h	581	107	64	337	139	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	90	120	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	9	13	9	1	1
Mvmt Flow	581	107	64	337	139	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	688	0	1046	581
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	-	-	4.23	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.317	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	857	-	254	515
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	857	-	235	515
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.52	45.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	290	-	-	857	-
HCM Lane V/C Ratio	0.735	-	-	0.075	-
HCM Ctrl Dly (s/v)	45.3	-	-	9.5	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	5.3	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	374	49	7	115	31	53	56	13	96	48	208
Future Volume (veh/h)	171	374	49	7	115	31	53	56	13	96	48	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1702	1716	1758	859	1561	1000	1786	1772	1646	1674	1758	1772
Adj Flow Rate, veh/h	171	374	49	7	115	31	53	56	13	96	48	208
Peak Hour 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
Percent Heavy Veh, %	7	6	3	67	17	57	1	2	11	9	3	2
Cap, veh/h	487	506	440	211	295	160	259	241	46	193	92	265
Arrive On Green	0.12	0.30	0.30	0.01	0.19	0.19	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1621	1716	1490	818	1561	847	478	794	152	302	303	874
Grp Volume(v), veh/h	171	374	49	7	115	31	122	0	0	352	0	0
Grp Sat Flow(s),veh/h/ln	1621	1716	1490	818	1561	847	1424	0	0	1479	0	0
Q Serve(g_s), s	3.6	8.9	1.1	0.3	2.9	1.4	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	3.6	8.9	1.1	0.3	2.9	1.4	2.4	0.0	0.0	9.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		0.11	0.27		0.59
Lane Grp Cap(c), veh/h	487	506	440	211	295	160	546	0	0	550	0	0
V/C Ratio(X)	0.35	0.74	0.11	0.03	0.39	0.19	0.22	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	1000	2041	1772	466	1857	1008	1009	0	0	1043	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.5	14.3	11.6	14.8	16.0	15.4	11.8	0.0	0.0	14.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.1	0.1	0.1	0.8	0.6	0.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.9	0.3	0.1	0.9	0.2	0.8	0.0	0.0	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.9	16.5	11.7	14.9	16.9	16.0	12.0	0.0	0.0	15.5	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		594			153			122			352	
Approach Delay, s/veh		14.8			16.6			12.0			15.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	19.6		19.6	10.7	14.8		19.6				
Change Period (Y+Rc), s	5.5	6.3		5.9	5.5	6.3		5.9				
Max Green Setting (Gmax), s	14.5	53.7		29.1	19.5	53.7		29.1				
Max Q Clear Time (g_c+I1), s	2.3	10.9		11.7	5.6	4.9		4.4				
Green Ext Time (p_c), s	0.0	2.5		2.0	0.4	0.7		0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			14.9									
HCM 7th LOS			B									

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	6	48	5	3	7	53	199	1	7	318	54
Future Vol, veh/h	18	6	48	5	3	7	53	199	1	7	318	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	7	50	10	1	1	33	1	20	1	40	6	2
Mvmt Flow	23	8	62	6	4	9	68	255	1	9	408	69

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	853	853	442	821	887	256	477	0	0	256	0	0
Stage 1	460	460	-	392	392	-	-	-	-	-	-	-
Stage 2	393	392	-	429	495	-	-	-	-	-	-	-
Critical Hdwy	7.17	7	6.3	7.11	6.51	6.53	4.11	-	-	4.5	-	-
Critical Hdwy Stg 1	6.17	6	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	6	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.45	3.39	3.509	4.009	3.597	2.209	-	-	2.56	-	-
Pot Cap-1 Maneuver	274	249	599	294	284	713	1091	-	-	1116	-	-
Stage 1	572	493	-	635	608	-	-	-	-	-	-	-
Stage 2	622	531	-	606	548	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	244	229	599	235	261	713	1091	-	-	1116	-	-
Mov Cap-2 Maneuver	244	229	-	235	261	-	-	-	-	-	-	-
Stage 1	565	487	-	589	564	-	-	-	-	-	-	-
Stage 2	566	492	-	529	542	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.68	15.82	1.78	0.15
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	377	-	-	400	352	32	-	-
HCM Lane V/C Ratio	0.062	-	-	0.231	0.055	0.008	-	-
HCM Ctrl Dly (s/v)	8.5	0	-	16.7	15.8	8.3	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.9	0.2	0	-	-

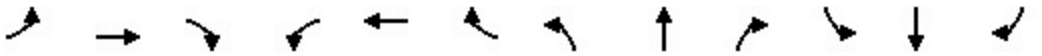
Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	7	253	5	4	341
Future Vol, veh/h	11	7	253	5	4	341
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	8	275	5	4	371

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	657	278	0	0	280	0
Stage 1	278	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	430	761	-	-	1282	-
Stage 1	769	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	428	761	-	-	1282	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.26	0	0.09
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	516	21	-
HCM Lane V/C Ratio	-	-	0.038	0.003	-
HCM Ctrl Dly (s/v)	-	-	12.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	424	57	18	436	404	82	102	6	429	86	18
Future Volume (veh/h)	0	424	57	18	436	404	82	102	6	429	86	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1744	1786	1702	1730	1758	1786	1744	1786	1772	1786	1702
Adj Flow Rate, veh/h	0	424	57	18	436	404	82	102	6	429	86	18
Peak Hour 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
Percent Heavy Veh, %	0	4	1	7	5	3	1	4	1	2	1	7
Cap, veh/h	0	934	125	246	551	468	116	144	8	470	94	20
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.32	0.16	0.16	0.16	0.34	0.34	0.34
Sat Flow, veh/h	0	3019	392	828	1730	1469	732	910	54	1373	275	58
Grp Volume(v), veh/h	0	238	243	18	436	404	190	0	0	533	0	0
Grp Sat Flow(s),veh/h/ln	0	1657	1667	828	1730	1469	1696	0	0	1706	0	0
Q Serve(g_s), s	0.0	10.5	10.6	1.6	21.0	23.6	9.7	0.0	0.0	27.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.5	10.6	12.2	21.0	23.6	9.7	0.0	0.0	27.3	0.0	0.0
Prop In Lane	0.00		0.23	1.00		1.00	0.43		0.03	0.80		0.03
Lane Grp Cap(c), veh/h	0	528	531	246	551	468	269	0	0	584	0	0
V/C Ratio(X)	0.00	0.45	0.46	0.07	0.79	0.86	0.71	0.00	0.00	0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	611	615	288	638	542	648	0	0	652	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.8	24.8	29.7	28.4	29.3	36.4	0.0	0.0	28.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.1	5.9	12.2	3.4	0.0	0.0	16.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.0	4.0	0.3	9.0	9.4	4.2	0.0	0.0	13.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	25.4	25.4	29.8	34.2	41.5	39.8	0.0	0.0	45.0	0.0	0.0
LnGrp LOS		C	C	C	C	D	D			D		
Approach Vol, veh/h		481			858			190			533	
Approach Delay, s/veh		25.4			37.6			39.8			45.0	
Approach LOS		C			D			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.4		19.6		35.4		36.4				
Change Period (Y+Rc), s		6.3		5.1		6.3		5.1				
Max Green Setting (Gmax), s		33.7		34.9		33.7		34.9				
Max Q Clear Time (g_c+I1), s		12.6		11.7		25.6		29.3				
Green Ext Time (p_c), s		2.6		1.1		2.7		1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh			36.8									
HCM 7th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	562	192	78	671	10	152	5	42	7	6	13
Future Volume (vph)	44	562	192	78	671	10	152	5	42	7	6	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130		0	125		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	105			130			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			0.97	1.00	1.00			0.99			0.99	
Frt			0.850		0.998			0.972			0.932	
Flt Protected	0.950			0.950				0.963			0.987	
Satd. Flow (prot)	1693	1698	1515	1629	1724	0	0	1647	0	0	1620	0
Flt Permitted	0.219			0.319				0.963			0.987	
Satd. Flow (perm)	390	1698	1475	546	1724	0	0	1643	0	0	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192		1			14			13	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		649			1991			1192			353	
Travel Time (s)		11.1			33.9			32.5			9.6	
Confl. Peds. (#/hr)	3		3	3		3	3		3	3		3
Peak Hour 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
Heavy Vehicles (%)	1%	6%	1%	5%	4%	13%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	44	562	192	78	671	10	152	5	42	7	6	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	562	192	78	681	0	0	199	0	0	26	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	
Permitted Phases	2		2	6								
Detector Phase	2	2	2	6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.3	26.3	26.3	24.3	24.3		32.1	32.1		40.1	40.1	
Total Split (s)	45.0	45.0	45.0	45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	52.9%	52.9%	52.9%	52.9%	52.9%		23.5%	23.5%		23.5%	23.5%	
Maximum Green (s)	38.7	38.7	38.7	38.7	38.7		14.9	14.9		14.9	14.9	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		3.1	3.1		3.1	3.1	
All-Red Time (s)	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	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3			5.1			5.1	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	13.0	13.0	13.0	10.0	10.0		20.0	20.0		28.0	28.0	
Pedestrian Calls (#/hr)	3	3	3	3	3		3	3		3	3	
Act Effct Green (s)	33.8	33.8	33.8	33.8	33.8			14.3			10.0	
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.50			0.21			0.15	
v/c Ratio	0.23	0.66	0.23	0.29	0.79			0.56			0.10	
Control Delay (s/veh)	22.3	23.1	4.3	21.8	27.5			32.4			21.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay (s/veh)	22.3	23.1	4.3	21.8	27.5			32.4			21.2	
LOS	C	C	A	C	C			C			C	
Approach Delay (s/veh)		18.6			26.9			32.4			21.2	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 67.8			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 23.7		Intersection LOS: C	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Watson St N & SR 410

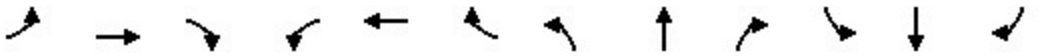
Intersection	
Int Delay, s/veh	9.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	471	160	88	597	128	67
Future Vol, veh/h	471	160	88	597	128	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	90	120	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	1	4	5	1	1
Mvmt Flow	471	160	88	597	128	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	631	0	1244	471
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	773	-
Critical Hdwy	-	-	4.14	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.236	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	942	-	193	595
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	457	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	942	-	175	595
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	414	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.18	69.85
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	231	-	-	942	-
HCM Lane V/C Ratio	0.843	-	-	0.093	-
HCM Ctrl Dly (s/v)	69.8	-	-	9.2	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	6.6	-	-	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	154	90	18	300	73	73	72	14	41	102	257
Future Volume (veh/h)	251	154	90	18	300	73	73	72	14	41	102	257
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1730	1786	1786	1772	1786	1786	1772	1786	1758	1786	1758
Adj Flow Rate, veh/h	251	154	90	18	300	73	73	72	14	41	102	257
Peak Hour 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
Percent Heavy Veh, %	1	5	1	1	2	1	1	2	1	3	1	3
Cap, veh/h	442	608	532	410	403	344	228	199	32	99	147	318
Arrive On Green	0.15	0.35	0.35	0.02	0.23	0.23	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1701	1730	1514	1701	1772	1514	428	630	102	93	466	1006
Grp Volume(v), veh/h	251	154	90	18	300	73	159	0	0	400	0	0
Grp Sat Flow(s),veh/h/ln	1701	1730	1514	1701	1772	1514	1160	0	0	1565	0	0
Q Serve(g_s), s	5.8	3.6	2.3	0.5	9.0	2.2	0.0	0.0	0.0	5.9	0.0	0.0
Cycle Q Clear(g_c), s	5.8	3.6	2.3	0.5	9.0	2.2	5.3	0.0	0.0	13.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.46		0.09	0.10		0.64
Lane Grp Cap(c), veh/h	442	608	532	410	403	344	459	0	0	565	0	0
V/C Ratio(X)	0.57	0.25	0.17	0.04	0.74	0.21	0.35	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	925	1630	1426	806	1670	1426	1040	0	0	1270	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.1	13.2	12.7	16.2	20.5	17.9	14.9	0.0	0.0	17.8	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.2	0.1	0.0	2.7	0.3	0.4	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.2	0.7	0.2	3.5	0.7	1.4	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.3	13.4	12.9	16.3	23.2	18.2	15.3	0.0	0.0	19.5	0.0	0.0
LnGrp LOS	B	B	B	B	C	B	B			B		
Approach Vol, veh/h		495			391			159			400	
Approach Delay, s/veh		13.7			21.9			15.3			19.5	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	26.3		23.9	13.8	19.3		23.9				
Change Period (Y+Rc), s	5.5	6.3		5.9	5.5	6.3		5.9				
Max Green Setting (Gmax), s	14.5	53.7		44.1	24.5	53.7		44.1				
Max Q Clear Time (g_c+I1), s	2.5	5.6		15.3	7.8	11.0		7.3				
Green Ext Time (p_c), s	0.0	1.1		2.7	0.6	2.0		1.1				

Intersection Summary			
HCM 7th Control Delay, s/veh		17.7	
HCM 7th LOS		B	

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	76	14	69	13	16	21	53	306	14	28	334	68
Future Vol, veh/h	76	14	69	13	16	21	53	306	14	28	334	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	1	3	1	8	13	5	1	1	14	4	2
Mvmt Flow	84	16	77	14	18	23	59	340	16	31	371	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	938	944	409	907	974	348	447	0	0	356	0	0
Stage 1	471	471	-	466	466	-	-	-	-	-	-	-
Stage 2	467	473	-	441	509	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.51	6.23	7.11	6.58	6.33	4.15	-	-	4.24	-	-
Critical Hdwy Stg 1	6.15	5.51	-	6.11	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.51	-	6.11	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.009	3.327	3.509	4.072	3.417	2.245	-	-	2.326	-	-
Pot Cap-1 Maneuver	242	263	640	258	246	671	1098	-	-	1140	-	-
Stage 1	568	561	-	579	553	-	-	-	-	-	-	-
Stage 2	571	560	-	597	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	194	236	640	192	221	671	1098	-	-	1140	-	-
Mov Cap-2 Maneuver	194	236	-	192	221	-	-	-	-	-	-	-
Stage 1	547	541	-	540	516	-	-	-	-	-	-	-
Stage 2	496	522	-	492	509	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	36.25	20.23	1.2	0.54
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	254	-	-	285	292	113	-	-
HCM Lane V/C Ratio	0.054	-	-	0.62	0.191	0.027	-	-
HCM Ctrl Dly (s/v)	8.5	0	-	36.2	20.2	8.2	0	-
HCM Lane LOS	A	A	-	E	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3.8	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	6	384	12	7	392
Future Vol, veh/h	8	6	384	12	7	392
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	7	417	13	8	426

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	865	424	0	0	430	0
Stage 1	424	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	324	630	-	-	1129	-
Stage 1	660	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	321	630	-	-	1129	-
Mov Cap-2 Maneuver	321	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	643	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.2	0	0.14
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	32	-
HCM Lane V/C Ratio	-	-	0.037	0.007	-
HCM Ctrl Dly (s/v)	-	-	14.2	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Left Turn Lane Warrants

Exhibit 1310-9 Left-Turn Storage Guidelines: Two-Lane, Unsignalized

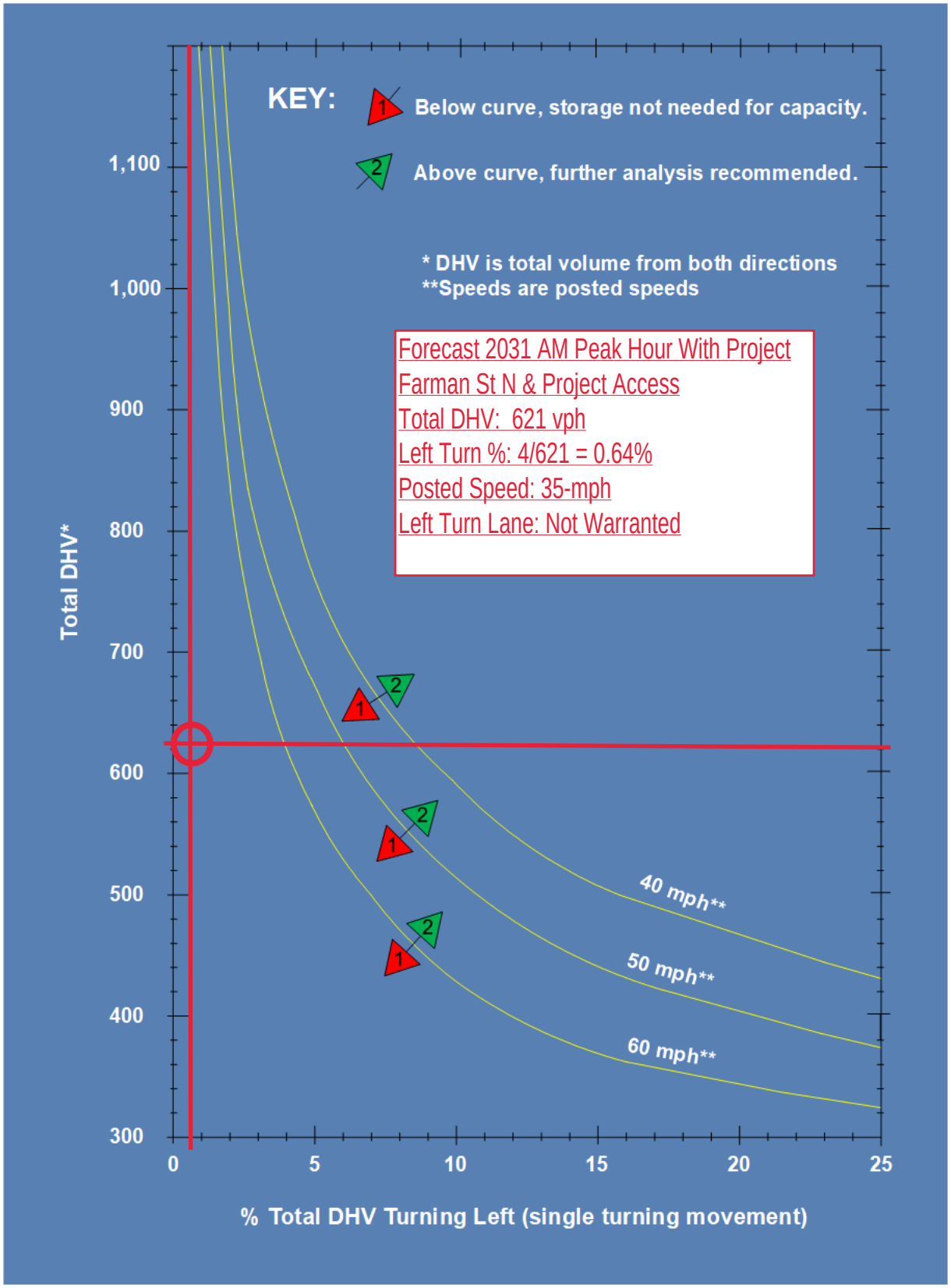
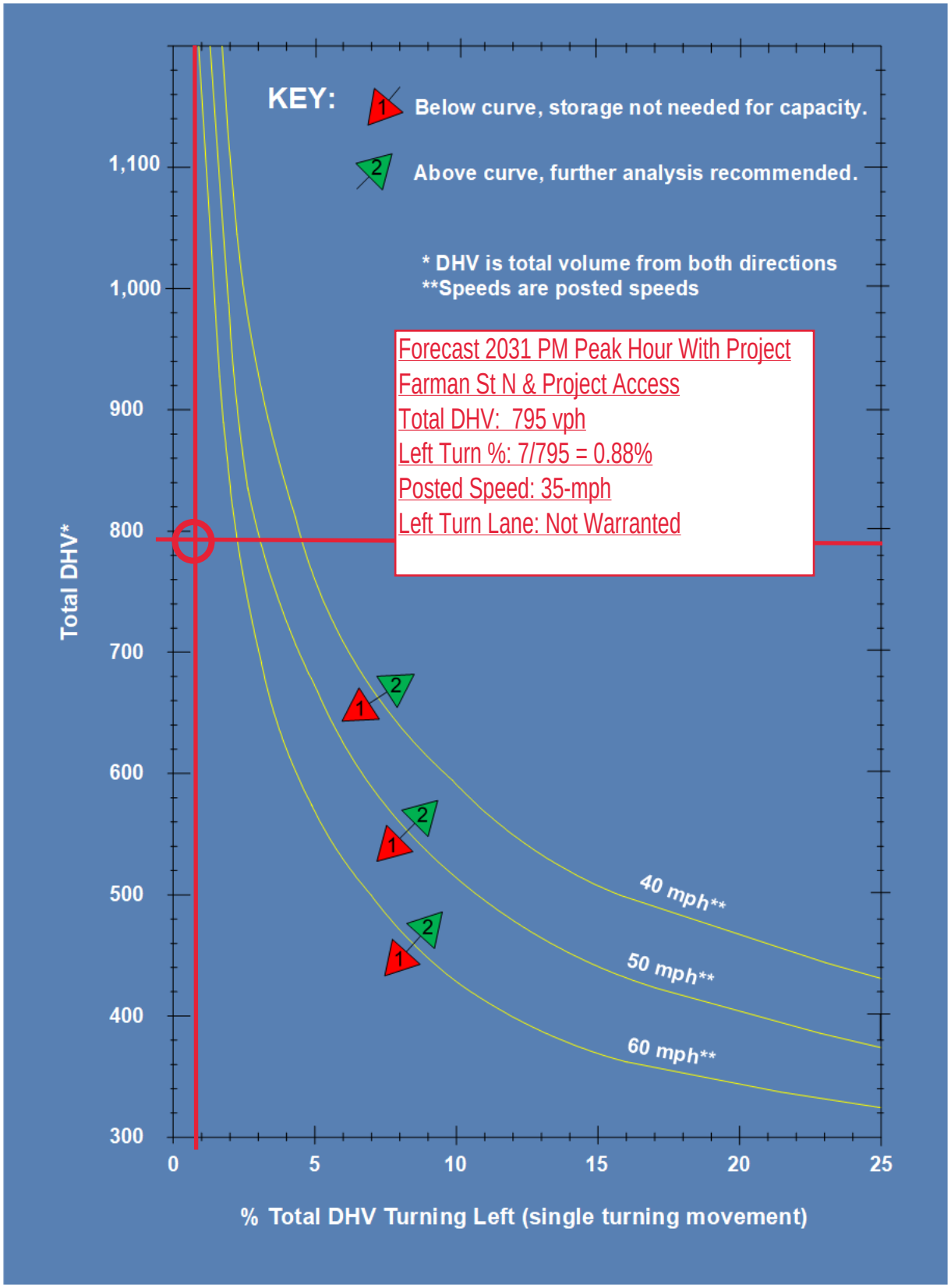


Exhibit 1310-9 Left-Turn Storage Guidelines: Two-Lane, Unsignalized



RAINIER LODGING

TRAFFIC IMPACT ANALYSIS

APPENDIX
Site Plan

A PORTION OF THE SE 1/4 OF SECTION 19, TWP 20 N, REG 7E, WM

SCALE: 1" = 20'

20 10 0 20 40

CONTOUR INTERVAL = 2'

n

PROPOSED ROCK WALL 1' TO 5' IN HEIGHT

SEE SHEET EN-12 FOR SECTIONS, (TYP)

EX 10' PSE EASEMENT PER AFN 9408120229

WETLAND

ROAD A

ENTRY ROAD

PROPOSED ROCK WALL 1' TO 4' IN HEIGHT

BUILDING #1
PAD=754.00

BUILDING #2
PAD=755.00

BUILDING #3
PAD=754.00

BUILDING #4
PAD=755.50

BUILDING #5
PAD=756.00

PLAY GROUND/ OUTDOOR GYM

TRASH ENCLOSURE

PROPOSED ROCK WALL 0.5' TO 5.3' IN HEIGHT

MAINTENANCE SHOP
PAD=761.40

762.00
HIGH POINT

751.25
LOW POINT

PROPOSED ROCK WALL 1' TO 3.5' IN HEIGHT

PROPOSED ROCK WALL 0.5' TO 4.5' IN HEIGHT

PROPOSED ROCK WALL 4' IN HEIGHT

STORMWATER DETENTION POND

TRASH ENCLOSURE

PROPOSED ROCK WALL 0.5' TO 6.5' IN HEIGHT

APPROXIMATE EARTHWORK QUANTITIES

6" STRIPPING	13,525 CY
CUT	1,605 CY
FILL	18,620 CY
NET	17,015 CY FILL

REVISIONS

NO.	DESCRIPTION/DATE	BY

CONSULTING ENGINEERS LLC
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FEDERAL WAY (253) 838-6113
LYNNWOOD (425) 297-9900
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ESM
Civil Engineering | Land Planning
Public Works | Land Surveying
Project Management | Landscape Architecture

FOOTHILL RIDGE, LLC

RAINIER LODGING - PHASE 2

GRADING EXHIBIT

CITY OF ENUMCLAW WASHINGTON

JOB NO.:	2289-001-022
DWG. NAME:	EN-11
DESIGNED BY:	LGB
DRAWN BY:	CJR
CHECKED BY:	
DATE:	02/11/2025
DATE OF PRINT:	

EN-11

1 OF 2 SHEETS