



TRAFFIC IMPACT ANALYSIS

Woodburn Community Credit Union Development

PREPARED FOR:
Unitus

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Version 1



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1.0 Executive Summary

1.1. PURPOSE

- The purpose of this study is to provide an analysis of the potential traffic operations and safety impacts of the proposed Unitus Community Credit Union in Woodburn, OR.

1.2. PROJECT DESCRIPTION

- The proposed project, located at 2951 Stacy Allison Way (Tax Lot 052W12C000604), consists of a drive-through bank with two drive-through lanes and supporting office uses.
- The proposed building size is 16,500 ft² over 3 floors (5,500 ft² per floor).

1.3. SCOPE OF ANALYSIS

- Operational Analysis (7 intersections)
 - 2022 Existing Conditions (AM / PM Peak Hours)
 - 2024 Background + In-Process Trips (AM / PM Peak Hours)
 - 2024 Full Build + Background + In-Process Trips (AM / PM Peak Hours)
- Crash Analysis (10 intersections, using 2016-2020 data)
- Review of Active Transportation Options and Transit Service
- Review of Approved Projects within the Interchange Management Area
- Calculation of Project PM Peak Hour Vehicle Trips by Intersection for 3 Additional Intersections

1.4. KEY FINDINGS

- The proposed Woodburn Community Credit Union project is expected to attract a total of 42 AM peak hour trips and 81 PM peak hour trips, including 37 net new AM peak hour trips and 62 net new PM peak hour trips (after accounting for pass-by trips).
- Although the number of net new PM peak hour trips (62 trips) exceeds the number of peak hour trips allocated to the site within the Interchange Management Area Overlay District (41 trips), nearby recently proposed projects are expected to generate fewer trips than allocated, allowing for the accommodation of these 21 excess peak hour trips within the system.
- Several nearby intersections have elevated crash levels (based on 2016-20 data), and mitigation may be needed. These intersections include:
 - Stacy Allison Way & Evergreen Rd
 - OR 214 & Evergreen Rd
 - OR 214 & I-5 NB
 - OR 214 & I-5 SB
 - OR 214 & Country Club Rd/Oregon Way
- By 2024, including background growth, in-process trips, project pass-by trips, and new project trips, all intersections analyzed are expected to operate within the mobility targets established by ODOT and the City of Woodburn. However, in addition to the intersections identified above for safety improvements, the following intersections will likely require operational/capacity improvements in the near to long-term based on previously completed analyses in the area:
 - OR 214 & Boones Ferry Rd/Settlemer Ave
 - OR 214 & Highway 99E
 - Evergreen Rd & Hayes Street

1.5. RECOMMENDATIONS

- Ensure landscaping does not restrict sight lines for vehicles departing the site. AASHTO recommends 280 feet of clear sight distance for vehicles entering a 25 mph roadway from a stop.
- Implement the following Transportation Demand Management programs/improvements to encourage the use of alternative modes of transportation (transit, biking, walking, carpool, & vanpool):
 - Guaranteed Ride Home Program
 - Pre-tax Commuter Benefits
 - Outdoor Bike Racks
 - Pedestrian Pathways
- Work with the City to determine if a proportionate share contribution will be required for any of the following nearby intersections where safety and/or capacity improvements have been proposed:

■ Stacy Allison Way & Evergreen Rd	48 new PM vehicle trips
■ OR 214 & Evergreen Rd	42 new PM vehicles trips
■ OR 214 & I-5 NB	31 new PM vehicle trips
■ OR 214 & Country Club Rd/Oregon Way	22 new PM vehicle trips
■ OR 214 & Boones Ferry Rd/Settlemer Ave	22 new PM vehicle trips
■ OR 214 & I-5 SB	19 new PM vehicle trips
■ OR 214 & Highway 99E	13 new PM vehicle trips
■ Evergreen Rd & Hayes Street	6 new PM vehicle trips

2.0 Introduction

2.1. PURPOSE

The purpose of this study is to provide an analysis of the potential traffic operations and safety impacts of the proposed Unitus Community Credit Union in Woodburn, OR. The study also includes recommendations related to transportation demand management (TDM), a review of the Interchange Management Area (IMA) overlay district trip budget, and calculations of vehicle trips for proportionate share contribution calculations.

2.2. PROJECT DESCRIPTION

The proposed project, located at 2951 Stacy Allison Way (Tax Lot 052W12C000604), consists of a drive-through bank with two drive-through lanes and supporting office uses. The proposed building size is 16,500 ft² over 3 floors (5,500 ft² per floor). The proposed parking lot will include 62 spaces (3.8 stalls per 1,000 ft²).

The 1.252-acre property is currently undeveloped and is within the Commercial General (CG) zoning district and the Interchange Management Area (IMA) overlay district. More specifically, the property is within “Subarea I” of the IMA overlay district, which is subject to a maximum of 33 trips per developed commercial acre. The intent of the overlay district is to preserve the capacity of the I-5/Highway 214 Interchange, and a vehicle trip budget of 2,500 peak hour trips (from 29 vacant commercial and industrial parcels) was established to maintain long-term capacity.

Figure 1 presents a preliminary conceptual site plan for the proposed development.

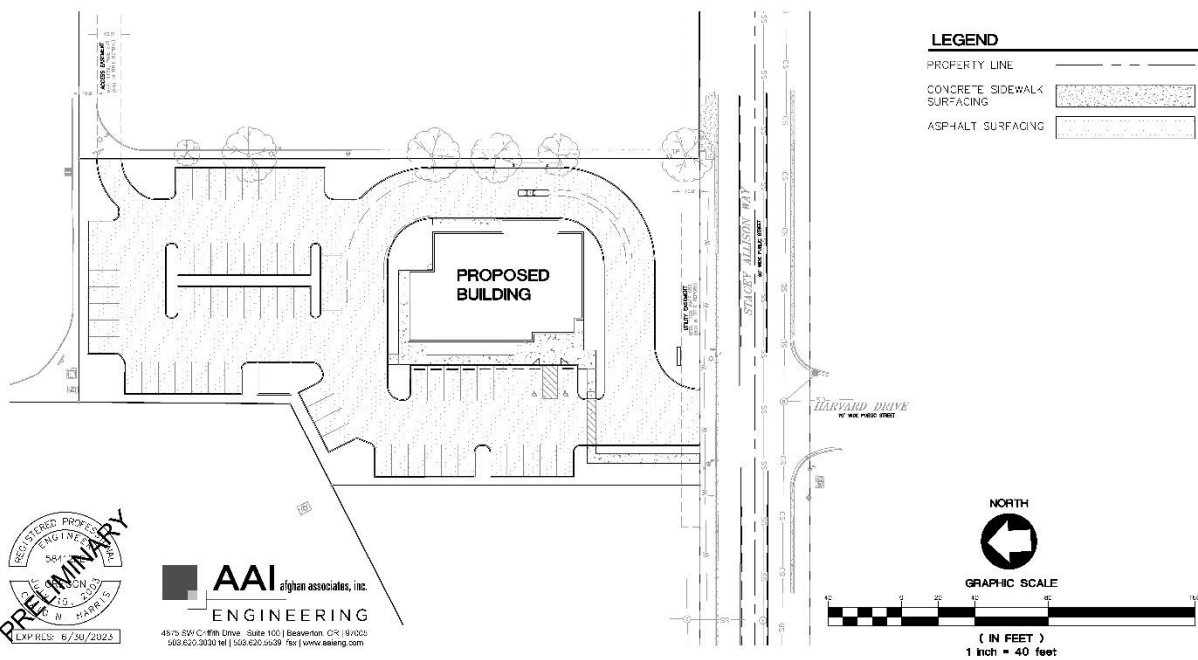


Figure 1: Preliminary Site Plan

2.3. STUDY AREA

Per information provided at the Pre-Application meeting for the project (held on Wednesday, March 2, 2022), a Scoping Memo submitted to ODOT and the City of Woodburn on April 8, 2022 (**Appendix B**), and scoping notes provided by ODOT on April 21, 2022 and City of Woodburn/Otak staff on May 16, 2022 (**Appendix C**), the following study intersections will be analyzed within the TIA (see **Figure 2**):

1. Stacy Allison Way & Harvard Drive (Proposed site access)
2. Evergreen Road & Harvard Drive
3. Evergreen Road & Stacy Allison Way
4. Evergreen Road & Highway 214
5. Highway 214 & I-5 Northbound Ramps
6. Highway 214 & I-5 Southbound Ramps
7. Highway 214 & Boones Ferry Road/Settlemer Ave

At the request of the City of Woodburn (**Appendix C**), the following intersection have also been included within the safety analysis and trip distribution sections of the report, but not included within the analysis of traffic operations:

8. Hayes Street & Evergreen Road
9. Highway 214 & Country Club Road/Oregon Way
10. Highway 214/Highway 211 & Pacific Highway/99E

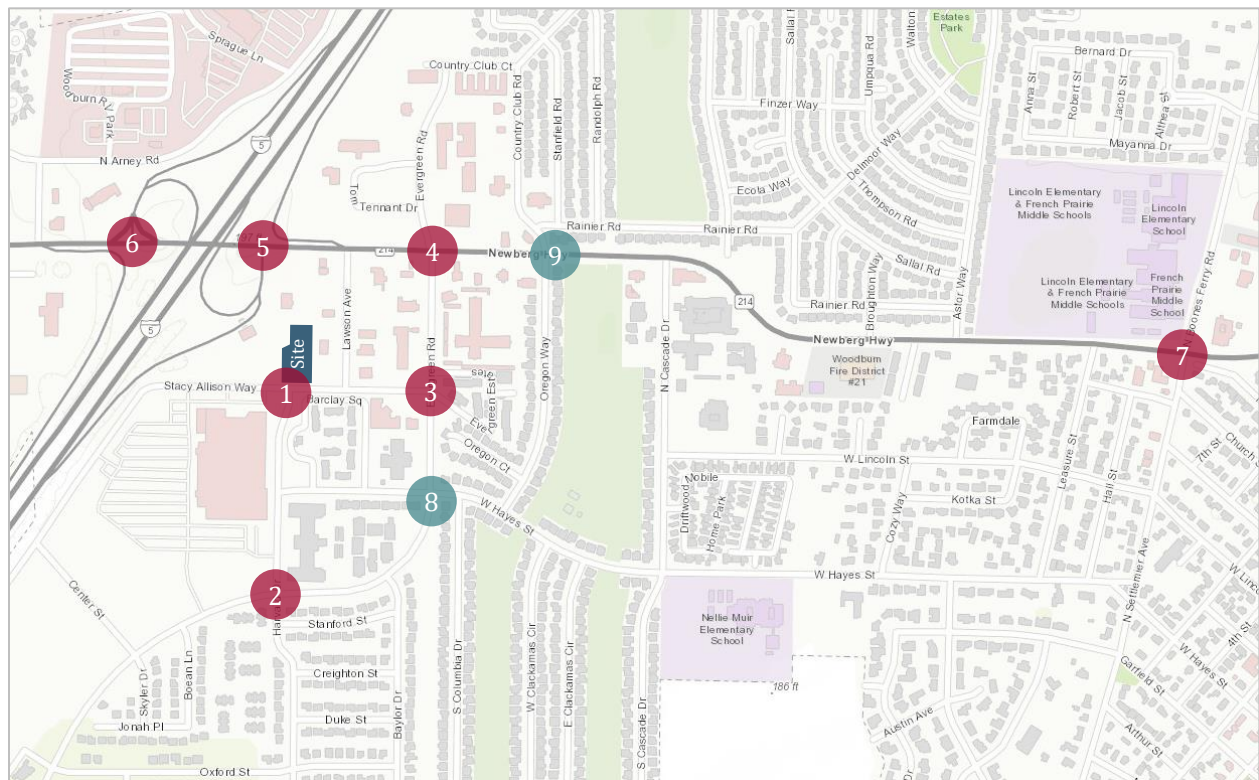


Figure 2: Study Area Intersections
(Red: Full Analysis; Blue: Limited Analysis of Safety/PM Peak Hour Trips)

2.4. SCOPE OF TRAFFIC OPERATIONS ANALYSIS

The following analysis scenarios are included within the operational analysis, assuming full build by 2024:

- 2022 Existing Conditions (AM Peak Hour)
- 2022 Existing Conditions (PM Peak Hour)
- 2024 Background + In-Process Trips (AM Peak Hour)
- 2024 Background + In-Process Trips (PM Peak Hour)
- 2024 Full Build + Background + In-Process Trips (AM Peak Hour)
- 2024 Full Build + Background + In-Process Trips (PM Peak Hour)

For each scenario, delay, level of service, and the volume to capacity ratio¹ has been analyzed for each study area intersection using the Highway Capacity Manual 6th Edition for signalized and unsignalized intersections. Additionally, a simulation-based queue length analysis has been provided for any intersection that exceeds a v/c ratio of 0.70.

2.5. ADDITIONAL ANALYSES

In addition to the traffic operations analysis, the following analyses has been completed to assist with the review of transportation impacts from the proposed project:

- Crash Analysis (10 intersections, using 2016-2020 data)
- Review of Active Transportation Options and Transit Service
- Review of Approved Projects within the Interchange Management Area
- Calculation of Project PM Peak Hour Vehicle Trips by Intersection for 3 Additional Intersections

¹ The ODOT Analysis Procedures Manual provides guidance on calculating the critical intersection v/c ratio using adjusted flow rates, saturation flow rates, lost time per cycle, and cycle length; this method has been used for all signalized v/c ratios shown in this Report.

3.0 Existing Conditions

3.1. LAND USE

The site is currently zoned CG: Commercial General. The site is currently vacant. Additionally, the site is located within the Interchange Management Area (IMA) overlay district.

3.2. ROADWAY CHARACTERISTICS

Table 1 summarizes the roadway characteristics of the primary roadways within the study area, including pedestrian and bicycle facilities. **Figure 3** shows the existing and proposed lane configuration and control for each of the primary intersections within the study area.

Table 1: Roadway Characteristics

Name	Jurisdiction	Classification	Speed	Travel Lanes	Sidewalks	On-Street Parking	Bike Lanes
Stacy Allison Way	City	Service Collector	25	2	Both ²	No	No
Harvard Rd	City	Local	25	2	Both	Both	No
Evergreen Rd	City	Minor Arterial	25	2	Partial ³	No	Partial ⁴
OR 214	ODOT	Major Arterial ⁵	30 ⁶	4 ⁷	Both	No	Both

² Both sides between Harvard Drive and Evergreen Rd, with the exception of the portion bordering the proposed project on the north side.

³ There is a gap in sidewalk coverage between Hayes Street and Stacy Allison Way.

⁴ South of Hayes Street only.

⁵ And District Highway

⁶ Transition to 35 MPH at Settlemier Avenue/Boones Ferry Road.

⁷ Transitions to 2 lanes at Broughton Way.

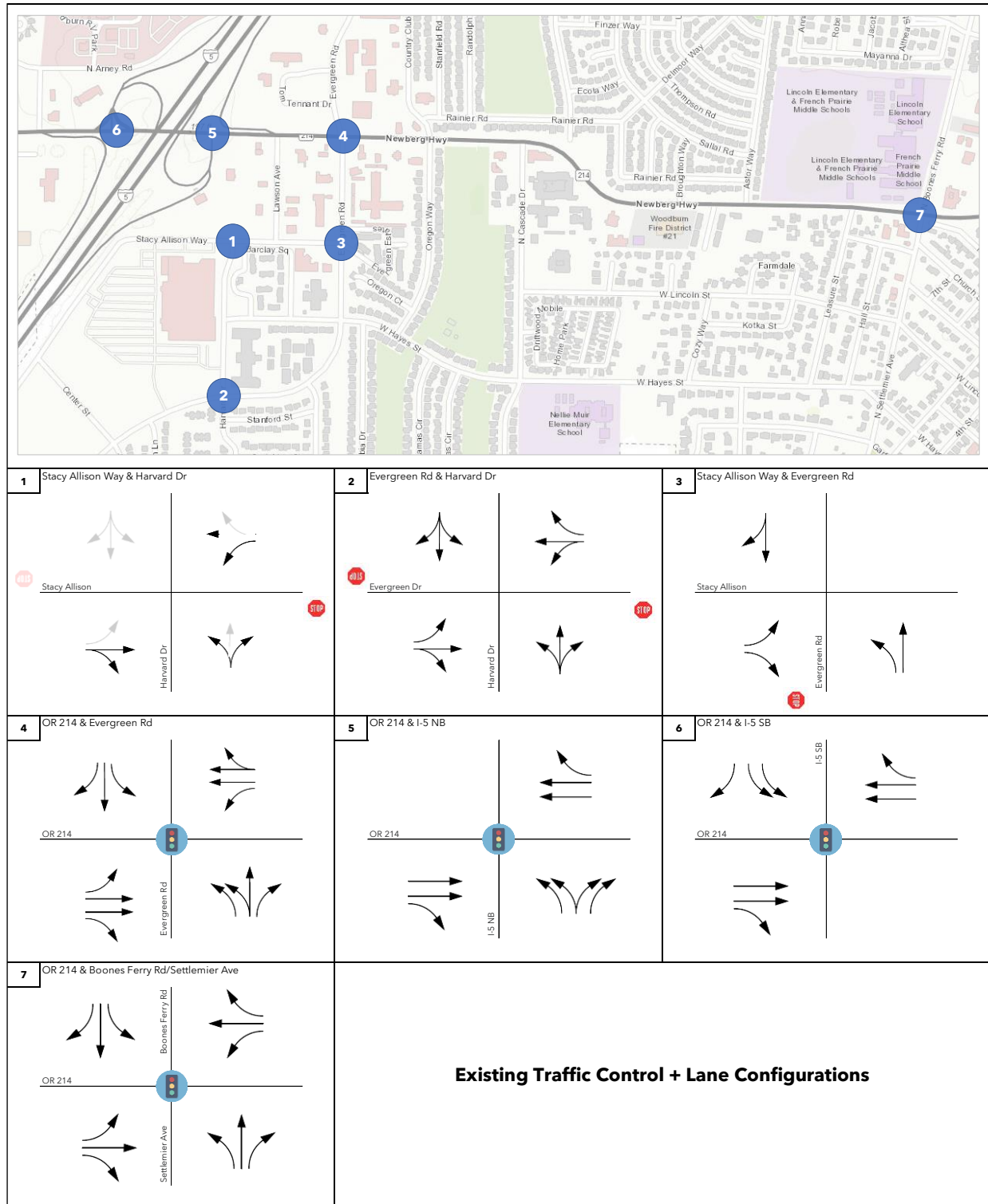


Figure 3: Existing Traffic Control and Lane Configurations

3.3. PEDESTRIAN AND BICYCLE FACILITIES

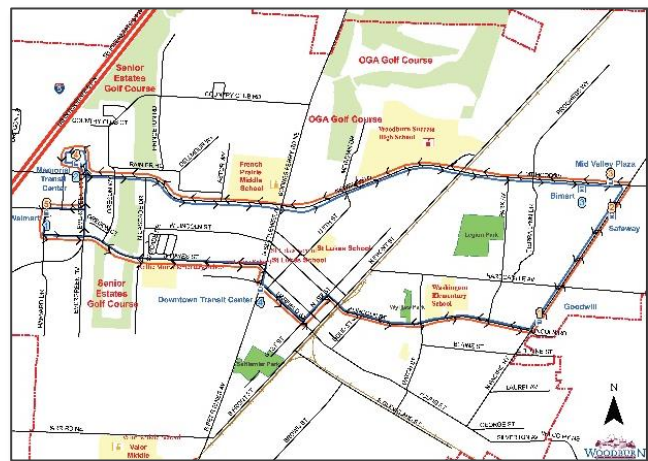
Sidewalks are currently available on both sides of Stacy Allison Way (east of Harvard Dr, except for fronting the project), on Lawson Avenue, on Harvard Drive, on Evergreen Road (north of Stacy Allison Way), and along OR 214 (Hillsboro-Silverton Highway). As part of the project, sidewalk will be added on the north side of Stacy Allison Way (fronting the project), providing full sidewalk connectivity to areas east, north, and south. To the west, there are no destinations west of the proposed project on the north side of Stacy Allison Way, and the sidewalk on the south side provides connectivity to nearby destinations. There will remain a gap in sidewalk coverage on Evergreen Road between Hayes Street and Stacy Allison Way.

On-street bike lanes are available on both sides of OR 214 (Hillsboro-Silverton Highway) and Evergreen Rd south of Hayes Street.

3.4. TRANSIT SERVICE

After a pause in service during the COVID-19 pandemic, as of July 1, 2022, Woodburn Transit Service operates Fixed Route and Express Route Bus service 7-days a week on the route shown at right. The “Walmart” transit stop is located 150-foot south of the proposed project on Harvard Dr, providing transit access to the following destinations and connections:

- Woodburn Memorial Transit Center
 - POINT Cascades Route (intercity service to Portland, Tualatin, Salem, Albany, & Eugene)
- Woodburn Downtown Transit Center
 - Cherriots Route 10X (service to Salem)
- Bi-Mart
 - Cherriots Route 10X (service to Salem)
 - Cherriots Route 20X (service to Silverton/Salem)
 - CAT Route 99X (service to Canby/Oregon City)
- Mid Valley Plaza
- Safeway
- Goodwill



3.5. VEHICLE TURNING MOVEMENT COUNTS

AM and PM peak hour intersection turning movement counts were collected at all seven study area intersections between the hours of 7 AM and 9 AM and 4 PM and 6 PM, respectively, on **Wednesday, June 1, 2022**. Each count includes passenger vehicles, pedestrians, bicycles, and heavy vehicles (in 5-minute intervals). The count data sheets are provided in **Appendix D**.

3.6. SEASONAL ADJUSTMENTS

To obtain a seasonal adjustment factor, data was pulled from the nearest ATR (24-001 on OR 99E), which is classified as consistent with a “Commuter” profile.

Table 2: Calculation of Seasonal Adjustment Factor

	Peak Month	June
2019	*117%	117%
2018	*109%	109%
2017	**117%	109%
2016	*111%	111%
2015	*113%	113%
Average:	114%	111%
Seasonal Adjustment Factor:		1.03

*Peak Month: June

**Peak Month: August

Note: Strike through/grey values excluded from average (highest and lowest values)

As noted in the TIA Scoping Memo (**Appendix B**), a seasonal adjustment factor of **1.03** has been applied to the June traffic counts.

The seasonally-adjusted traffic volumes used in the analysis are shown in **Figure A1** and **A2** in **Appendix A**.

3.7. CRASH ANALYSIS

Historical crash records for all seven (7) study area intersections and three (3) additional intersections requested by City of Woodburn/Otak staff were reviewed for potential safety deficiencies. The most recent 5-year period (2016-2020) was obtained from ODOT’s online crash data system for the analysis; in several cases, two reports were added together to get a complete count of intersection crashes due to a change in name of the street on either side of the intersection. To calculate the critical crash rate, for comparison with ODOT’s 90th percentile rates, a K-Factor of 0.10 was applied to the unadjusted PM peak hour counts to approximate AADT.

The complete set of crash data used in the analysis is provided in **Appendix G**.

Table 3: Crashes by Type and Severity

ID	Intersection	Collision Type								Severity					Total Crashes
		Rear-End	Sideswipe	Turning	Angle	Fixed Object	Backing	Pedestrian	Parking	PDO	C	B	A	Fatality	
1	Stacy Allison Way & Harvard Dr			1					1	1	1				2
2	Evergreen Rd & Harvard Dr			3	2					2	3				5
3	Stacy Allison Way & Evergreen Rd	1		6				1		5	2	1			8
4	OR 214 & Evergreen Rd	9	1	40	7	1				20	29	8	1		58
5	OR 214 & I-5 NB	13	1	24						19	18	1			38
6	OR 214 & I-5 SB	27	1	6						7	22	4	1		34
7	OR 214 & Boones Ferry Rd/Settlemer Ave	6		1				1		2	4	2			8
8	Hayes St & Evergreen Rd				1	1				1	1				2
9	OR 214 & Country Club Rd/Oregon Way	2		38	5					15	16	12	2		45
10	OR 214/OR 211 & Pacific Hwy	23		8	2	1	1	1		10	21	4	1		36

Table 4: Crash Rates

ID	Intersection	2016	2017	2018	2019	2020	Total	Entering Volume	K-Factor	AADT	Crash Rate	ODOT 90 th Percentile
1	Stacy Allison Way & Harvard Dr				1	1	2	614	0.100	6,140	0.18	0.29
2	Evergreen Rd & Harvard Dr	1		1	2	1	5	613	0.100	6,130	0.45	0.41
3	Stacy Allison Way & Evergreen Rd	1	1	1	3	2	8	847	0.100	8,470	0.52	0.29
4	OR 214 & Evergreen Rd	11	13	11	10	13	58	2,848	0.100	28,480	1.12	0.86
5	OR 214 & I-5 NB	8	9	6	5	10	38	2,994	0.100	29,940	0.70	0.51
6	OR 214 & I-5 SB	5	10	7	8	4	34	2,906	0.100	29,060	0.64	0.51
7	OR 214 & Boones Ferry Rd/Settlemer Ave	2	3	2	1		8	2,646	0.100	26,460	0.17	0.86
8	Hayes St & Evergreen Rd		1	1			2	958	0.100	9,580	0.11	0.41
9	OR 214 & Country Club Rd/Oregon Way	8	8	12	9	8	45	2,226	0.100	22,260	1.11	0.86
10	OR 214/OR 211 & Pacific Hwy	9	8	11	3	5	36	3,038	0.100	30,380	0.65	0.86

Table 5: High Severity Crashes (At least one injury "A")

Date	Location	Type	Vehicles	Cause
2/8/18	OR 214 & Evergreen Rd	Angle	1) Straight (W-E) 2) Straight (N-S) 3) Straight (Unknown) 4) Straight (Unknown) 5) Straight (Unknown)	Vehicle #1 Disregarded traffic signal
8/16/16	OR 214 & I-5 SB	Turning	1) Straight (E-W) 2) Turning Left (N-E)	Vehicle #1 Disregarded traffic signal
8/11/19	OR 214 & Country Club Rd/Oregon Way	Turning	1) Straight (W-E) 2) Turning Left (E-S)	Vehicle #2 Did not have right-of-way; Left turn in front of oncoming traffic
12/27/18	OR 214 & Country Club Rd/Oregon Way	Turning	1) Straight (E-W) 2) Turning Left (W-N)	Vehicle #2 Disregarded traffic signal
9/14/18	OR 214/OR 211 & Pacific Hwy	Turning	1) Straight (NE-SW) 2) Turning Left (NE-E)	Vehicle #1 Disregarded traffic signal; Passing at intersection; Reckless driving

Stacy Allison Way & Harvard Dr

No safety issues noted.

Stacy Allison Way & Evergreen Rd

Although this intersection *slightly* exceeds the ODOT 90th percentile rate, with only 1 crash per year on average, there are no trends apparent that would suggest mitigation is necessary at this time.

Stacy Allison Way & Evergreen Rd

Volumes have increased at this intersection in recent years due to ongoing development, and several studies have noted that this intersection is likely to fall short of the City's mobility targets in the medium to long term. As volumes and delays increase, drivers may be more likely to accept smaller gaps in traffic. A traffic signal (or roundabout) will likely be needed to address delays and safety.

OR 214 & Evergreen Rd

This intersection has been identified as a key intersection for safety improvements in multiple recent traffic impact studies. The phasing has been updated recently (Spring 2022) that is not reflected in this data; however, City/Otak staff noted that additional improvements and study may be undertaken in the future.

OR 214 & I-5 NB

The most common crash types at this intersection involve vehicles exiting I-5 and either causing a rear-end collision on the off-ramp, or disregarding the signal. Previous studies have noted additional signage/advance warning as a potential mitigation measure on the ramps.

OR 214 & I-5 SB

The majority of crashes at this intersection are rear-end collisions related to vehicles exiting I-5 and following too closely or failing to stop. Previous studies have noted additional signage/advance warning as a potential mitigation measure on the ramps.

OR 214 & Boones Ferry Rd/Settlemier Ave

No safety issues noted.

Hayes St & Evergreen Rd

No safety issues noted.

OR 214 & Country Club Rd/Oregon Way

As noted in the City's TIA Scoping Memo Review (**Appendix C**), this intersection has been identified for its elevated crash rate. The proposed project may need to contribute a modest share to Transportation System Plan (TSP) Project R11: OR 214/Oregon Way/Country Club Road Intersection to "investigate corridor signal timing and coordination adjustments in coordination with ODOT."

OR 214/OR 211 & Pacific Hwy

No safety issues noted. However, per the City's TIA Scoping Memo Review (**Appendix C**), the intersection is currently over capacity and improvements will need to be implemented.

4.0 Future Year Background Conditions (2024)

The future year background traffic scenarios (2024) include an analysis of how the study area's transportation system will operate in the future without the proposed development. These scenarios include both background growth and in-process traffic from nearby development projects that have not yet been constructed.

4.1. BACKGROUND GROWTH

ODOT's forecasted traffic volumes for Highway 214 (ODOT Highway #140) show a linear growth rate of approximately 0.3% through 2040 (using a base year of 2019). This may underestimate growth on local city streets, however. At the request of City of Woodburn/Otak staff, a **1.4% linear growth** rate has been applied for two years to the seasonally-adjusted 2022 existing conditions volumes at all study area intersections. Specifically, all seasonally-adjusted turning movement volumes from Existing Conditions scenarios were multiplied by 1.028 to account for this expected background linear growth by 2024.

4.2. IN-PROCESS DEVELOPMENT PROJECTS

At the request of City of Woodburn/Otak staff, new trips associated with the following projects⁸ have been added to 2024 background traffic volumes to account for additional traffic that is likely to be added to the system within the timeframe of this proposed project. It is assumed that any additional projects not listed here are either already included in the June 2022 traffic volume counts, or will generate new trips beyond the timeline of this project (2025 and later):

- Allison Way Apartments (TIA dated May 1, 2020)
- Project Basie (TIA dated September 9, 2021)
- Phased Spec Industrial (TIA dated April 20, 2022)
- Woodburn US Market (TIA dated August 13, 2021)

The combined in-process trips used in the Future Year Background Traffic Volume Scenarios are shown in **Figure A3** and **A4** in **Appendix A**.

4.3. FUTURE BACKGROUND TRAFFIC VOLUMES

The future year (2024) background AM and PM peak hour traffic volumes, taking into account background traffic growth as well as traffic associated with nearby in-process developments, are shown in **Figure A5** and **A6** in **Appendix A**.

⁸ A TIA for 8708 Parr Road had not been completed at the time of this study and is not included.

5.0 Proposed Site Development

5.1. DEVELOPMENT ASSUMPTIONS

The proposed project consists of a drive-through bank with two drive-through lanes and supporting office uses. The proposed building size is 16,500 ft² over 3 floors (5,500 ft² per floor). The proposed parking lot will include 62 spaces (3.8 stalls per 1,000 ft²).

5.2. TRIP GENERATION

The proposed land uses most closely correspond to the following two land use categories within ITE's Trip Generation Manual (11th Edition):

- First Floor: Drive-In Bank (Land Use Code 912)
- 2nd/3rd Floor: General Office Building (Land Use Code 710)

The following trip rates correspond to these land use categories:

- Daily
 - Drive-In Bank: **117.67** trips per drive-in lane + **35.3** trips (50% entering / 50% exiting)⁹
 - General Office: $e^{0.87 \cdot \ln(1,000 \text{ ft}^2 \text{ GFA})} + 3.05$ (50% entering / 50% exiting)¹⁰
- AM Peak Hour
 - Drive-In Bank: **8.71** trips per drive-in lane - **0.75** trips (61% entering / 39% exiting)¹¹
 - General Office: $e^{0.86 \cdot \ln(1,000 \text{ ft}^2 \text{ GFA})} + 1.16$ (50% entering / 50% exiting)¹²
- PM Peak Hour
 - Drive-In Bank: **27.07** trips per drive-in lane (49% entering / 51% exiting)¹³
 - General Office: $e^{0.83 \cdot \ln(1,000 \text{ ft}^2 \text{ GFA})} + 1.29$ (50% entering / 50% exiting)¹⁴

⁹ Fitted curve used as required by City of Woodburn (R² = 0.55, 20 studies).

¹⁰ Fitted curve used as required by City of Woodburn (R² = 0.78, 59 studies).

¹¹ Fitted curve used as required by City of Woodburn (R² = 0.59, 36 studies).

¹² Fitted curve used as required by City of Woodburn (R² = 0.78, 221 studies).

¹³ Fitted curve equation not provided, average rate used.

¹⁴ Fitted curve used as required by City of Woodburn (R² = 0.77, 232 studies).

Table 6 and **Table 7** show the corresponding peak hour trips for the AM and PM peak hours, respectively. The values have been added to Background Traffic + In-Process Trips for the Full Build scenarios.

Table 6: AM Peak Hour Trips

Land Use	ITE Code	Units	Daily Trips	AM Peak Hour		Pass-By ¹⁵		Net New	
				In	Out	In	Out	In	Out
Drive-in Bank	912	2 Drive-in Lanes	271	10	7	3	2	7	5
General Office	710	11,000 ft ²	170	22	3	0	0	22	3
Total Trips			441	32	10	3	2	29	8
				42 trips		5 trips		37 trips	

Table 7: PM Peak Hour Trips

Land Use	ITE Code	Units	Daily Trips	PM Peak Hour		Pass-By ¹⁶		Net New	
				In	Out	In	Out	In	Out
Drive-in Bank	912	2 Drive-in Lanes	271	26	28	9	10	17	18
General Office	710	11,000 ft ²	170	5	22	0	0	5	22
Total Trips			369	31	50	9	10	22	40
				81 trips		19 trips		62 trips	

After reductions for pass-by trips (29% AM / 35% PM for drive-in banks), the following net new peak hour trips are expected:

- AM Peak Hour: 37 net new trips
- PM Peak Hour: 62 net new trips

5.3. TRANSPORTATION DEMAND MANAGEMENT

The following strategies have been identified for implementation to encourage the use of alternative modes of transportation to and from the site among employees:

1. **Guaranteed Ride Home Program:** Provide employees who regularly utilize drive alone alternatives with a guaranteed ride home should their alternative commuting option fall through. Reasons for needing a guaranteed ride home might include transit service disruptions, the need to stay later, severe weather, family emergency, or other reason. This guaranteed ride home will be provided through app-based ride-sharing services.
2. **Pre-tax Commuter Benefits:** This program allows employees to exclude transit or vanpool costs from their taxable income up to a maximum monthly amount (by federal). This is typically administered through the benefits program/payroll.

These strategies are specifically tailored to reduce the number of net new employee vehicle trips during peak hours.

¹⁵ 29% AM peak hour pass-by trips for Drive-in Banks from *Trip Generation Handbook, 3rd Edition: Table E.25 Pass-By and Non-Pass-By Trips Weekday, AM Peak Period, Land Use Code 912—Drive-in Bank*

¹⁶ 35% PM peak hour pass-by trips for Drive-in Banks from *Trip Generation Handbook, 3rd Edition: Table E.27 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period, Land Use Code 912—Drive-in Bank*

Additionally, the following investments are included in the project, to support the use of active transportation by both employees and customers:

3. **Outdoor Bike Racks:** The proposed project includes a dedicated bicycle storage area that can be used by both customers and employees.
4. **Pedestrian Improvements:** The proposed project includes new sidewalk fronting the site, as well as an accessible route from the sidewalk to the front entrance. These pedestrian improvements will ensure continuous sidewalk connectivity to the nearby bus stop on Harvard Drive, and destinations to the north, west, and south.

5.4. DISTRIBUTION

Proposed trip distribution patterns are shown in **Figure 4** and noted below, based on a review of traffic patterns and land uses in the area. These assumptions were confirmed by ODOT/City staff.

Pass-by trips will draw from Highway 214 via Evergreen Road, essentially serving as “diverted link trips.”

Figure 4: Proposed Trip Distribution



- 20% to/from I-5 (north of OR 214)
- 20% to/from I-5 (south of OR 214)
- 10% to/from OR 219 (west of I-5)
- 5% to/from Evergreen Rd (south of Harvard Dr)
- 10% to/from Hayes St (east of Evergreen Dr)
- 10% to/from Boones Ferry Rd (north of OR 214)
- 20% to/from OR 214 (east of Boones Ferry/Settlemier)
- 5% to/from Settlemier Avenue (south of OR 214)

5.5. TRIP ASSIGNMENT

Project pass-by trips are shown in **Figure A7** and **A8** in **Appendix A**. Note that all pass-by trips draw from OR 214, split equally between eastbound and westbound traffic. Eastbound pass-by trips are expected to make use of Lawson Avenue to Stacy Allison Way (inbound) and Stacy Allison Way to Evergreen Road (outbound). Westbound pass-by trips are expected to make use of Evergreen Road to Stacy Allison Way (inbound) and Stacy Allison Way to Evergreen Road (outbound).

Project new trips are shown in **Figure A9** and **A10** in **Appendix A**. All inbound trips coming from I-5 and OR 214 west of I-5 were assigned to Lawson Avenue to Stacy Allison Way (50% of inbound trips). All outbound trips to OR 214 (both east and west) were assigned to Stacy Allison Way to Evergreen Road (85% of outbound trips).

The combination of all background traffic, in-process trips, project pass-by trips, and project new trips are shown in **Figure A11** and **A12** in **Appendix A**.

5.6. NEW PM PEAK HOUR TRIPS BY INTERSECTION

The City of Woodburn has previously identified a number safety and capacity improvements on roadways and intersections within the influence area of this project. Should the proposed project be required to contribute to one or more of these projects, the following table was developed to assist in this process. The future year volumes draw on recently completed TIAs, which in some cases, analyzed 2034 or 2040 conditions:

Table 8: New PM Peak Hour Project Trips by Intersection

ID	Intersection	New PM Vehicle Trips	Horizon Year PM Entering Volume	Percentage
1	Stacy Allison Way & Harvard Dr	62	-	-
2	Evergreen Rd & Harvard Dr	3	-	-
3	Stacy Allison Way & Evergreen Rd	48	***1,767	2.7%
4	OR 214 & Evergreen Rd	42	*4,482	0.9%
5	OR 214 & I-5 NB	31	*4,831	0.6%
6	OR 214 & I-5 SB	19	*4,635	0.4%
7	OR 214 & Boones Ferry Rd/Settlemer Ave	22	*3,624	0.6%
8	Hayes St & Evergreen Rd	6	***1,820	0.3%
9	OR 214 & Country Club Rd/Oregon Way	22	**3,366	0.7%
10	OR 214/OR 211 & Pacific Hwy	13	*4,329	0.3%

*2040 Total Traffic Volumes (4:30 PM to 5:30 PM) – Project Basie TIA

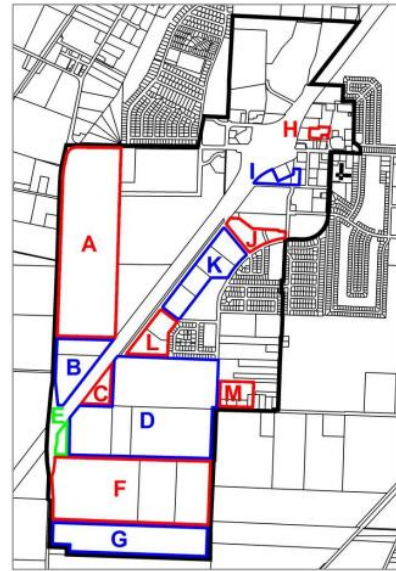
**Estimated from 2040 volumes arriving/departing the OR 214/Evergreen Rd intersection to/from the east

***2034 Total Traffic Volumes (PM Peak Hour) – Allison Way Apartments TIA

5.7. INTERCHANGE MANAGEMENT AREA

The proposed project is located within the “Interchange Management Area Overlay District” (Woodburn Development Ordinance 2.05.02), which was put in place to “to preserve the long-term capacity of the I-5/Highway 214 Interchange.” A trip budget of 2,500 peak hour vehicle trips was established for all vacant commercial and industrial parcels identified in the figure to the right. This overall budget was based on an assumption of approximately 11 peak hour trips per newly-developed industrial acre and 33 peak hour trips per newly-developed commercial acre.

The proposed Community Credit Union project falls within Subarea I, which was assigned 33 trips per acre for the 1.252-acre site (or 41 peak hour trips). The proposed project would exceed this budget by 21 peak hour vehicle trips without taking into account any reductions for use of alternative modes.



Based on a review of recently completed TIAs that fall within one of the IMA subareas, both Allison Way Apartments and Project Basie are not expected to make use of their full allocation of trips. While the Phased Spec Industrial Project is expected to exceed its trip allocation by 43 vehicle trips, there remains a surplus of 228 vehicle trips from the combination of these three projects. By exceeding the allocation by 21 vehicle trips, the proposed Community Credit Union would make use of approximately 9% of this excess, leaving a surplus of 207 vehicle trips from these four projects combined.

Table 9: Net Remaining IMA Trip Budget

Project	IMA Subarea(s)	Trip Allocation	Utilization (PM Peak)	Underused/Overused
Allison Way Apartments	L/K	495	258	+237
Project Basie	A/B	1,210	1,176	+34
Phased Spec	D	574	617	(43)
Community Credit Union	I	41	62	(21)
				+207

6.0 Operational Analysis

6.1. METHODOLOGY

Intersection operations were analyzed using Synchro 10 software, making use of the Transportation Research Board's (TRB) Highway Capacity Manual 6th Edition methodologies. ODOT's default Synchro parameters (including a saturation flow rate of 1,750 vehicles per hour per lane) were used, along with actual signal timing information obtain from ODOT. ODOT's Analysis Procedures Manual includes a method for converting results from Synchro's HCM 6 results into a critical intersection volume to capacity (v/c) ratio at signalized intersection, and this method was used.

6.2. PERFORMANCE MEASURES

The City of Woodburn's Transportation System Plan outlines the following mobility standards for City intersections:

- Signalized Intersections
 - LOS E
and
 - $v/c < 1.0$
- Unsignalized Intersections
 - $v/c < 0.90$ (critical movement)

ODOT, within the Oregon Highway Plan (OHP), recommends slightly modified performance measures for intersections on OR 214 (district highway):

- OR 214 & I-5 Ramps: $v/c < 0.85$
- OR 214 & Evergreen Rd: $v/c < 0.95$

Results that exceed any of these mobility targets will be flagged.

6.3. OPERATIONAL ANALYSIS

As shown in **Table 10**, no study area intersections are expected to exceed established mobility thresholds by 2024, taking into account background growth, in-process trips, and project trips.

Table 10: Operational Results

	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Stacy Allison Way & Harvard Dr						
2022 Existing	9	A	0.05	10	B	0.11
2024 Background + In-Process	9	A	0.06	10	B	0.12
2024 Background + In-Process + Build	12	B	0.06	27	D	0.25
Evergreen Rd & Harvard Dr						
2022 Existing	11	B	0.19	14	B	0.25
2024 Background + In-Process	15	C	0.26	21	C	0.39
2024 Background + In-Process + Build	15	C	0.26	21	C	0.39
Stacy Allison Way & Evergreen Rd						
2022 Existing	13	B	0.18	17	C	0.44
2024 Background + In-Process	16	C	0.29	28	D	0.63
2024 Background + In-Process + Build	17	C	0.31	37	E	0.75
OR 214 & Evergreen Rd						
2022 Existing	35	C	0.55	50	D	0.71
2024 Background + In-Process	53	D	0.69	73	E	0.83
2024 Background + In-Process + Build	53	D	0.70	72	E	0.85
OR 214 & I-5 NB						
2022 Existing	21	C	0.32	14	B	0.46
2024 Background + In-Process	28	C	0.48	17	B	0.53
2024 Background + In-Process + Build	29	C	0.48	17	B	0.54
OR 214 & I-5 SB						
2022 Existing	15	B	0.24	17	B	0.46
2024 Background + In-Process	16	B	0.35	20	B	0.55
2024 Background + In-Process + Build	16	B	0.35	20	B	0.55
OR 214 & Boones Ferry Rd/Settlemer Ave						
2022 Existing	32	C	0.72	45	D	0.83
2024 Background + In-Process	41	D	0.79	57	E	0.89
2024 Background + In-Process + Build	41	D	0.79	58	E	0.89

Although this analysis does not identify any deficiencies within the timeframe analyzed for this project, other TIAs have identified capacity constraints in 2025 and beyond, as noted below:

Stacy Allison Way & Evergreen Rd

This intersection is expected to exceed mobility thresholds for an unsignalized intersection sometime between 2025 and 2034, as identified by both the Phased Spec and Allison Way Apartments TIAs. Restriping, construction of a roundabout, or the additional of a traffic signal may need to be considered in the near future to address this capacity constraint.

OR 214 & Evergreen Rd

This intersection is expected reach LOS F by 2040, as identified in the Project Basie TIA. Improvements at this intersection would likely be completed in coordination with signal timing/corridor improvements with adjacent intersections (I-5 ramps and Oregon Way/Country Club Road).

OR 214 & Boones Ferry Rd/Settlemier Ave

This intersection is expected to exceed mobility thresholds by 2040, as identified in the Project Basie TIA. Corridor improvements will likely be necessary to address this capacity constraint.

OR 214 & I-5 Ramps

City of Woodburn/Otak staff noted that a TSP signal timing project has been proposed for these intersections to alleviate queuing and congestion at the interchange.

Additionally, although not specifically analyzed as part of this project, the following intersections would carry a modest amount of site traffic that will likely need improvements in the near future:

- OR 214 & Highway 99E: Mitigation needed to address current over-capacity conditions during peak hours.
- OR 214 & Oregon Way/Country Club Road: TSP Project R11 to “investigate corridor signal timing and coordination adjustments in coordination with ODOT.”
- Evergreen Rd & Hayes Street: Likely to exceed mobility targets in the near future, and mitigation or improvements will likely be necessary.

6.4. QUEUING ANALYSIS

An intersection queuing analysis was completed using SimTraffic (based on ODOT’s templates). 95th percentile queue lengths reported for each intersection with a critical v/c ratio of 0.70 by 2024, as shown in **Table 11**. All queue lengths were rounded to the nearest 25 feet (approximately one vehicle in queue), and reported along with the full width storage available in each turn lane provided.

Eastbound queue lengths are expected to block the upstream intersection at the intersection of Stacy Allison Way & Evergreen Road. As noted in the operational analysis, improvements are likely warranted at this intersection by 2025 due to anticipated capacity constraints.

Eastbound and westbound left turn lane queues are expected to exceed storage available during the PM peak hour at the intersection of OR 214 & Evergreen Road. This intersection will likely be included in a corridor signal timing improvement process in the near future.

The most significant queues are expected at the intersection of OR 214 & Boones Ferry Rd/Settlemier Ave, with eastbound, westbound, and northbound queue lengths likely to exceed 1,000 feet (40 vehicles) during

the PM peak hour in the near future. Corridor improvements will likely be needed to address anticipated capacity constraints at this intersection.

Table 11: 95th Percentile Queue Lengths

Intersection	Movement	Storage	2024 AM Full Build	2024 PM Full Build
Stacy Allison Way & Evergreen Rd	EBL	100	100	150
	EBR	-	50	475
	NBL	75	25	50
	NBT	-	25	25
	SBTR	-	25	25
OR 214 & Evergreen Rd	EBL	175	150	300
	EBT	-	325	450
	EBR	250	150	375
	WBL	375	200	550
	WBTR	-	425	650
	NBL	325	325	375
	NBT	-	425	450
	NBR	300	200	275
	SBL	75	50	125
	SBT	-	200	275
	SBR	25	50	75
OR 214 & Boones Ferry Rd/ Settlemer Ave	EBL	250	275	550
	EBT	-	575	>1,000
	EBR	200	325	400
	WBL	225	125	500
	WBT	-	425	>1,000
	WBR	150	150	250
	NBL	150	350	350
	NBT	-	725	>1,000
	NBR	150	100	150
	SBL	175	75	300
	SBT	-	225	500
SBR	-	100	200	

7.0 Findings and Recommendations

7.1. KEY FINDINGS

- The proposed Woodburn Community Credit Union project is expected to attract a total of 42 AM peak hour trips and 81 PM peak hour trips, including 37 net new AM peak hour trips and 62 net new PM peak hour trips (after accounting for pass-by trips).
- Although the number of net new PM peak hour trips (62 trips) exceeds the number of peak hour trips allocated to the site within the Interchange Management Area Overlay District (41 trips), nearby recently proposed projects are expected to generate fewer trips than allocated, allowing for the accommodation of these 21 excess peak hour trips within the system.
- Several nearby intersections have elevated crash levels (based on 2016-20 data), and mitigation may be needed. These intersections include:
 - Stacy Allison Way & Evergreen Rd
 - OR 214 & Evergreen Rd
 - OR 214 & I-5 NB
 - OR 214 & I-5 SB
 - OR 214 & Country Club Rd/Oregon Way
- By 2024, including background growth, in-process trips, project pass-by trips, and new project trips, all intersections analyzed are expected to operate within the mobility targets established by ODOT and the City of Woodburn. However, in addition to the intersections identified above for safety improvements, the following intersections will likely require operational/capacity improvements in the near to long-term based on previously completed analyses in the area:
 - OR 214 & Boones Ferry Rd/Settlemer Ave
 - OR 214 & Highway 99E
 - Evergreen Rd & Hayes Street

7.2. RECOMMENDATIONS

- Ensure landscaping does not restrict sight lines for vehicles departing the site. AASHTO recommends 280 feet of clear sight distance for vehicles entering a 25 mph roadway from a stop.
- Implement the following Transportation Demand Management programs/improvements to encourage the use of alternative modes of transportation (transit, biking, walking, carpool, & vanpool):
 - Guaranteed Ride Home Program
 - Pre-tax Commuter Benefits
 - Outdoor Bike Racks
 - Pedestrian Pathways
- Work with the City to determine if a proportionate share contribution will be required for any of the following nearby intersections where safety and/or capacity improvements have been proposed:

■ Stacy Allison Way & Evergreen Rd	48 new PM vehicle trips
■ OR 214 & Evergreen Rd	42 new PM vehicles trips
■ OR 214 & I-5 NB	31 new PM vehicle trips
■ OR 214 & Country Club Rd/Oregon Way	22 new PM vehicle trips
■ OR 214 & Boones Ferry Rd/Settlemer Ave	22 new PM vehicle trips
■ OR 214 & I-5 SB	19 new PM vehicle trips
■ OR 214 & Highway 99E	13 new PM vehicle trips
■ Evergreen Rd & Hayes Street	6 new PM vehicle trips

Appendix A: Traffic Volume Figures

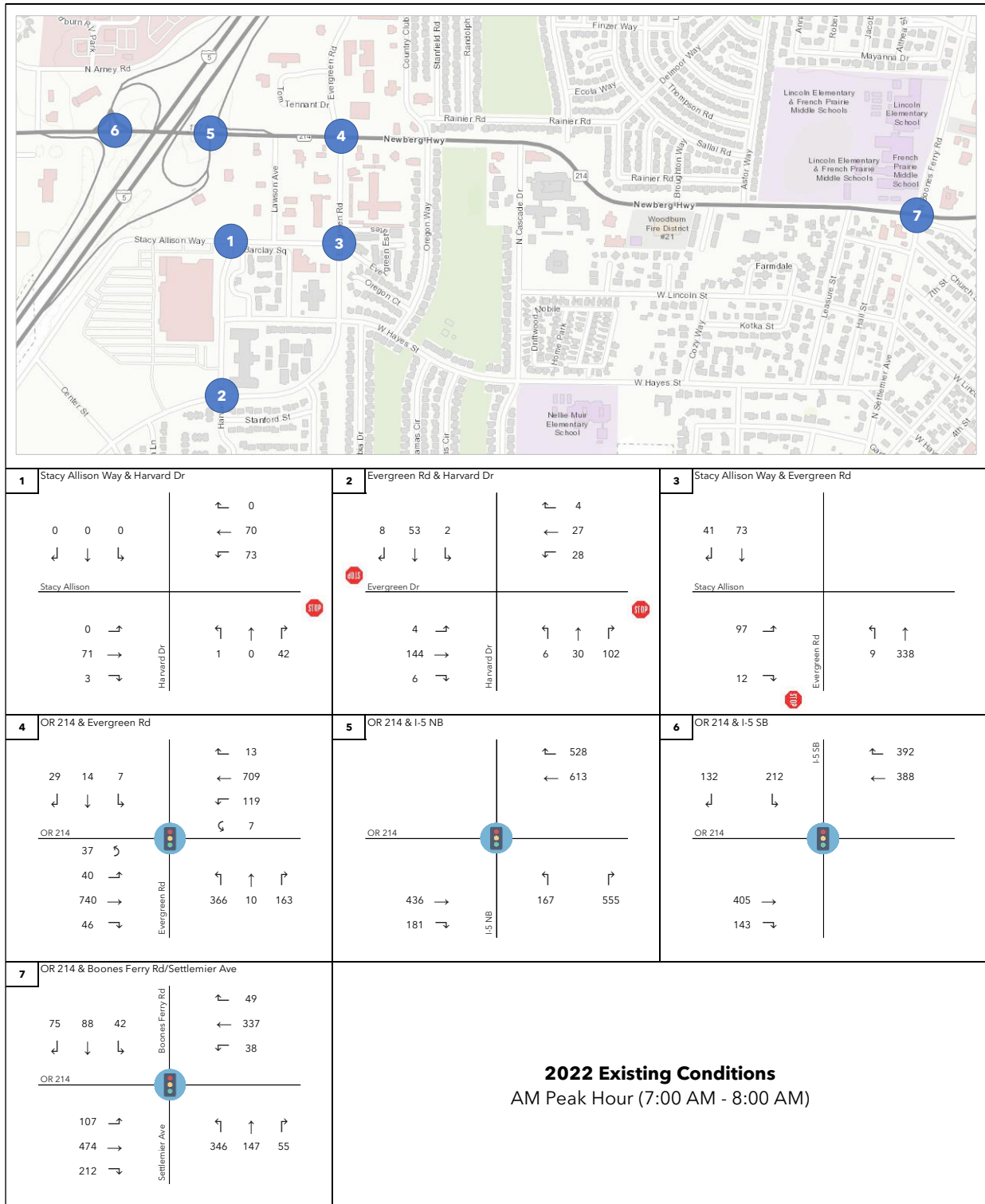


Figure A1: 2022 Existing Conditions – AM Peak Hour (7:00 AM – 8:00 AM)

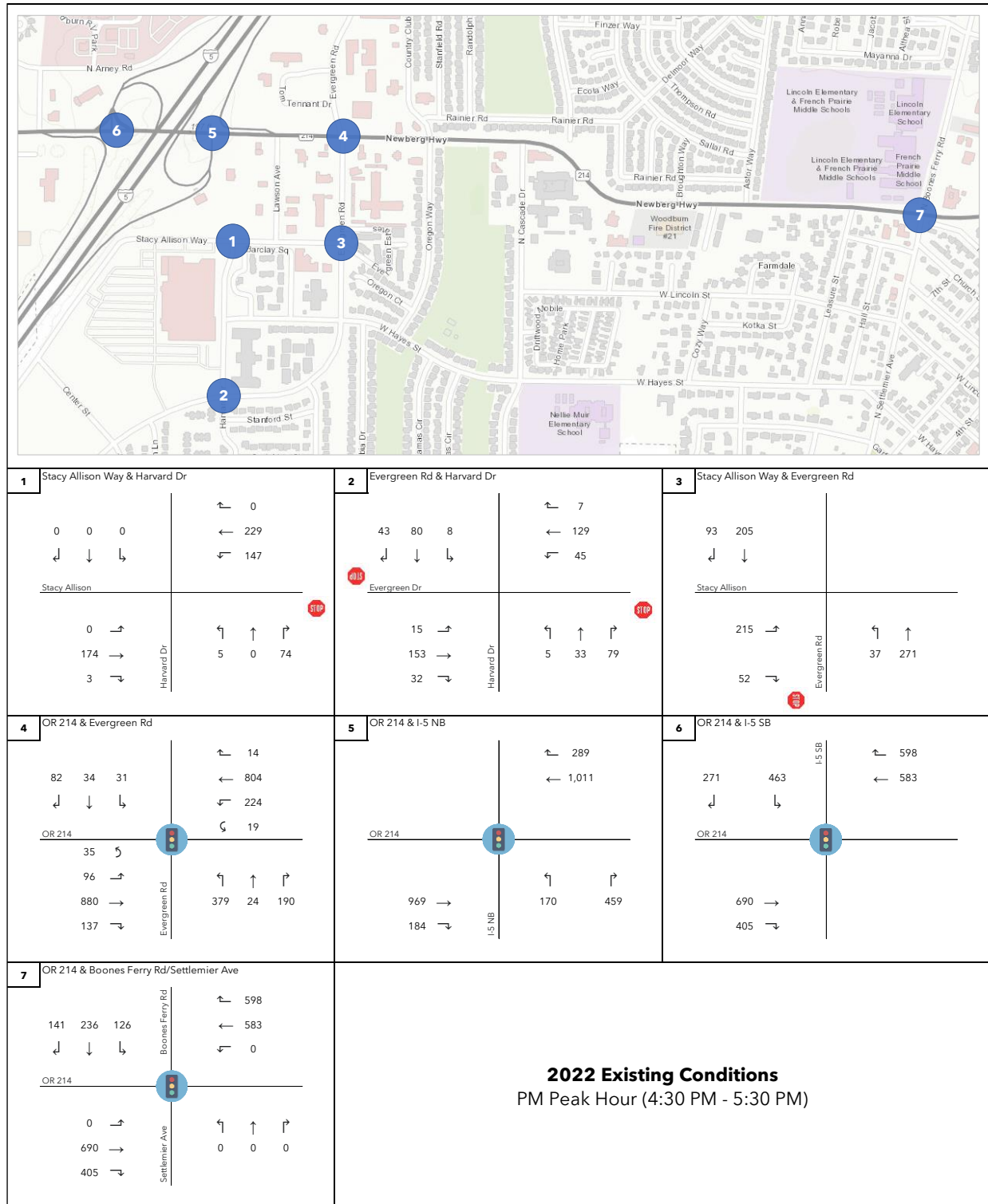


Figure A2: 2022 Existing Conditions – PM Peak Hour (4:30 PM – 5:30 PM)

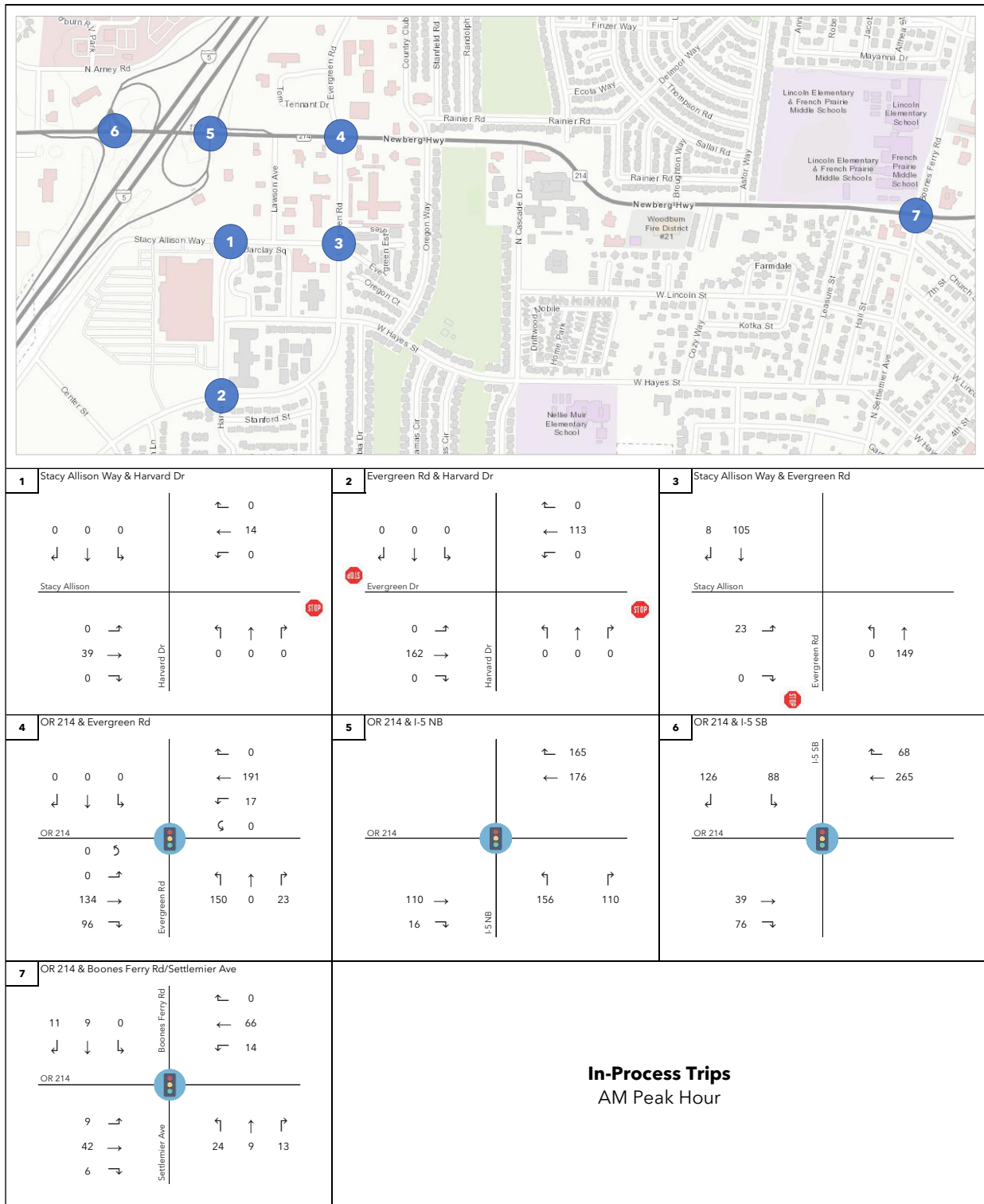


Figure A3: In-Process Trips – AM Peak Hour

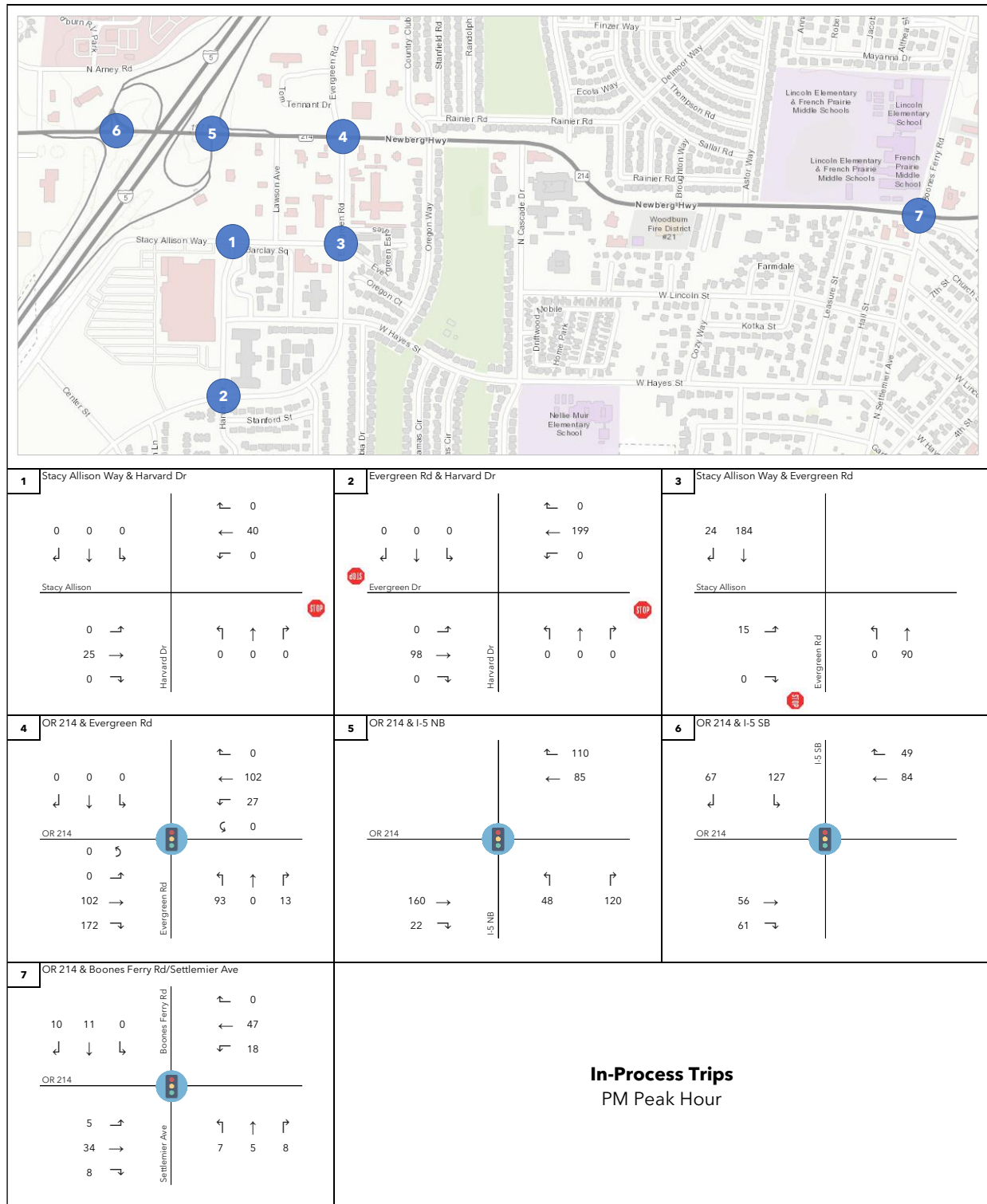


Figure A4: In-Process Trips - PM Peak Hour

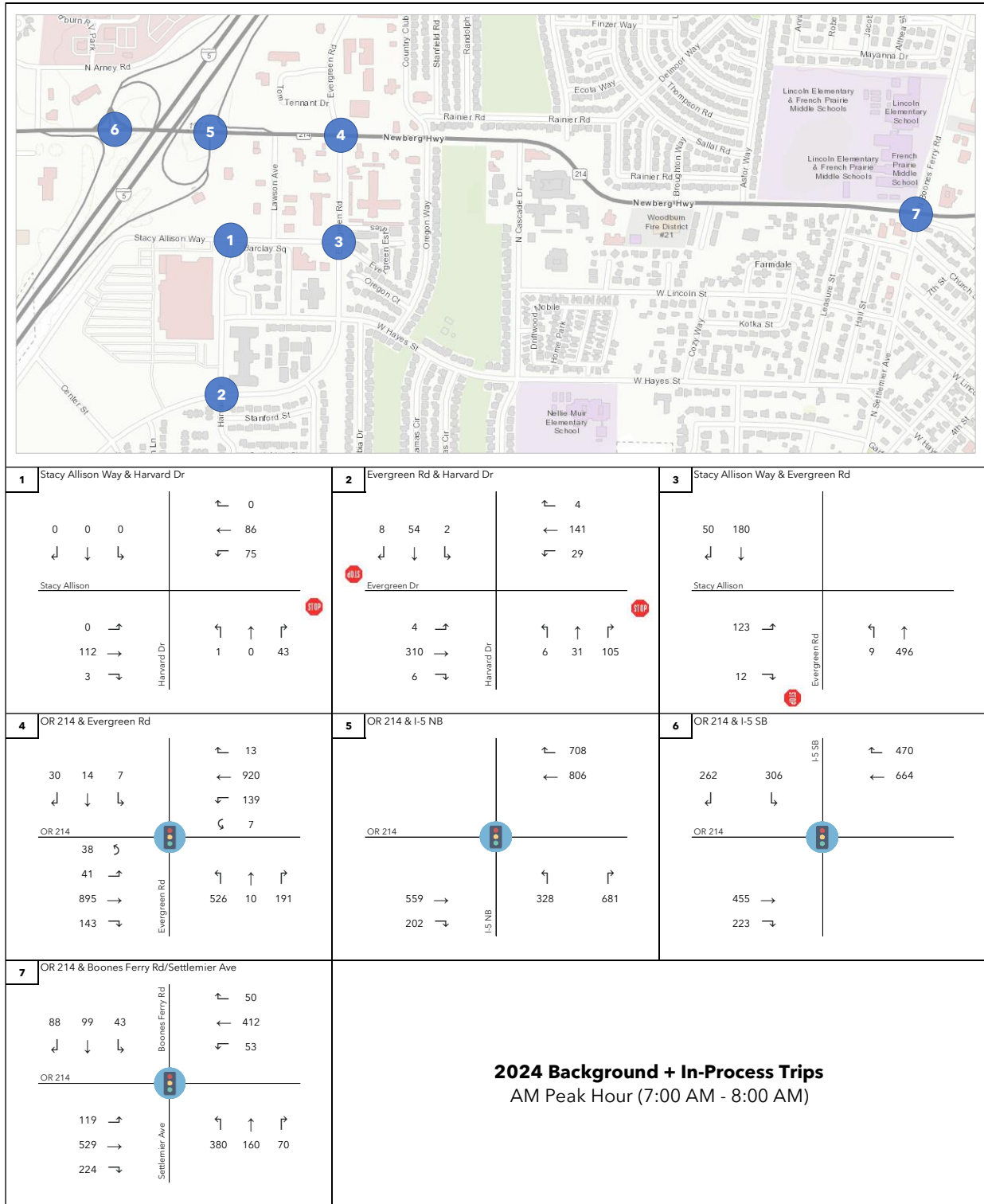


Figure A5: 2024 Background + In-Process Trips – AM Peak Hour (7:00 AM – 8:00 AM)

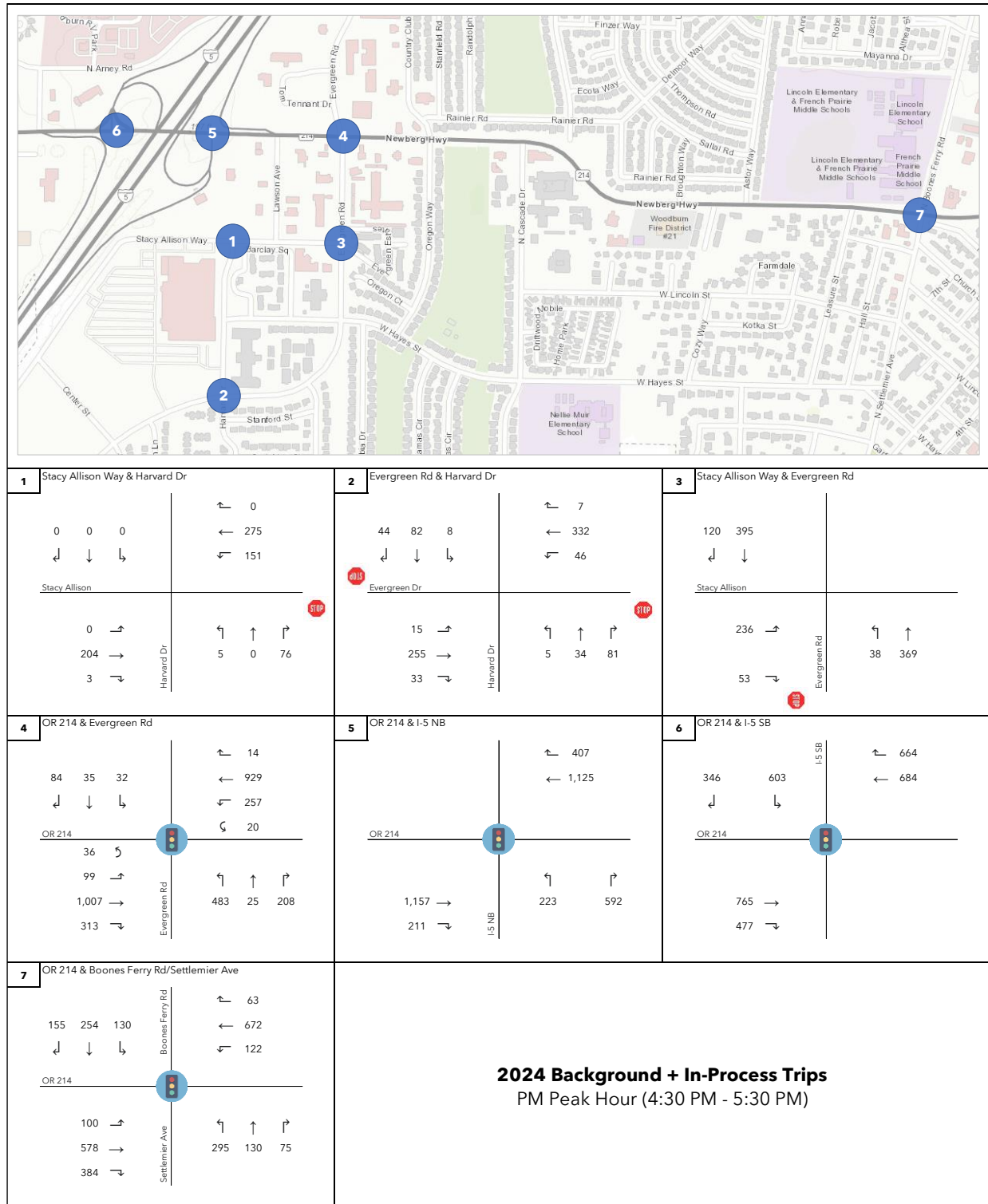


Figure A6: 2024 Background + In-Process Trips – PM Peak Hour (4:30 PM – 5:30 PM)

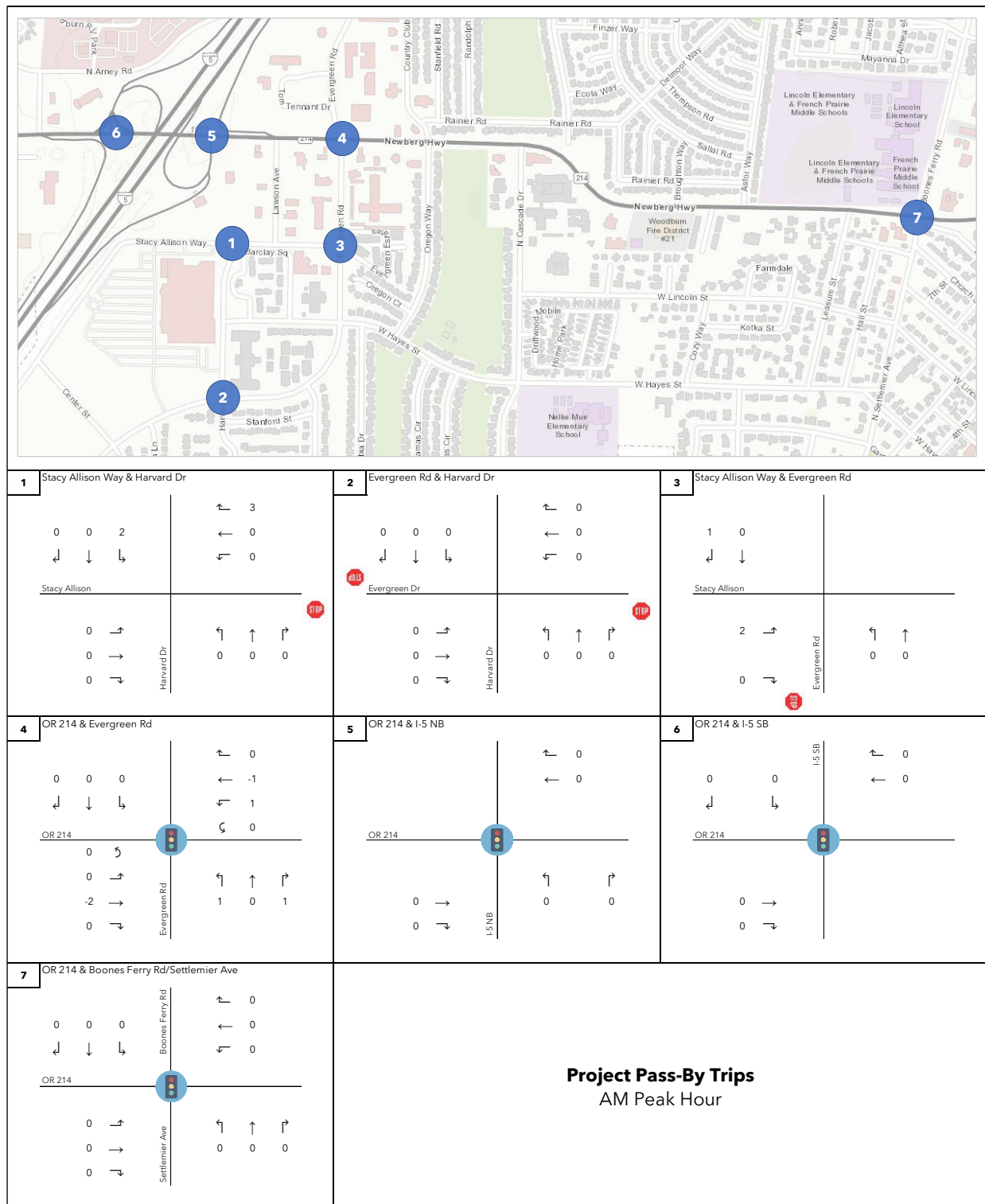


Figure A7: Project Pass-By Trips – AM Peak Hour

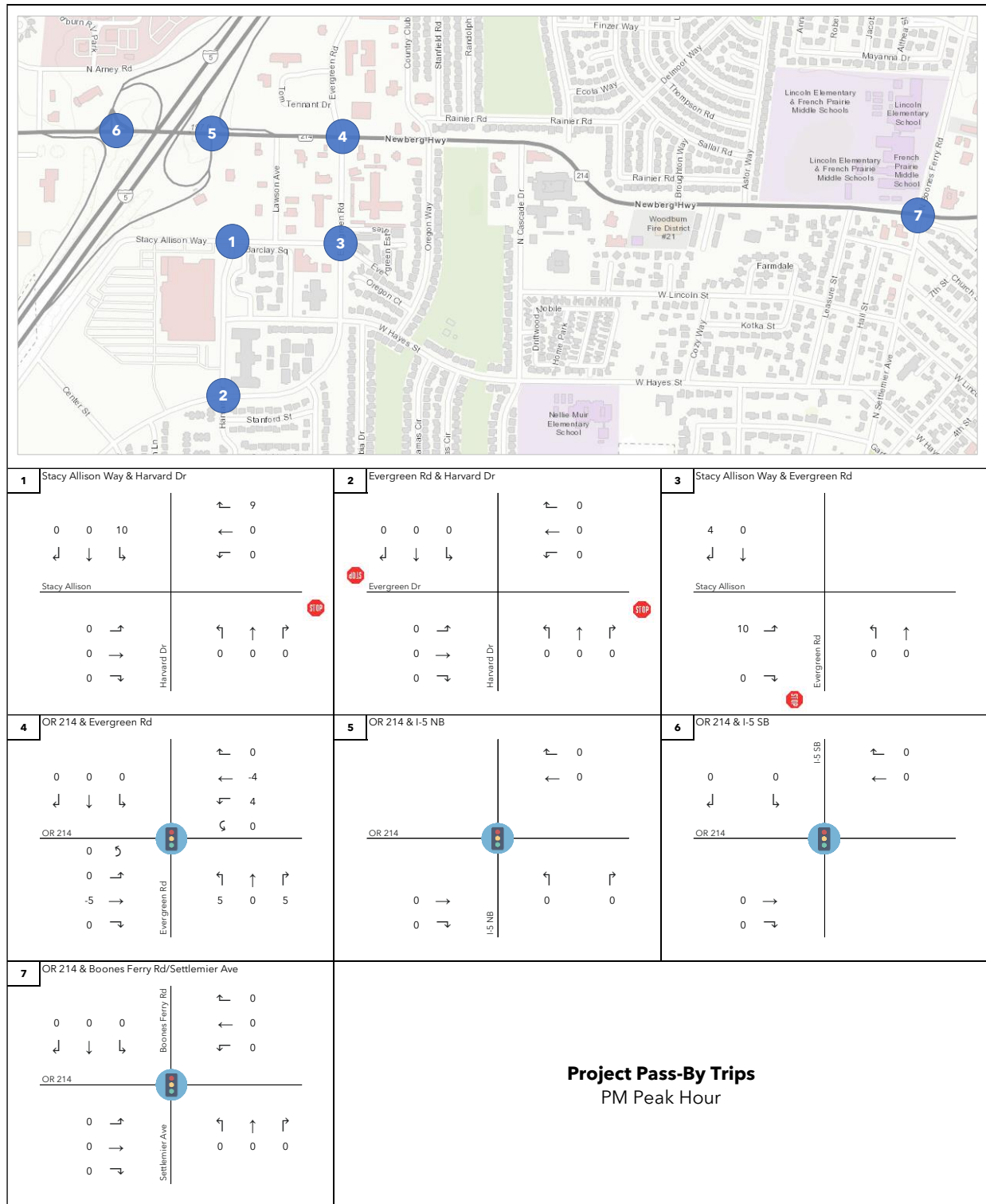


Figure A8: Project Pass-By Trips – PM Peak Hour

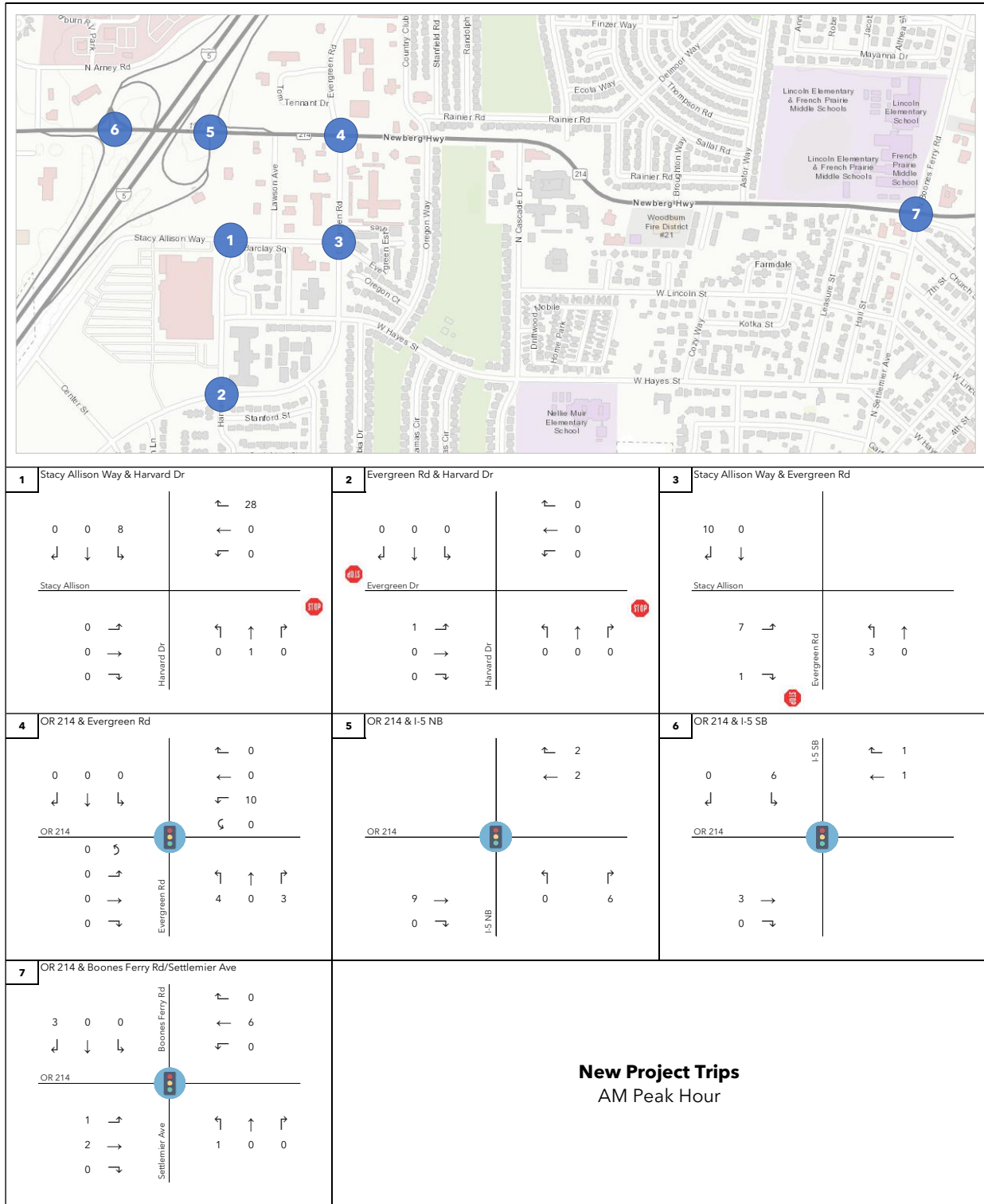


Figure A9: New Project Trips – AM Peak Hour

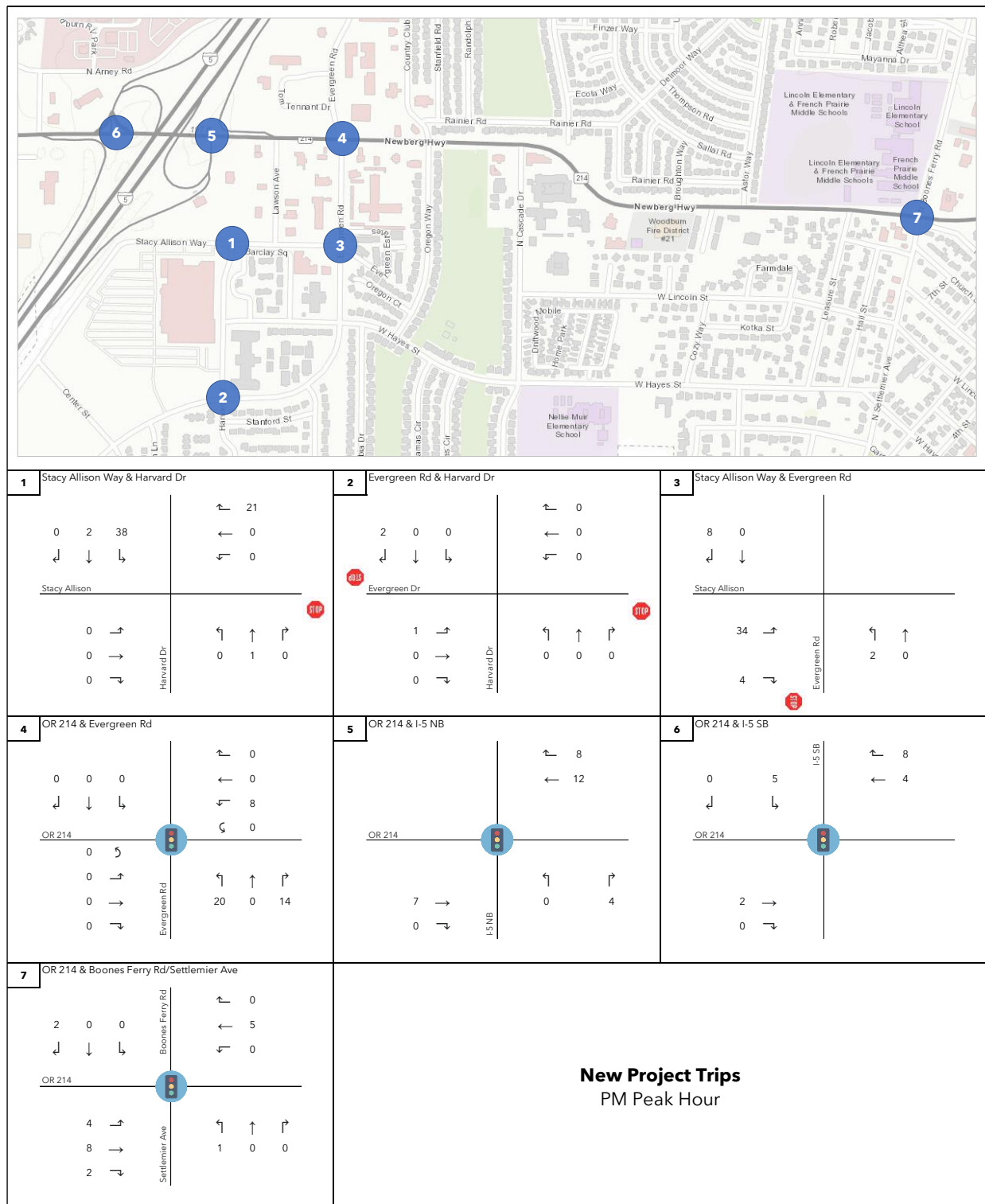


Figure A10: New Project Trips – PM Peak Hour

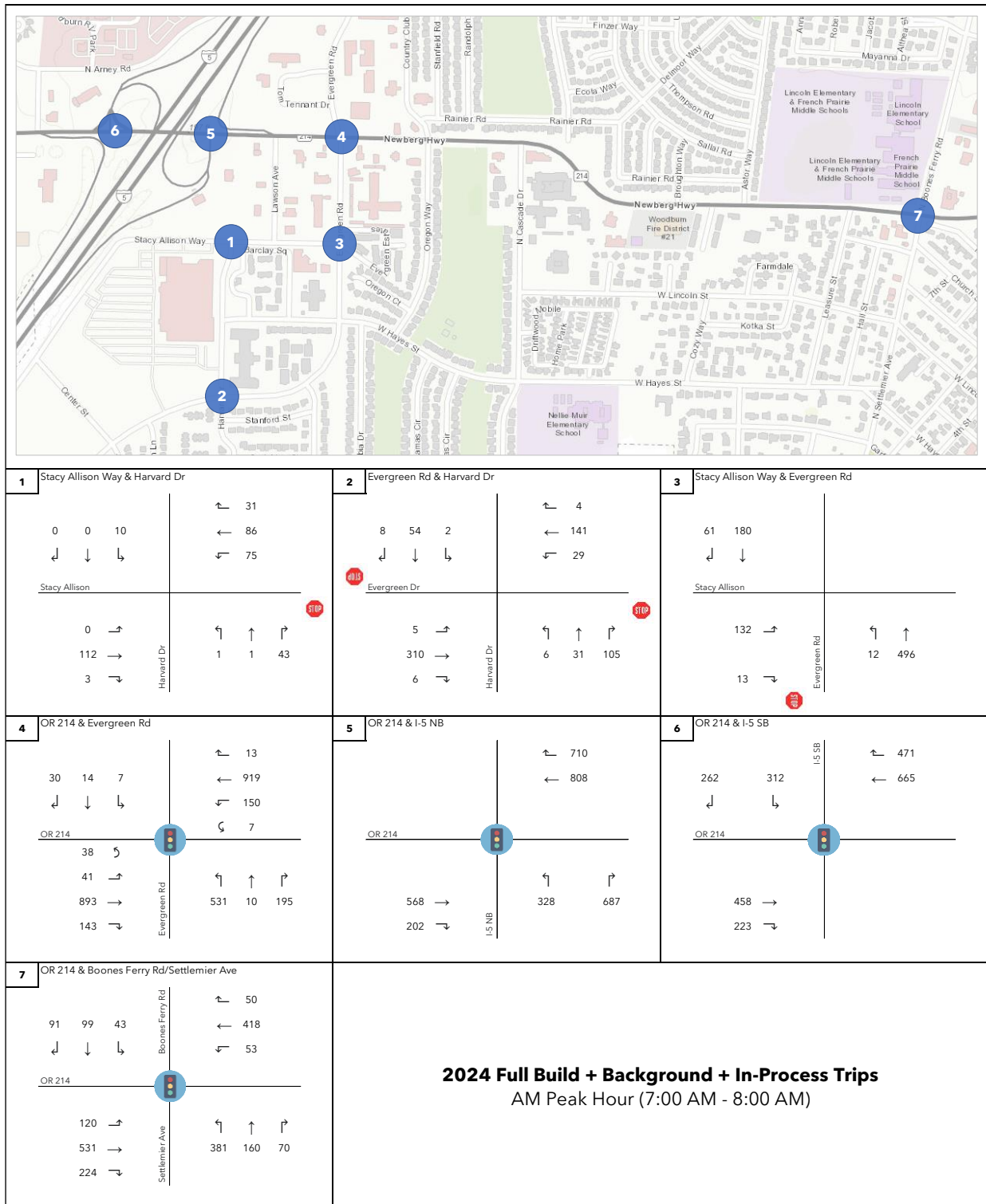


Figure A11: 2024 Full Build + Background + In-Process Trips – AM Peak Hour (7:00 AM – 8:00 AM)

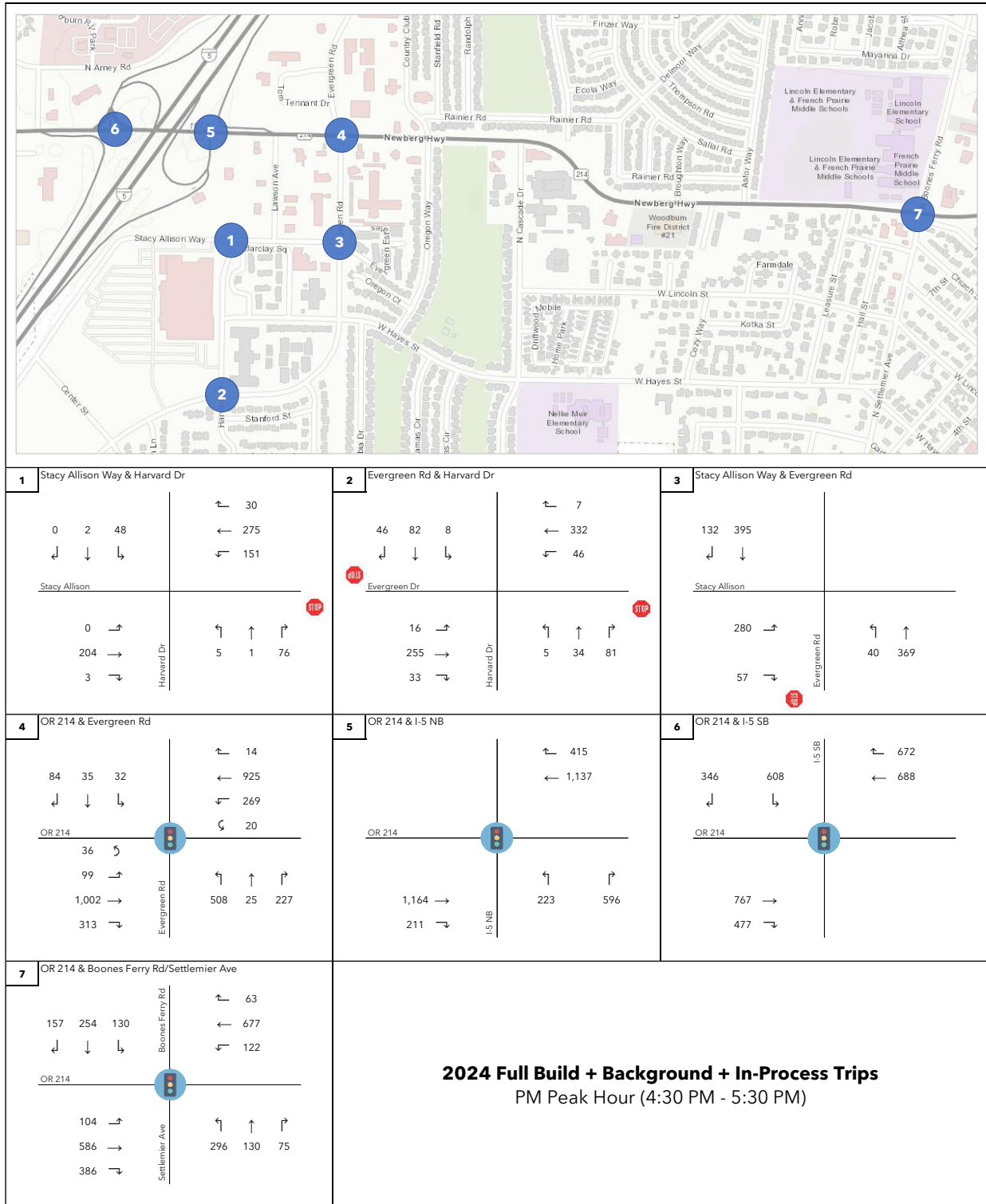


Figure A12: 2024 Full Build + Background + In-Process Trips – PM Peak Hour (4:30 PM – 5:30 PM)

Appendix B: TIA Scoping Memo



MEMORANDUM

To: Dago Garcia, City of Woodburn
Casey Knecht, ODOT

From: William Reynolds, PE (OR), AICP, PTP
RBT Consultants

Date: April 8, 2022

Subject: Unitus Community Credit Union – Traffic Impact Analysis Scoping Memo

Introduction

The following scoping memo summarizes the proposed Traffic Impact Analysis (TIA) methodology and assumptions for the proposed Unitus Community Credit Union in Woodburn, OR. The proposed project, located at 2951 Stacy Allison Way (Tax Lot 052W12C000604), consists of a drive-through bank with two drive-through lanes and supporting office uses. The proposed building size is 16,500 ft² over 3 floors (5,500 ft² per floor). The proposed parking lot will include 64 spaces (3.88 stalls per 1,000 ft²).

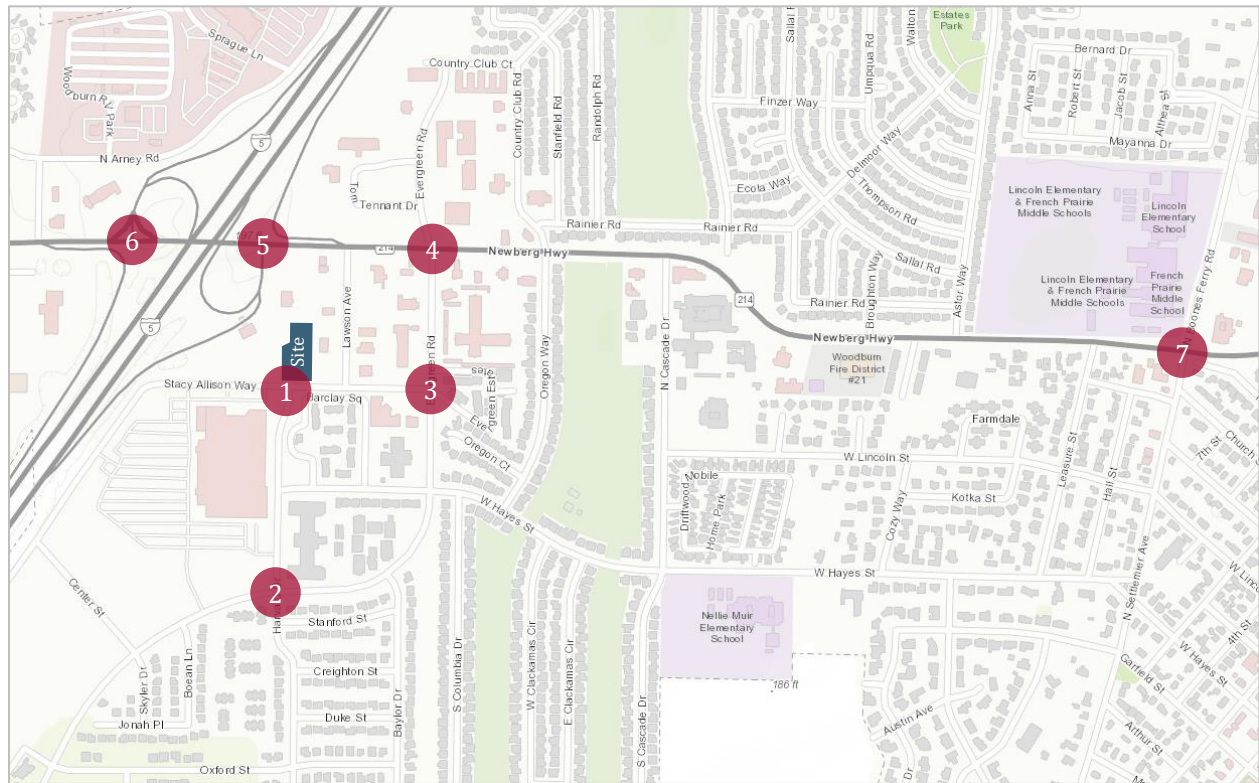
The 1.252-acre property is currently undeveloped and is within the Commercial General (CG) zoning district and the Interchange Management Area (IMA) overlay district. More specifically, the property is within “Subarea I” of the IMA overlay district, which is subject to a maximum of 33 trips per developed commercial acre. The intent of the overlay district is to preserve the capacity of the I-5/Highway 214 Interchange, and a vehicle trip budget of 2,500 peak hour trips (from 29 vacant commercial and industrial parcels) was established to maintain long-term capacity.

Study Area

Per information provided at the Pre-Application meeting for the project (held on Wednesday, March 2, 2022), the following study intersections will be analyzed within the TIA:

1. Stacy Allison Way & Harvard Drive (Proposed site access)
2. Evergreen Road & Harvard Drive
3. Evergreen Road & Stacy Allison Way
4. Evergreen Road & Highway 214
5. Highway 214 & I-5 Northbound Ramps
6. Highway 214 & I-5 Southbound Ramps
7. Highway 214 & Boones Ferry Road/Settlemer Ave

Figure 1: TIA Study Area Intersections



The functional classification, ownership, and mobility standards (volume to capacity ratio) are provided in **Table 1**, based on Woodburn’s Transportation System Plan Update (September 2019) and the Oregon Highway Plan, Table 6.

Table 1: Functional Classification / Mobility Standards

	Jurisdiction	Functional Classification	v/c Standard ¹
Stacy Allison Way	City	Service Collector	1.0
Evergreen Road	City	Minor Arterial	1.0
Harvard Drive	City	Access Street	1.0
OR 214	ODOT	Major Arterial / Truck Route	0.95
I-5	ODOT	Freeway / Freight Route	0.85
Boones Ferry Road	City	Minor Arterial	1.0

¹ Assuming all are within a Special Transportation Area, except for I-5.

Analysis Scenarios

The following analysis scenarios are proposed, assuming full build by 2024:

1. 2022 Existing Conditions (AM Peak Hour)
2. 2022 Existing Conditions (PM Peak Hour)
3. 2024 Background Traffic (AM Peak Hour)
4. 2024 Background Traffic (PM Peak Hour)
5. 2024 Full Build + Background (AM Peak Hour)
6. 2024 Full Build + Background (PM Peak Hour)

For each scenario, the volume to capacity ratio will be analyzed for each study area intersection using the 2000 Highway Capacity Manual methodology for signalized intersections and the Highway Capacity Manual 6th Edition for unsignalized intersections. Additionally, a simulation-based queue length analysis will be provided for any intersection that exceeds a v/c ratio of 0.70.

Existing Traffic Volumes

Data Collection

AM and PM peak hour intersection turning movement counts will be collected at all seven study area intersections between the hours of 7 AM and 9 AM and 4 PM and 6 PM, respectively on a midweek weekday.

Seasonal Adjustments

Depending on the month in which the data is collected (likely April or May), seasonal adjustments will be applied in order to establish peak season traffic volumes. **Table 2** presents the proposed seasonal adjustment factors that will be used, depending on the data collection month. These values are derived from the nearest ATR (24-001 on OR99E), which is classified as consistent with a “Commuter” profile.

Table 2: Proposed Seasonal Adjustment Factors

	Peak Month	April	May	June
2019	*117%	102%	104%	117%
2018	*109%	105%	106%	109%
2017	**117%	103%	104%	109%
2016	*111%	106%	107%	111%
2015	*113%	103%	106%	113%
Average:	114%	104%	105%	111%
Seasonal Adjustment Factor:		1.10	1.09	1.03

*Peak Month: June

**Peak Month: August

Note: Strike through/grey values excluded from average (highest and lowest values)

Future Traffic Volumes

Growth Rate Adjustments

Forecasted traffic volumes were obtained from ODOT for Highway 214 (ODOT Highway #140) and shown in **Table 3**. Based on anticipated traffic growth through 2040, a linear growth rate of 0.3% will be applied for two years to existing traffic volumes to estimate 2024 conditions.

Table 3: Proposed Background Traffic Growth Rate

Site ID	Description	2019 Volume	2040 Volume	Linear Growth Rate
#3232	East of Pacific Highway (I-5)*	26,300	28,100	0.3%
#3233	West of Settlemier Avenue*	19,600	20,800	0.3%
	*ODOT Highway #140			0.3%

In-Process Trips

In addition to general background growth, traffic associated with any nearby in-process development projects will be added to the analysis if requested by ODOT or the City.

Project Trip Generation

The proposed land uses most closely correspond to the following two land use categories within ITE's Trip Generation Manual (10th Edition):

- First Floor: Drive-In Bank (Land Use Code 912)
- 2nd/3rd Floor: General Office Building (Land Use Code 710)

The following trip rates correspond to these land use categories:

- Daily
 - Drive-In Bank: **124.76** trips per drive-in lane (50% entering / 50% exiting)
 - General Office: **9.74** trips per 1,000 ft² (50% entering / 50% exiting)
- AM Peak Hour
 - Drive-In Bank: **8.83** trips per drive-in lane (61% entering / 39% Exiting)
 - General Office: **1.16** trips per 1,000 ft² (86% entering / 14% exiting)
- PM Peak Hour
 - Drive-In Bank: **27.15** trips per drive-in lane (49% entering / 51% Exiting)
 - General Office: **1.15** trips per 1,000 ft² (16% entering / 84% exiting)

Table 4 and **Table 5** show the corresponding peak hour trips for the AM and PM peak hours, respectively. The values will be added to Background Traffic for the Full Build scenarios.

Table 4: AM Peak Hour Trips

Land Use	ITE Code	Units	Daily Trips	AM Peak Hour		Pass-By ²		Net New	
				In	Out	In	Out	In	Out
Drive-in Bank	912	2 Drive-in Lanes	250	11	7	3	3	8	4
General Office	710	11,000 ft ²	107	11	2	0	0	11	2
Total Trips			357	22	9	3	3	19	6
				31 trips		6 trips		25 trips	

Table 5: PM Peak Hour Trips

Land Use	ITE Code	Units	Daily Trips	PM Peak Hour		Pass-By ³		Net New	
				In	Out	In	Out	In	Out
Drive-in Bank	912	2 Drive-in Lanes	250	26	28	9	9	17	19
General Office	710	11,000 ft ²	107	2	11	0	0	2	11
Total Trips			357	28	39	9	9	19	30
				67 trips		18 trips		49 trips	

After reductions for pass-by trips (29% AM / 35% PM for drive-in banks), the following net new peak hour trips per acre⁴ are expected:

- AM Peak Hour: 20.0 net new trips per acre
- PM Peak Hour: 39.1 net new trips per acre

² 29% AM peak hour pass-by trips for Drive-in Banks from *Trip Generation Handbook, 3rd Edition: Table E.25 Pass-By and Non-Pass-By Trips Weekday, AM Peak Period, Land Use Code 912—Drive-in Bank*

³ 35% PM peak hour pass-by trips for Drive-in Banks from *Trip Generation Handbook, 3rd Edition: Table E.27 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period, Land Use Code 912—Drive-in Bank*

⁴ Site size: 1.252 acres

Trip Distribution

Proposed trip distribution patterns are shown in **Figure 2**, based on a review of traffic patterns and land uses in the area. These may be refined based on input from the City and ODOT.

Pass-by trips will draw from Highway 214 via Evergreen Road, essentially serving as “diverted link trips.”

Figure 2: Proposed Trip Distribution



Next Steps

To finalize the TIA methodology prior to data collection, a meeting (or email correspondence) with the City and ODOT staff is recommended in order to:

1. Confirm or refine the trip generation assumptions and all other methodology assumptions.
2. Identify any in-process projects for inclusion within the future year scenarios.
3. Review the ledger of cumulative peak hour trips within the IMA trip budget to confirm that 39.1 net new PM trips per acre can be accommodated from this site (8 PM peak hour vehicle trips over the base allocation by acreage).
4. Confirm or refine the trip distribution assumptions.

Closing

Please feel free to reach out to me to discuss the contents of this Memo.

Sincerely,

William Reynolds, PE (OR), AICP, PTP
RBT Consultants

Appendix C: ODOT & City Scoping Memo Notes

From: [KNECHT Casey](#)
To: dago.garcia@ci.woodburn.or.us; [William Reynolds](#)
Cc: Dan.Handel@ci.woodburn.or.us; [FERBER Arielle](#)
Subject: RE: Woodburn Credit Union - TIA Scoping Memo
Date: Thursday, April 21, 2022 8:52:59 AM
Attachments: [image001.png](#)

Dago and William,

Here are ODOT's comments on the TIA scoping memo for the proposed Woodburn Credit Union:

- Per the City of Woodburn's TSP, mobility standards for City intersections includes LOS E and $v/c < 1.0$ for signalized intersections and $v/c < 0.90$ on the critical movement for unsignalized intersections
- Recommend HCM 6 methodology be used for both signalized and unsignalized intersection analysis. See ODOT Analysis Procedures Manual Chapter 12 Example 13-3 for guidance on calculating critical intersection v/c ratio
- Recommend calculating trip generation using the most recent 11th Edition of ITE's Trip Generation Manual. In addition, pass-by trips should be split the same as new trips. Therefore, the AM peak hour would have five pass-by trips (three entering, two exiting) and the PM peak hour would have 19 pass-by trips (nine entering, ten exiting).
- In process trips should be applied to the appropriate study area intersections. The developer should coordinate with the City to ensure that all approved developments with overlapping study area intersections be incorporated, including but not limited to Project Basie and Allison Way Apartments.
- As noted in their memo, the proposed development is projected to generate more new trips than the parcel's allotment. The developer should coordinate with the City regarding the potential to use trips remaining from other parcels. If insufficient extra trips are available, the development should consider reducing land use intensity to meet the parcel trip allotment.

Feel free to contact Arielle or me with any questions.

Casey Knecht, P.E.

Development Review Coordinator | ODOT Region 2

503-986-5170 | casey.knecht@odot.oregon.gov

From: William Reynolds <william.reynolds@rbtconsultants.com>
Sent: Friday, April 8, 2022 4:49 PM
To: dago.garcia@ci.woodburn.or.us; KNECHT Casey <Casey.KNECHT@odot.oregon.gov>
Cc: Dan.Handel@ci.woodburn.or.us
Subject: Woodburn Credit Union - TIA Scoping Memo


This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Dago and Casey,

Attached is a draft scoping memo for the required TIA for the Community Credit Union project at



Memorandum

To: Dan Handel, Chris Kerr, Dago Garcia
From: Chuck Green, PE 
Copies: File
Date: May 16, 2022
Subject: Woodburn/Unitus Community Credit Union Traffic Impact Analysis Scoping Review
Otak Project #: 40141

Development Review Reference: PRE 22-05

This memo serves as my review of the April 8, 2022 memorandum from William Reynolds, PE (OR), AICP, PTP RBT Consultants labeled "Unitus Community Credit Union – Traffic Impact Analysis Scoping Memo".

Included are my findings and recommendations as far as the TIA scoping.

The TIA scoping memo was reviewed with input from the following documents:

- Oregon Department of Transportation (ODOT) Analysis Procedures Manual (APM), Version 2 as Revised, November 2020 with new Appendix 3E, "Traffic Volume Development During Disruptive Events" including the effects of the COVID-19 Pandemic
- City of Woodburn's Comprehensive Plan (September 2019)
- City of Woodburn's Transportation System Plan (September 2019)
- City of Woodburn's Transit Plan Update (November 2010)
- Woodburn Development Ordinance (WDO), as revised in April 2020, including Section 2.05.02 Interchange Management Area Overlay District, and Section 3.04.05 Traffic Impact Analysis.
- Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition (September 2021).
- Recent development traffic impact analyses in the site vicinity including Allison Way Apartments and Project Basie.

Site Characteristics

The site is located in "Subarea I" of the IMA overlay district, which is subject to a maximum of 33 (PM) peak hour trips for a development within the one acre parcel known as Tax Lot 052W12C000604. Based on the estimated trip generation of the proposal, the development will generate net new PM peak hour trips in exceedance of this 33 PM peak hour cap. The Applicant should coordinate with the City regarding the potential to use trips remaining from the other parcel in IMA Subarea I or, if that is not possible, considerations to reduce the number of PM peak hour trips to meet the trip budget.

ODOT Comments

ODOT Region 2 traffic staff (Casey Knecht, PE) provided earlier comments for the Pre-Application conference. These comments are incorporated into this memo.

Trip Generation

The TIA scoping memo proposed using the ITE 10th Edition Trip Generation Manual. The 11th Edition should be used instead. ITE recommends using fitted curves for trip rates when 20 or more case studies were used to develop the curves. Both of these uses have 20 or more case studies, so both should use the fitted curve equation rather than average rates. The pass-by trips should be split the same as new trips with the same trip rate basis instead of “per acre” estimates. Using the ITE 11th Edition fitted curve rates yields the following trip generation estimates for all trips:

- Drive-in bank: 271 weekday trips, 17 AM peak hour trips (10 in, 7 out), 54 PM peak trips (26 in, 28 out)
- Office space: 170 weekday trips, 25 AM peak trips (22 in, 3 out), 27 PM peak trips (5 in, 22 out).

Trip Distribution

Trip distribution rates as shown in Figure 2 are acceptable. In process trips should be applied to the appropriate study area intersections. Deductions for pass-by trips, if applicable, should also be shown.

Traffic Operations

The level-of-service/ mobility thresholds shown in Table 1 need to be revised to be consistent with City standards. Per the City of Woodburn's Transportation System Plan, mobility standards for City intersections are:

- LOS E and $v/c < 1.0$ for signalized intersections and
- $v/c < 0.90$ on the critical movement for unsignalized intersections

ODOT recommends HCM 6th Edition methodology be used for both signalized and unsignalized intersection analysis. See ODOT Analysis Procedures Manual Chapter 12 Example 13-3 for guidance on calculating critical intersection v/c ratio. I concur with this recommendation.

Analysis scenarios #3 and #4 also need to include in-process trips. The proposed background growth rates of 0.3%, as stated, are confusing and are low. Other recent TIAs have used a 1.3% or 1.4% annual growth rate, which is acceptable.

There is no scope for crash analysis. This should be added. There are at least two intersections with existing elevated crash rates that will be impacted by this development:

- OR 214 at Evergreen Road
- OR 214 at Oregon Way/Country Club Road.

In-Process Development

In-process trips for the study intersections should include the following:

- Allison Way Apartments
- Project Basie
- Specht Development (formerly Project Gamos)
- 8708 Parr Road – Kalugin
- Woodburn US Market.

Proportionate Share Mitigation Intersections

Recent analyses of intersections along OR 214 west of and including Highway 99E indicate several intersections are or are projected to be failing ODOT's mobility standards, have elevated crash rates, or both. It appears the proposal will impact several nearby intersections for which the City has recently been collecting proportionate share contributions toward future mitigation projects. These intersections and the reasoning are shown below.

The TIA should include the number of net new site trips in the PM peak hour estimated to impact these intersections to assist in assessing the proportionate share contributions. Based on the relatively modest impact of trips to and from the Woodburn/Unitus Community Credit Union proposal on these intersections, a detailed analysis is not required for intersections on this list that are not included in the TIA scoping memo for detailed analysis.

- **OR 211/214 at Highway 99E:** this intersection is already over-capacity based on ODOT's mobility targets. There is an identified mitigation project toward which this site should contribute a proportionate share contribution.
- **OR 214 at Oregon Way/ Country Club Road:** existing elevated crash rate, includes a modest contribution toward *Transportation System Plan (TSP) Project R11: OR 214/Oregon Way/Country Club Road Intersection* to "investigate corridor signal timing and coordination adjustments in coordination with ODOT."
- **OR-214 and I-5 ramps** – impact to TSP signal timing project (ramp queuing and congestion): the proposal should contribute a modest share toward a signal study and signal timing improvements to alleviate queuing and congestion issues at the interchange.
- **OR-214 and Evergreen Road** – elevated crash rate. Contribute a proportionate share toward a signal/intersection study and improvement to alleviate the crash condition for this intersection..
- **OR-214 and Settlemier** – mobility threshold exceeded in 2040. Proportionate share contribution toward an intersection study and eventual project to resolve this deficiency.

The following City-owned intersections also are or will shortly be failing the City's mobility standards; a modest proportionate share contribution will be sought toward mitigation projects to alleviate this condition:

- Evergreen at Hayes
- Evergreen at Stacey Allison Way.

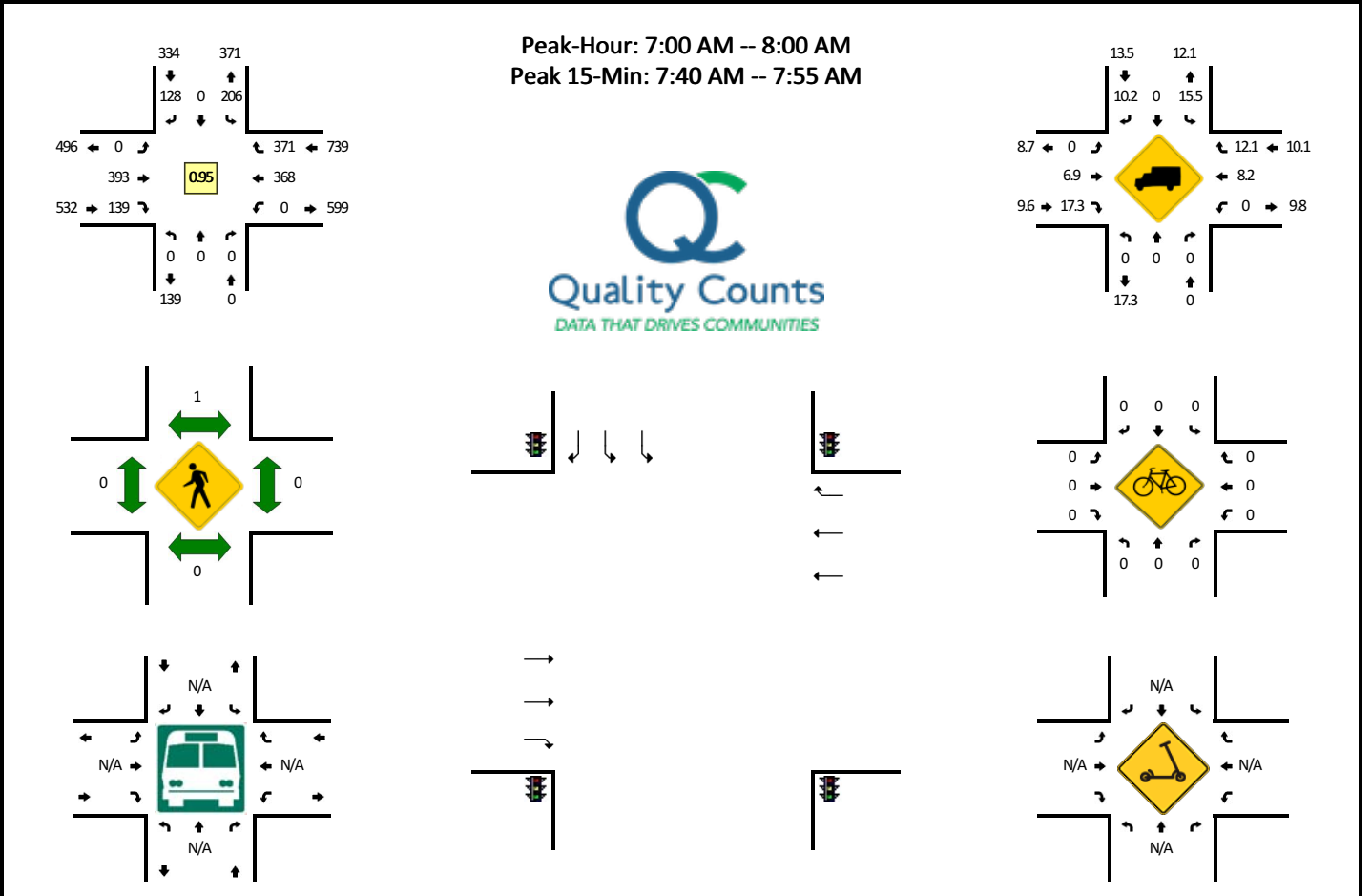
Active Transportation

The TIA scoping memo did not specifically reference active transportation modes such as bicycles and pedestrians, nor did it reference public transportation/transit. This analysis is required under the Woodburn Development Ordinance.

Appendix D: Traffic Volume Counts

LOCATION: SB I-5 Ramps -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788001
DATE: Wed, Jun 1 2022

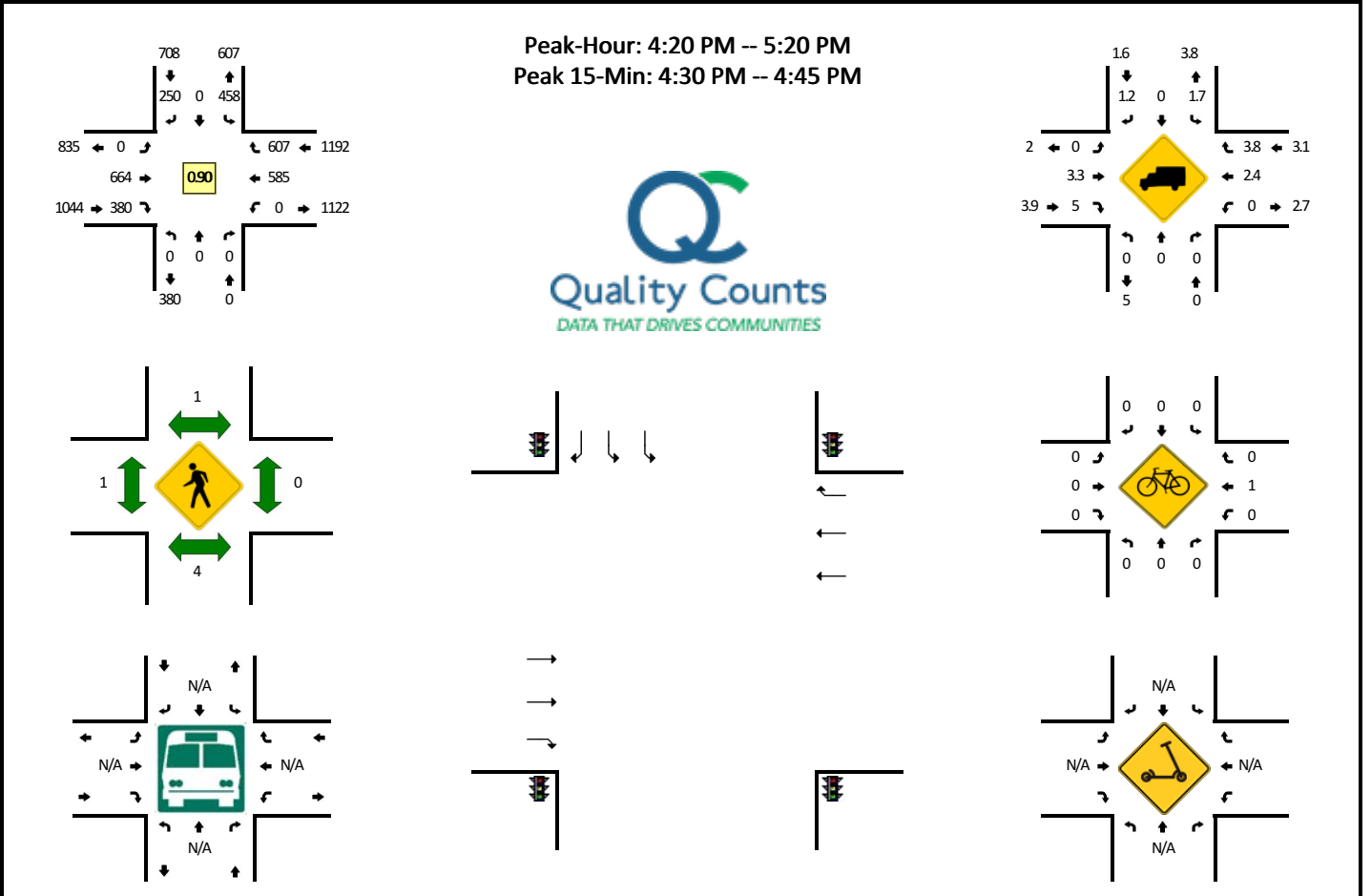


5-Min Count Period Beginning At	SB I-5 Ramps (Northbound)				SB I-5 Ramps (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	16	0	8	0	0	24	8	0	0	34	25	0	115	
7:05 AM	0	0	0	0	21	0	13	0	0	28	10	0	0	30	40	0	142	
7:10 AM	0	0	0	0	12	0	11	0	0	30	16	0	0	31	23	0	123	
7:15 AM	0	0	0	0	21	0	12	0	0	37	14	0	0	33	34	0	151	
7:20 AM	0	0	0	0	13	0	13	0	0	29	8	0	0	29	32	0	124	
7:25 AM	0	0	0	0	24	0	13	0	0	42	12	0	0	28	21	0	140	
7:30 AM	0	0	0	0	14	0	9	0	0	38	9	0	0	25	42	0	137	
7:35 AM	0	0	0	0	11	0	5	0	0	35	13	0	0	30	32	0	126	
7:40 AM	0	0	0	0	25	0	6	0	0	39	11	0	0	26	42	0	149	
7:45 AM	0	0	0	0	18	0	12	0	0	34	7	0	0	42	30	0	143	
7:50 AM	0	0	0	0	17	0	9	0	0	28	23	0	0	30	23	0	130	
7:55 AM	0	0	0	0	14	0	17	0	0	29	8	0	0	30	27	0	125	1605
8:00 AM	0	0	0	0	10	0	13	0	0	21	7	0	0	27	19	0	97	1587
8:05 AM	0	0	0	0	11	0	7	0	0	34	12	0	0	20	26	0	110	1555
8:10 AM	0	0	0	0	14	0	8	0	0	26	12	0	0	30	35	0	125	1557
8:15 AM	0	0	0	0	18	0	4	0	0	15	6	0	0	27	21	0	91	1497
8:20 AM	0	0	0	0	15	0	7	0	0	32	11	0	0	30	16	0	111	1484
8:25 AM	0	0	0	0	15	0	5	0	0	25	10	0	0	18	20	0	93	1437
8:30 AM	0	0	0	0	17	0	9	0	0	28	11	0	0	28	19	0	112	1412
8:35 AM	0	0	0	0	19	0	9	0	0	23	10	0	0	23	15	0	99	1385
8:40 AM	0	0	0	0	10	0	13	0	0	30	13	0	0	25	25	0	116	1352
8:45 AM	0	0	0	0	19	0	11	0	0	28	14	0	0	26	22	0	120	1329
8:50 AM	0	0	0	0	17	0	6	0	0	16	10	0	0	24	22	0	95	1294
8:55 AM	0	0	0	0	9	0	15	0	0	17	4	0	0	35	17	0	97	1266
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	240	0	108	0	0	404	164	0	0	392	380	0	1688	
Heavy Trucks	0	0	0	0	24	0	12	0	0	32	24	0	0	32	64	0	188	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SB I-5 Ramps -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788002
DATE: Wed, Jun 1 2022

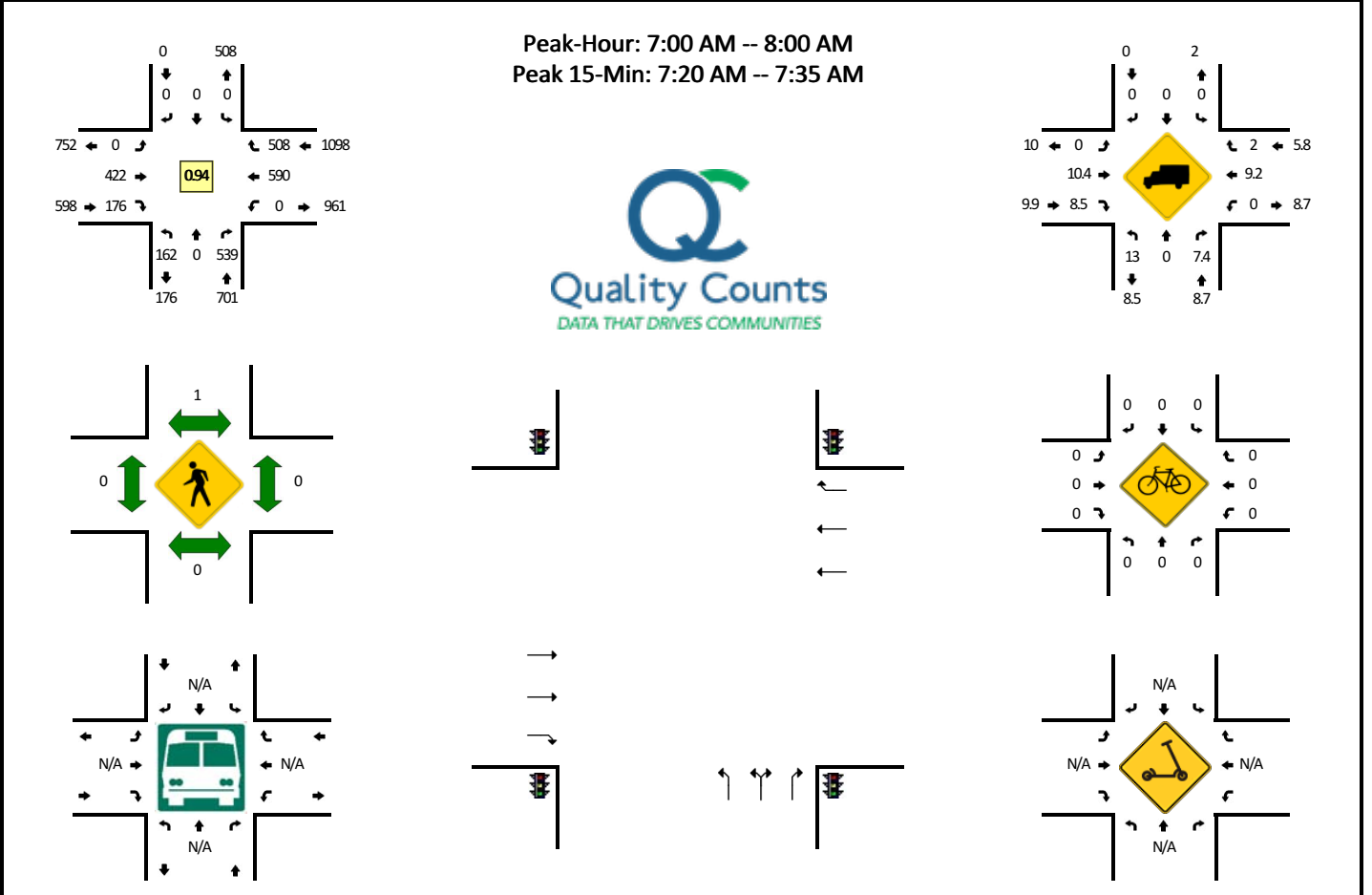


5-Min Count Period Beginning At	SB I-5 Ramps (Northbound)				SB I-5 Ramps (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	35	0	27	0	0	50	33	0	0	52	33	0	230	
4:05 PM	0	0	0	0	46	0	17	0	0	44	29	0	0	43	40	0	219	
4:10 PM	0	0	0	0	41	0	23	0	0	56	41	0	0	53	42	0	256	
4:15 PM	0	0	0	0	30	0	16	0	0	56	22	0	0	43	39	0	206	
4:20 PM	0	0	0	0	37	0	21	0	0	54	26	0	0	49	50	0	237	
4:25 PM	0	0	0	0	42	0	17	0	0	53	18	0	0	43	54	0	227	
4:30 PM	0	0	0	0	49	0	28	0	0	54	25	0	0	42	50	0	248	
4:35 PM	0	0	0	0	38	0	27	0	0	59	35	0	0	65	50	0	274	
4:40 PM	0	0	0	0	43	0	23	0	0	60	43	0	0	73	55	0	297	
4:45 PM	0	0	0	0	42	0	17	0	0	54	24	0	0	48	46	0	231	
4:50 PM	0	0	0	0	30	0	23	0	0	63	35	0	0	37	53	0	241	
4:55 PM	0	0	0	0	35	0	21	0	0	35	27	0	0	45	59	0	222	2888
5:00 PM	0	0	0	0	42	0	15	0	0	52	32	0	0	42	53	0	236	2894
5:05 PM	0	0	0	0	30	0	21	0	0	54	25	0	0	59	48	0	237	2912
5:10 PM	0	0	0	0	36	0	19	0	0	64	48	0	0	48	40	0	255	2911
5:15 PM	0	0	0	0	34	0	18	0	0	62	42	0	0	34	49	0	239	2944
5:20 PM	0	0	0	0	30	0	24	0	0	50	26	0	0	30	45	0	205	2912
5:25 PM	0	0	0	0	38	0	27	0	0	59	31	0	0	38	28	0	221	2906
5:30 PM	0	0	0	0	38	0	20	0	0	43	17	0	0	41	38	0	197	2855
5:35 PM	0	0	0	0	49	0	22	0	0	43	24	0	0	36	33	0	207	2788
5:40 PM	0	0	0	0	38	0	20	0	0	47	30	0	0	46	33	0	214	2705
5:45 PM	0	0	0	0	40	0	20	0	0	38	12	0	0	45	37	0	192	2666
5:50 PM	0	0	0	0	33	0	13	0	0	56	14	0	0	35	24	0	175	2600
5:55 PM	0	0	0	0	31	0	19	0	0	47	21	0	0	38	25	0	181	2559
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	520	0	312	0	0	692	412	0	0	720	620	0	3276	
Heavy Trucks	0	0	0	0	24	0	8	0	0	20	8	0	0	16	40	0	116	
Buses																		
Pedestrians		4				4				0				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: NB I-5 Ramps -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788003
DATE: Wed, Jun 1 2022



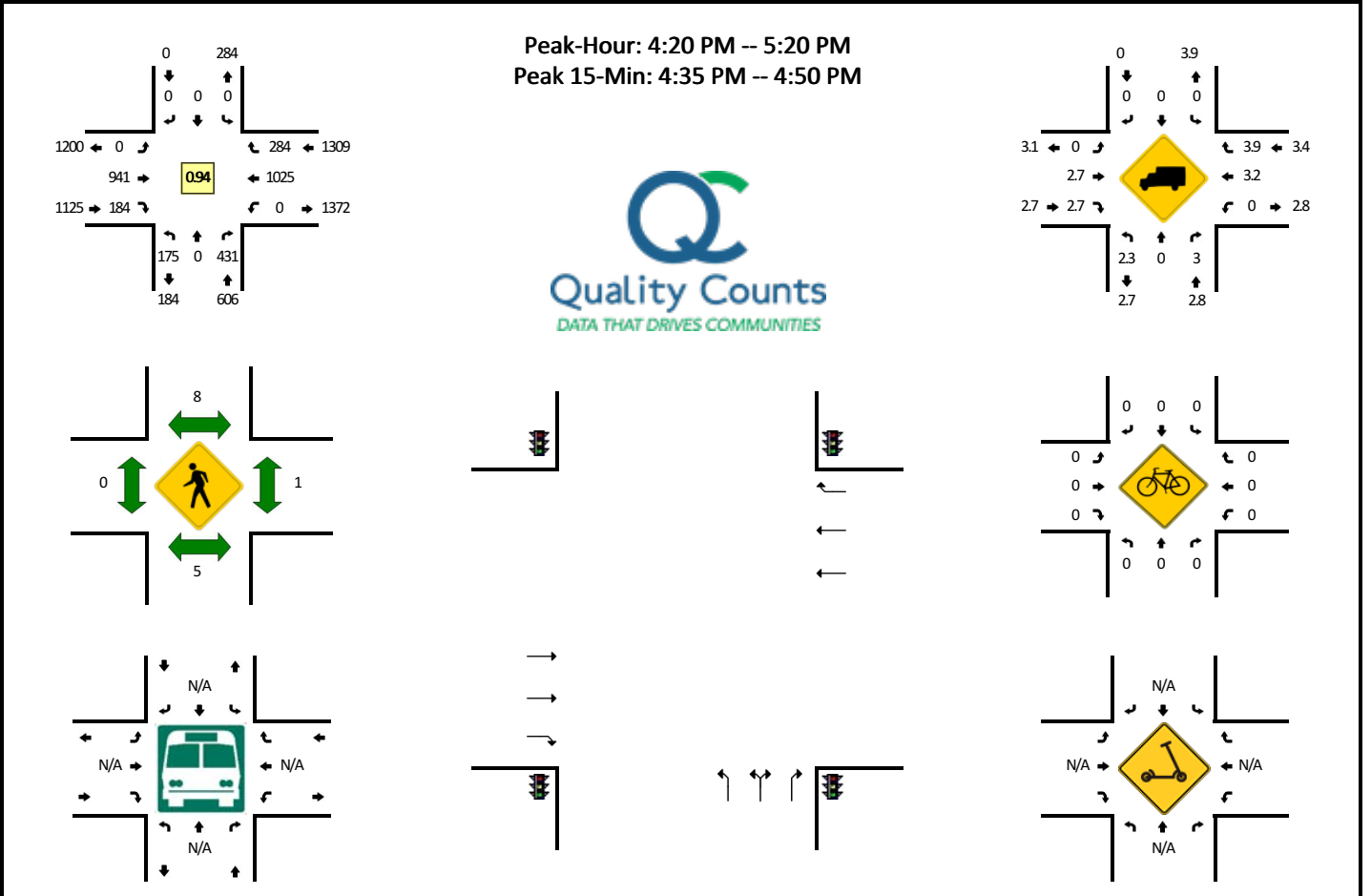
5-Min Count Period Beginning At	NB I-5 Ramps (Northbound)				NB I-5 Ramps (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	16	0	44	0	0	0	0	0	0	0	34	8	0	0	50	49	0	201	
7:05 AM	14	0	35	0	0	0	0	0	0	0	32	17	0	0	49	52	0	199	
7:10 AM	16	0	40	0	0	0	0	0	0	0	27	17	0	0	38	44	0	182	
7:15 AM	15	0	37	0	0	0	0	0	0	0	38	17	0	0	57	40	0	204	
7:20 AM	20	0	67	0	0	0	0	0	0	0	31	9	0	0	39	46	0	212	
7:25 AM	9	0	46	0	0	0	0	0	0	0	44	18	0	0	44	47	0	208	
7:30 AM	8	0	39	0	0	0	0	0	0	0	38	16	0	0	58	57	0	216	
7:35 AM	13	0	44	0	0	0	0	0	0	0	29	19	0	0	52	37	0	194	
7:40 AM	8	0	35	0	0	0	0	0	0	0	46	19	0	0	65	35	0	208	
7:45 AM	16	0	68	0	0	0	0	0	0	0	32	19	0	0	51	38	0	224	
7:50 AM	12	0	44	0	0	0	0	0	0	0	39	8	0	0	43	38	0	184	
7:55 AM	15	0	40	0	0	0	0	0	0	0	32	9	0	0	44	25	0	165	2397
8:00 AM	5	0	23	0	0	0	0	0	0	0	23	9	0	0	41	31	0	132	2328
8:05 AM	16	0	20	0	0	0	0	0	0	0	35	9	0	0	39	31	0	150	2279
8:10 AM	12	0	35	0	0	0	0	0	0	0	29	10	0	0	48	28	0	162	2259
8:15 AM	12	0	34	0	0	0	0	0	0	0	26	7	0	0	38	35	0	152	2207
8:20 AM	11	0	36	0	0	0	0	0	0	0	35	10	0	0	29	25	0	146	2141
8:25 AM	5	0	24	0	0	0	0	0	0	0	21	11	0	0	32	26	0	119	2052
8:30 AM	11	0	25	0	0	0	0	0	0	0	44	8	0	0	41	30	0	159	1995
8:35 AM	8	0	18	0	0	0	0	0	0	0	30	7	0	0	34	31	0	128	1929
8:40 AM	10	0	21	0	0	0	0	0	0	0	33	6	0	0	39	37	0	146	1867
8:45 AM	15	0	42	0	0	0	0	0	0	0	38	11	0	0	34	20	0	160	1803
8:50 AM	14	0	30	0	0	0	0	0	0	0	29	5	0	0	37	20	0	135	1754
8:55 AM	11	0	23	0	0	0	0	0	0	0	22	4	0	0	29	19	0	108	1697

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	148	0	608	0	0	0	0	0	0	452	172	0	0	564	600	0	2544
Heavy Trucks	12	0	60	0	0	0	0	0	0	60	8	0	0	36	4	0	180
Buses																	0
Pedestrians					0					0							0
Bicycles	0	0	0		0	0	0			0	0	0		0	0		0
Scoters																	0

Comments:

LOCATION: NB I-5 Ramps -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788004
DATE: Wed, Jun 1 2022



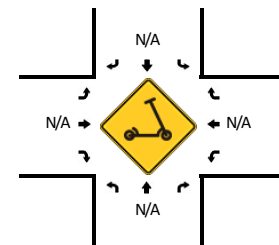
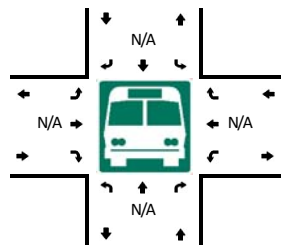
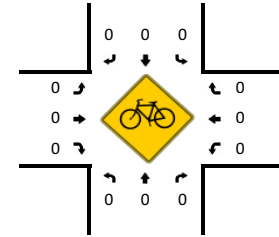
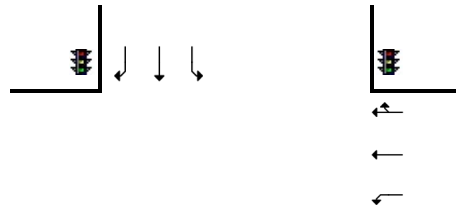
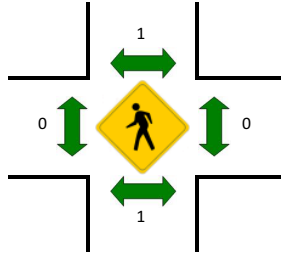
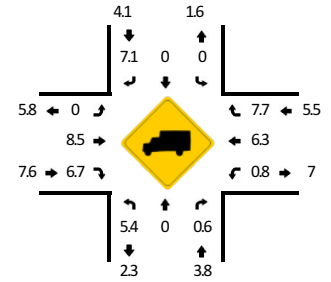
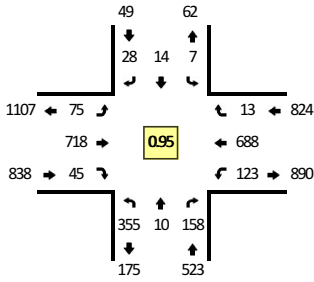
5-Min Count Period Beginning At	NB I-5 Ramps (Northbound)				NB I-5 Ramps (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	16	0	23	0	0	0	0	0	0	71	17	0	0	68	25	0	220	
4:05 PM	14	0	31	0	0	0	0	0	0	73	16	0	0	71	28	0	233	
4:10 PM	16	0	30	0	0	0	0	0	0	85	14	0	0	77	21	0	243	
4:15 PM	21	0	39	0	0	0	0	0	0	72	14	0	0	70	31	0	247	
4:20 PM	19	0	33	0	0	0	0	0	0	76	17	0	0	74	24	0	243	
4:25 PM	12	0	32	0	0	0	0	0	0	79	17	0	0	90	23	0	253	
4:30 PM	13	0	35	0	0	0	0	0	0	88	16	0	0	78	13	0	243	
4:35 PM	22	0	28	0	0	0	0	0	0	77	18	0	0	104	29	0	278	
4:40 PM	20	0	39	0	0	0	0	0	0	83	21	0	0	94	21	0	278	
4:45 PM	16	0	36	0	0	0	0	0	0	87	9	0	0	82	26	0	256	
4:50 PM	12	0	37	0	0	0	0	0	0	76	19	0	0	95	22	0	261	
4:55 PM	11	0	49	0	0	0	0	0	0	58	12	0	0	79	20	0	229	2984
5:00 PM	11	0	34	0	0	0	0	0	0	78	15	0	0	90	32	0	260	3024
5:05 PM	18	0	36	0	0	0	0	0	0	72	9	0	0	84	16	0	235	3026
5:10 PM	11	0	35	0	0	0	0	0	0	82	17	0	0	74	25	0	244	3027
5:15 PM	10	0	37	0	0	0	0	0	0	85	14	0	0	81	33	0	260	3040
5:20 PM	11	0	52	0	0	0	0	0	0	72	10	0	0	64	21	0	230	3027
5:25 PM	10	0	28	0	0	0	0	0	0	83	19	0	0	57	23	0	220	2994
5:30 PM	9	0	48	0	0	0	0	0	0	67	11	0	0	73	17	0	225	2976
5:35 PM	12	0	38	0	0	0	0	0	0	82	10	0	0	59	20	0	221	2919
5:40 PM	13	0	25	0	0	0	0	0	0	79	10	0	0	64	16	0	207	2848
5:45 PM	13	0	28	0	0	0	0	0	0	65	11	0	0	71	11	0	199	2791
5:50 PM	9	0	23	0	0	0	0	0	0	70	18	0	0	52	19	0	191	2721
5:55 PM	17	0	26	0	0	0	0	0	0	67	8	0	0	50	12	0	180	2672
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	232	0	412	0	0	0	0	0	0	988	192	0	0	1120	304	0	3248	
Heavy Trucks	8	0	12	0	0	0	0	0	0	36	4	0	0	32	8	0	100	
Buses																		
Pedestrians		8				8				0				4			20	
Bicycles	0	0	0		0	0	0			0	0	0	0	0	0		0	
Scoters																		

Comments:

LOCATION: Evergreen Rd -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788005
DATE: Wed, Jun 1 2022

Peak-Hour: 7:00 AM -- 8:00 AM
 Peak 15-Min: 7:20 AM -- 7:35 AM

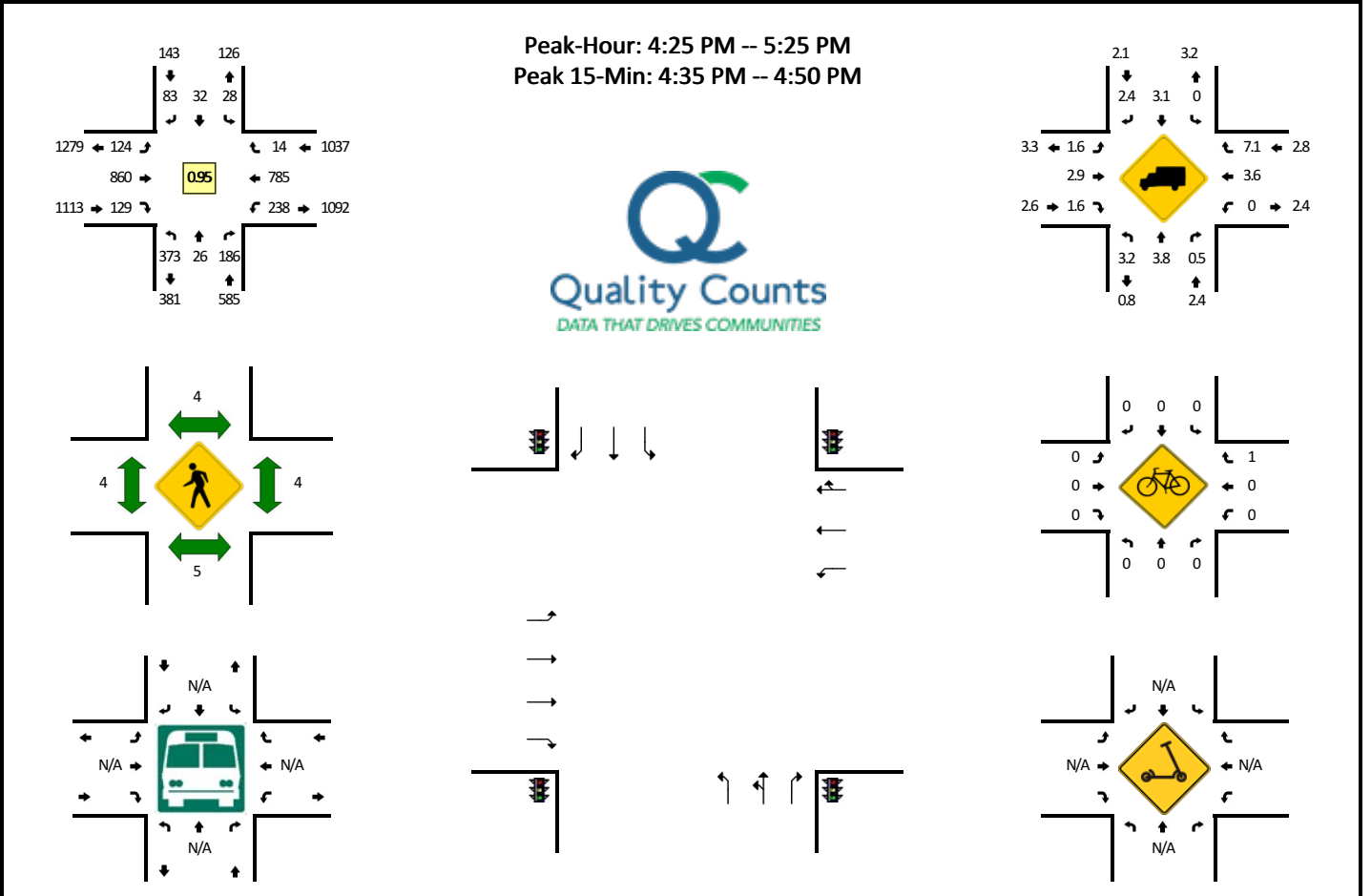


5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	30	0	12	0	0	2	3	0	3	51	3	4	7	59	2	0	176	
7:05 AM	38	1	12	0	0	1	4	0	1	55	3	2	10	60	1	0	188	
7:10 AM	21	2	15	0	2	1	0	0	0	53	3	3	11	59	0	0	170	
7:15 AM	31	0	20	0	1	0	2	0	1	62	1	3	7	60	0	0	188	
7:20 AM	32	1	17	0	2	1	1	0	1	74	4	2	9	55	0	0	199	
7:25 AM	24	1	14	0	1	1	4	0	8	59	5	1	7	62	0	0	187	
7:30 AM	42	0	11	0	0	0	3	0	3	65	3	4	7	62	3	2	205	
7:35 AM	32	1	13	0	1	1	4	0	4	47	4	4	11	54	0	1	177	
7:40 AM	31	0	16	0	0	0	2	0	4	58	4	5	12	59	1	2	194	
7:45 AM	30	3	4	0	0	2	3	0	6	76	3	5	7	56	1	1	197	
7:50 AM	23	0	11	0	0	3	1	0	8	61	4	1	10	52	1	0	175	
7:55 AM	21	1	13	0	0	2	1	0	0	57	8	2	18	50	4	1	178	2234
8:00 AM	21	1	11	0	0	1	3	0	6	47	4	4	15	42	0	1	156	2214
8:05 AM	25	0	9	0	1	1	5	0	3	30	3	1	12	39	0	1	130	2156
8:10 AM	21	1	10	0	0	0	4	0	6	37	8	3	7	48	0	0	145	2131
8:15 AM	25	0	10	0	1	0	2	0	2	39	7	2	16	44	2	1	151	2094
8:20 AM	17	1	8	0	1	1	2	0	0	52	5	2	7	45	1	0	142	2037
8:25 AM	15	0	10	0	1	2	1	0	0	39	5	2	10	32	0	0	117	1967
8:30 AM	17	1	12	0	0	0	0	0	5	43	4	4	15	48	0	1	150	1912
8:35 AM	22	4	10	0	0	2	3	0	1	26	3	3	8	37	1	1	121	1856
8:40 AM	24	0	11	0	1	1	1	0	1	37	6	4	6	50	1	4	147	1809
8:45 AM	10	0	19	0	1	4	6	0	0	45	5	2	16	35	3	1	147	1759
8:50 AM	15	0	12	0	0	2	0	0	3	43	2	0	14	37	2	0	130	1714
8:55 AM	12	1	21	0	3	0	4	0	4	30	3	3	24	33	0	1	139	1675
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	392	8	168	0	12	8	32	0	48	792	48	28	92	716	12	8	2364	
Heavy Trucks	12	0	4		0	0	0		0	80	4		0	28	4		132	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: Evergreen Rd -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788006
DATE: Wed, Jun 1 2022

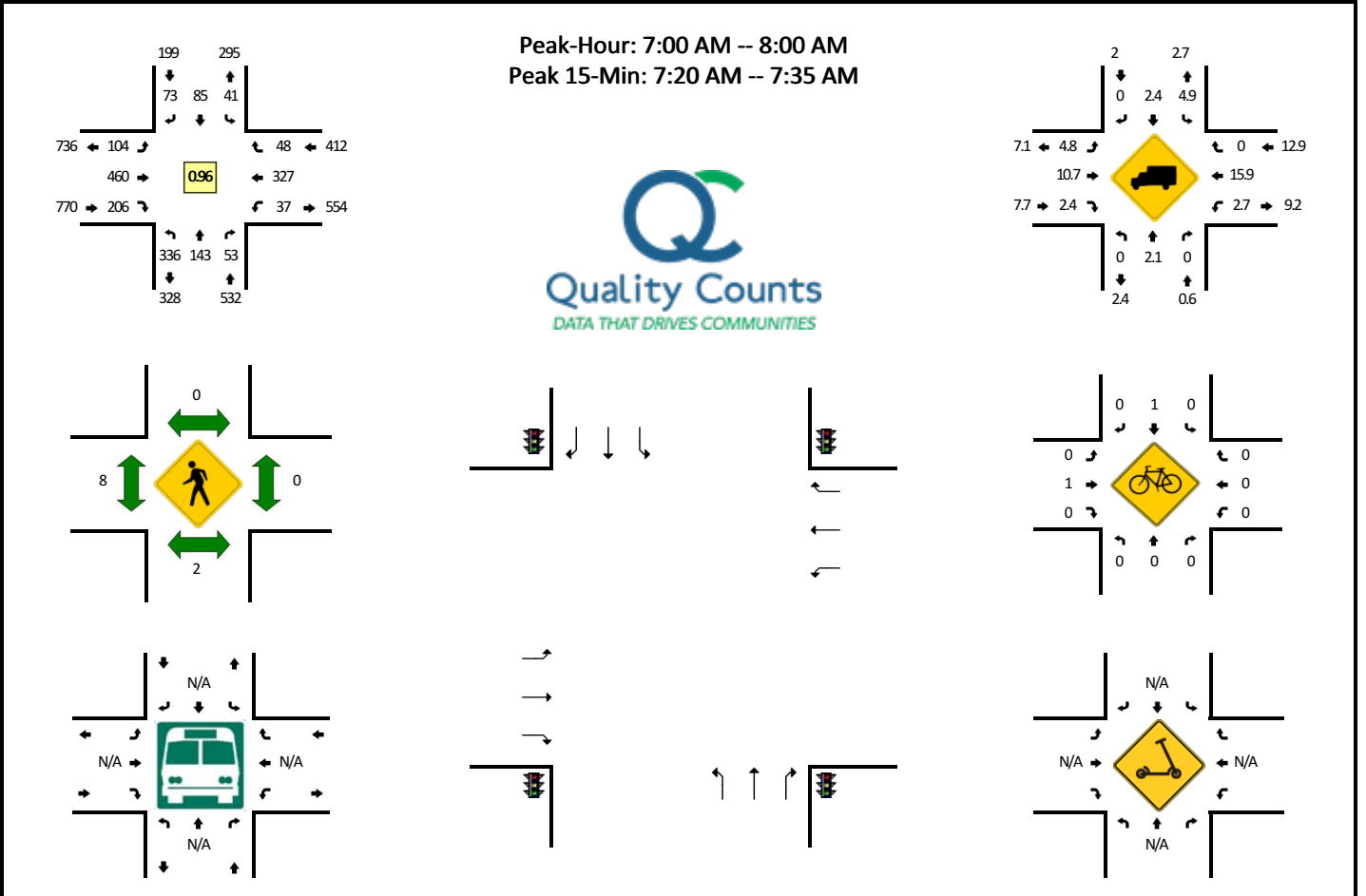


5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	34	1	22	0	2	2	4	0	5	60	9	4	14	50	0	0	207	
4:05 PM	26	0	20	0	5	1	6	0	4	71	13	4	20	63	0	1	234	
4:10 PM	29	1	19	0	4	4	7	0	7	70	11	1	17	64	2	2	238	
4:15 PM	23	3	19	0	6	2	5	0	6	69	8	7	18	65	1	1	233	
4:20 PM	37	1	11	0	3	1	3	0	7	67	8	4	17	58	2	5	224	
4:25 PM	33	3	14	0	2	3	6	0	1	71	9	5	19	70	1	1	238	
4:30 PM	18	3	14	0	1	2	9	0	7	80	14	0	17	57	2	4	228	
4:35 PM	51	1	13	0	2	6	6	0	6	65	10	2	19	68	0	1	250	
4:40 PM	30	5	16	0	4	4	5	0	4	90	14	0	20	85	1	1	279	
4:45 PM	36	3	14	0	5	3	5	0	9	64	11	4	12	64	1	0	231	
4:50 PM	34	1	12	0	3	0	7	0	9	63	12	3	23	70	2	1	240	
4:55 PM	20	1	18	0	2	1	8	0	9	70	11	5	13	67	4	1	230	2832
5:00 PM	37	2	18	0	0	2	10	0	10	57	7	6	20	60	1	0	230	2855
5:05 PM	34	3	18	0	4	4	7	0	8	74	6	1	17	62	1	1	240	2861
5:10 PM	29	1	18	0	3	2	6	0	8	72	13	4	19	62	1	3	241	2864
5:15 PM	33	3	16	0	2	3	7	0	7	68	13	6	23	62	0	1	244	2875
5:20 PM	18	0	15	0	0	2	7	0	8	86	9	2	18	58	0	4	227	2878
5:25 PM	24	0	12	0	4	4	2	0	8	65	13	1	16	57	1	1	208	2848
5:30 PM	25	1	12	0	2	3	5	0	3	73	10	5	18	56	2	0	215	2835
5:35 PM	22	3	15	0	2	3	3	0	4	63	11	7	17	48	0	0	198	2783
5:40 PM	26	3	17	0	2	2	6	0	7	79	8	1	14	47	1	0	213	2717
5:45 PM	26	2	16	0	2	4	4	0	7	63	6	4	13	50	1	4	202	2688
5:50 PM	18	2	16	0	3	2	6	0	4	62	10	4	16	41	3	2	189	2637
5:55 PM	17	2	12	0	2	1	4	0	2	57	7	3	11	39	0	0	157	2564
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	468	36	172	0	44	52	64	0	76	876	140	24	204	868	8	8	3040	
Heavy Trucks	8	0	4		0	0	4		0	20	4		0	24	0		64	
Buses																		
Pedestrians		4				12				8				8			32	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4	
Scoters																		

Comments:

LOCATION: N Settlemier Ave/N Boones Ferry Rd -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788007
DATE: Wed, Jun 1 2022

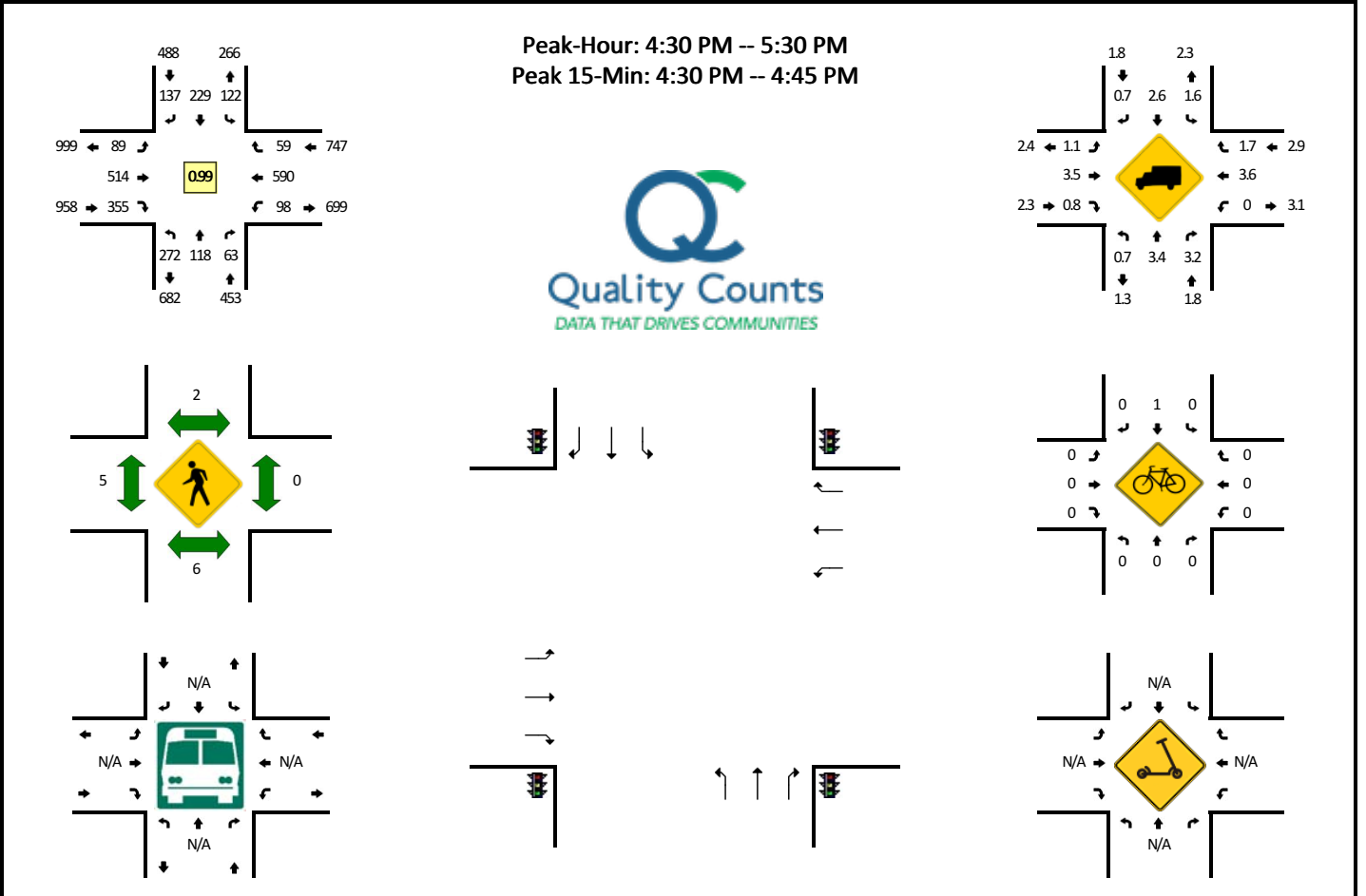


5-Min Count Period Beginning At	N Settlemier Ave/N Boones Ferry Rd (Northbound)				N Settlemier Ave/N Boones Ferry Rd (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	31	11	5	0	1	3	5	0	7	29	16	0	1	27	2	0	138	
7:05 AM	32	12	4	0	2	7	8	0	9	38	20	0	5	29	3	0	169	
7:10 AM	28	17	5	0	8	10	6	0	4	32	12	0	9	28	3	0	162	
7:15 AM	30	14	5	0	4	4	7	0	7	36	17	0	6	25	2	0	157	
7:20 AM	29	14	2	0	2	12	6	0	14	39	28	0	3	21	2	0	172	
7:25 AM	24	14	5	0	0	11	7	0	15	34	20	0	3	30	4	0	167	
7:30 AM	23	8	4	0	3	8	4	0	10	51	15	0	2	27	5	0	160	
7:35 AM	33	14	4	0	9	9	8	0	4	35	12	0	0	31	4	0	163	
7:40 AM	19	4	7	0	3	4	2	0	7	44	11	0	1	36	1	0	139	
7:45 AM	31	13	3	0	3	6	5	0	12	40	25	0	3	30	8	0	179	
7:50 AM	20	11	3	0	2	5	8	0	10	51	12	0	3	24	4	0	153	
7:55 AM	36	11	6	0	4	6	7	0	5	31	18	0	1	19	10	0	154	1913
8:00 AM	11	6	5	0	2	4	4	0	8	39	11	0	5	32	5	0	132	1907
8:05 AM	19	8	6	0	7	8	11	0	3	24	5	0	1	22	2	0	116	1854
8:10 AM	20	5	4	0	4	9	4	0	6	29	16	0	0	27	4	0	128	1820
8:15 AM	18	10	2	0	3	6	8	0	3	27	8	0	1	22	7	0	115	1778
8:20 AM	16	5	1	0	6	3	4	0	6	24	11	0	7	22	3	0	108	1714
8:25 AM	22	10	4	0	4	6	3	0	5	36	15	0	2	26	4	0	137	1684
8:30 AM	21	11	4	0	11	4	7	0	2	20	12	0	1	24	3	0	120	1644
8:35 AM	17	9	3	0	9	5	7	0	9	30	13	0	2	22	4	0	130	1611
8:40 AM	19	16	1	0	12	13	6	0	5	23	18	0	0	29	5	0	147	1619
8:45 AM	18	11	3	0	11	12	9	0	9	24	4	0	0	20	4	0	125	1565
8:50 AM	14	12	5	0	6	7	8	0	12	42	10	0	3	43	10	0	172	1584
8:55 AM	27	11	5	0	18	17	14	0	10	31	14	0	1	23	6	0	177	1607
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	304	144	44	0	20	124	68	0	156	496	252	0	32	312	44	0	1996	
Heavy Trucks	0	4	0		4	0	0		4	68	0		0	36	0		116	
Buses																		
Pedestrians		8				0				12				0			20	
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: N Settlemier Ave/N Boones Ferry Rd -- Newberg Hwy
CITY/STATE: Woodburn, OR

QC JOB #: 15788008
DATE: Wed, Jun 1 2022



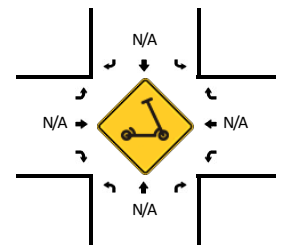
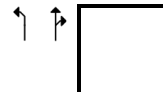
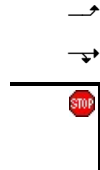
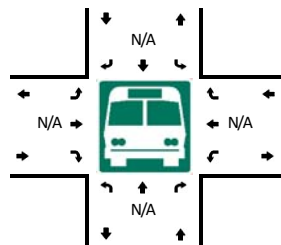
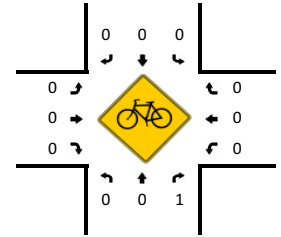
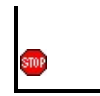
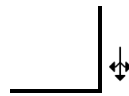
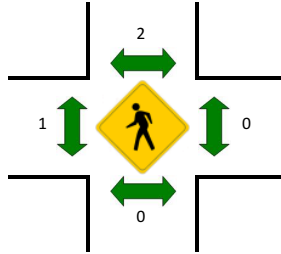
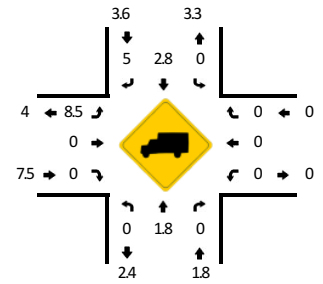
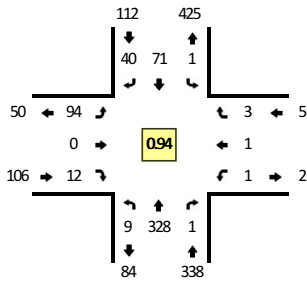
5-Min Count Period Beginning At	N Settlemier Ave/N Boones Ferry Rd (Northbound)				N Settlemier Ave/N Boones Ferry Rd (Southbound)				Newberg Hwy (Eastbound)				Newberg Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	10	7	0	9	17	16	0	7	49	33	0	2	37	1	0	197	
4:05 PM	25	13	4	0	8	16	9	0	5	42	36	0	2	47	2	0	209	
4:10 PM	27	8	5	0	13	13	12	0	12	43	29	0	5	51	1	0	219	
4:15 PM	27	23	4	0	12	18	15	0	11	41	35	0	4	38	4	0	232	
4:20 PM	28	7	6	0	10	16	8	0	3	40	14	0	7	51	2	0	192	
4:25 PM	25	4	8	0	7	14	19	0	3	40	31	0	10	50	7	0	218	
4:30 PM	22	13	7	0	9	17	6	0	6	46	32	0	8	54	4	0	224	
4:35 PM	29	8	10	0	10	15	16	0	8	50	31	0	5	48	2	0	232	
4:40 PM	13	9	4	0	1	22	13	0	13	44	26	0	6	54	8	0	213	
4:45 PM	25	11	4	0	9	24	11	0	7	36	24	0	12	50	1	0	214	
4:50 PM	27	10	4	0	14	24	9	0	4	32	24	0	13	47	6	0	214	
4:55 PM	23	9	5	0	8	19	10	0	6	47	45	0	8	43	8	0	231	2595
5:00 PM	21	12	6	0	6	18	10	0	10	48	21	0	6	51	6	0	215	2613
5:05 PM	26	3	2	0	13	13	14	0	13	41	28	0	9	48	3	0	213	2617
5:10 PM	24	12	4	0	16	18	15	0	4	37	34	0	8	56	1	0	229	2627
5:15 PM	24	8	5	0	11	12	12	0	9	43	30	0	8	48	7	0	217	2612
5:20 PM	18	14	10	0	4	30	15	0	3	40	24	0	8	43	6	0	215	2635
5:25 PM	20	9	2	0	21	17	6	0	6	50	36	0	7	48	7	0	229	2646
5:30 PM	15	16	6	0	3	12	10	0	8	48	33	0	7	44	7	0	209	2631
5:35 PM	20	16	5	0	6	17	13	0	8	42	38	0	6	32	4	0	207	2606
5:40 PM	19	13	5	0	9	18	6	0	7	33	36	0	4	45	10	0	205	2598
5:45 PM	19	14	5	0	7	19	7	0	8	36	28	0	6	30	9	0	188	2572
5:50 PM	18	10	3	0	4	19	9	0	6	41	32	0	11	28	11	0	192	2550
5:55 PM	14	16	9	0	8	12	6	0	8	44	31	0	5	44	10	0	207	2526
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	256	120	84	0	80	216	140	0	108	560	356	0	76	624	56	0	2676	
Heavy Trucks	4	4	0		0	12	0		4	32	4		0	24	0		84	
Buses																		
Pedestrians		12				4				12				0			28	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Evergreen Rd -- Stacy Allison Way
CITY/STATE: Woodburn, OR

QC JOB #: 15788009
DATE: Wed, Jun 1 2022

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

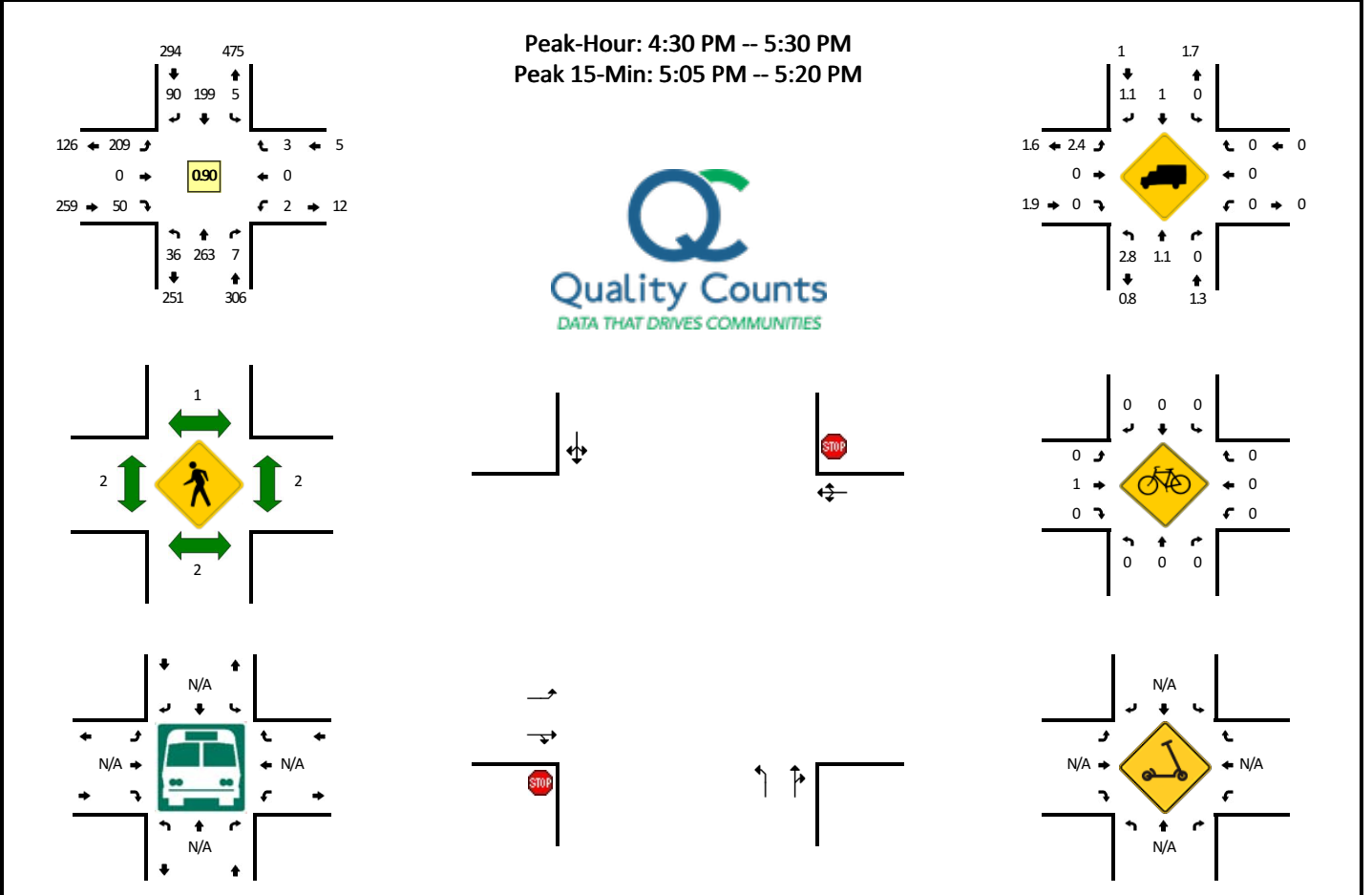


5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				Stacy Allison Way (Eastbound)				Stacy Allison Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	26	0	0	1	4	2	0	10	0	3	0	0	0	0	0	47	
7:05 AM	1	36	1	0	0	3	8	0	8	0	1	0	0	0	0	0	58	
7:10 AM	0	20	0	0	0	5	5	0	7	0	1	0	0	0	0	0	38	
7:15 AM	1	35	0	0	0	1	1	0	6	0	2	0	0	0	1	0	47	
7:20 AM	1	26	0	0	0	7	1	0	5	0	2	0	0	0	1	0	43	
7:25 AM	1	27	0	0	0	9	3	0	11	0	0	0	0	0	0	0	51	
7:30 AM	0	34	0	0	0	6	2	0	7	0	0	0	0	0	0	0	49	
7:35 AM	0	27	0	0	0	5	2	0	10	0	1	0	0	0	1	0	46	
7:40 AM	1	37	0	0	0	7	2	0	7	0	0	0	0	1	0	0	55	
7:45 AM	0	19	0	0	0	6	2	0	4	0	2	0	0	0	0	0	33	
7:50 AM	1	20	0	0	0	6	4	0	13	0	0	0	0	0	0	0	44	
7:55 AM	2	21	0	0	0	12	8	0	6	0	0	0	1	0	0	0	50	561
8:00 AM	1	12	0	0	0	14	3	0	7	0	0	0	0	0	0	0	37	551
8:05 AM	2	15	0	0	0	7	6	0	6	0	3	0	0	0	0	0	39	532
8:10 AM	1	17	0	0	0	9	3	0	9	0	1	0	0	0	0	0	40	534
8:15 AM	0	11	0	0	0	10	8	0	12	0	0	0	0	0	0	0	41	528
8:20 AM	0	15	0	0	0	5	2	0	7	0	2	0	0	0	0	0	31	516
8:25 AM	0	10	0	0	1	8	6	0	8	0	1	0	0	0	0	0	34	499
8:30 AM	0	17	0	0	0	5	7	0	9	0	0	0	0	0	0	0	38	488
8:35 AM	0	19	0	0	0	8	3	0	7	0	1	0	0	0	0	0	38	480
8:40 AM	2	14	0	0	0	4	5	0	12	0	2	0	0	0	0	0	39	464
8:45 AM	2	22	0	0	0	12	10	0	6	0	2	0	0	0	0	0	54	485
8:50 AM	0	15	0	0	0	7	6	0	2	1	0	0	0	0	0	0	31	472
8:55 AM	0	25	0	0	0	7	9	0	5	0	0	0	0	0	0	0	46	468
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	392	0	0	0	72	24	0	96	0	4	0	0	4	4	0	600	
Heavy Trucks	0	8	0	0	0	0	4	0	16	0	0	0	0	0	0	0	28	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Evergreen Rd -- Stacy Allison Way
CITY/STATE: Woodburn, OR

QC JOB #: 15788010
DATE: Wed, Jun 1 2022

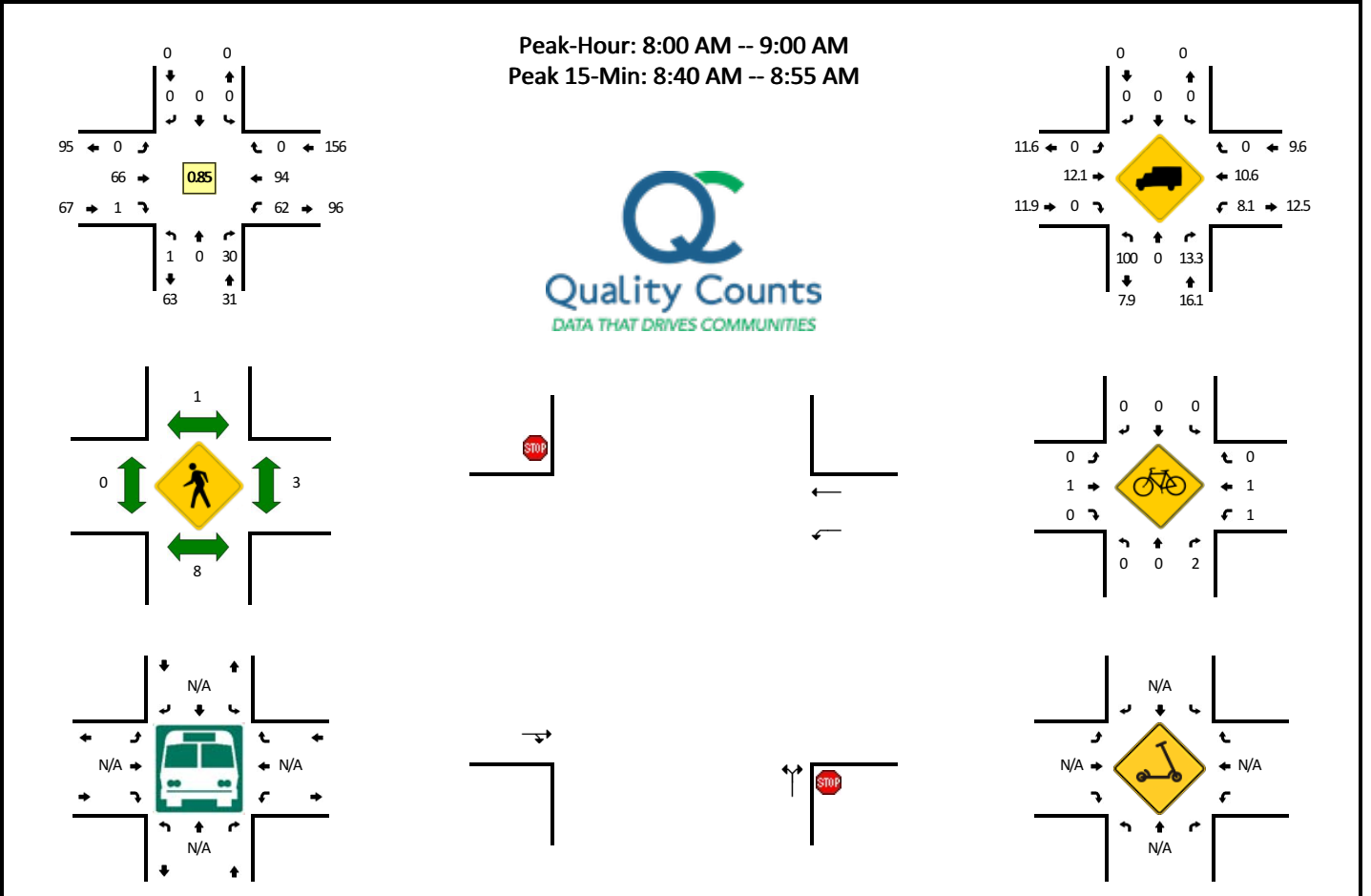


5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				Stacy Allison Way (Eastbound)				Stacy Allison Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	20	1	0	0	17	5	0	24	0	3	0	1	0	0	0	74	
4:05 PM	1	22	0	0	0	15	5	0	25	0	3	0	0	0	0	0	71	
4:10 PM	3	17	1	0	0	12	15	0	20	0	3	0	1	0	0	0	72	
4:15 PM	2	18	0	0	0	14	5	0	21	0	1	0	1	1	0	0	63	
4:20 PM	1	28	1	0	0	12	8	0	11	0	3	0	0	0	0	0	64	
4:25 PM	1	19	0	0	0	11	7	0	17	0	1	0	0	0	1	0	57	
4:30 PM	2	23	0	0	1	19	5	0	17	0	3	0	0	0	0	0	70	
4:35 PM	3	34	0	0	2	12	6	0	20	0	3	0	1	0	0	0	81	
4:40 PM	2	21	1	0	1	13	12	0	14	0	0	0	0	0	0	0	64	
4:45 PM	3	21	0	0	0	16	5	0	13	0	6	0	0	0	0	0	64	
4:50 PM	2	17	0	0	0	16	8	0	20	0	2	0	0	0	0	0	65	
4:55 PM	2	24	1	0	0	15	7	0	10	0	4	0	0	0	2	0	65	810
5:00 PM	6	24	0	0	1	16	5	0	24	0	2	0	1	0	0	0	79	815
5:05 PM	5	29	2	0	0	14	5	0	19	0	5	0	0	0	0	0	79	823
5:10 PM	3	21	0	0	0	18	11	0	12	0	3	0	0	0	0	0	68	819
5:15 PM	4	18	1	0	0	27	12	0	24	0	6	0	0	0	0	0	92	848
5:20 PM	1	19	2	0	0	15	7	0	13	0	6	0	0	0	0	0	63	847
5:25 PM	3	12	0	0	0	18	7	0	23	0	10	0	0	0	1	0	74	864
5:30 PM	1	19	0	0	0	22	6	0	8	0	3	0	0	0	1	0	60	854
5:35 PM	2	15	1	0	1	18	8	0	21	0	3	0	0	1	0	0	70	843
5:40 PM	2	16	1	0	0	12	1	0	15	0	2	0	0	1	0	0	50	829
5:45 PM	2	25	0	0	0	11	6	0	16	0	5	0	0	0	0	0	65	830
5:50 PM	6	22	0	0	1	17	8	0	5	0	3	0	0	0	0	0	62	827
5:55 PM	1	11	0	0	1	15	5	0	11	0	4	0	1	1	0	0	50	812
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	48	272	12	0	0	236	112	0	220	0	56	0	0	0	0	0	956	
Heavy Trucks	4	8	0	0	0	4	0	0	12	0	0	0	0	0	0	0	28	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Harvard Dr -- Stacy Allison Way
CITY/STATE: Woodburn, OR

QC JOB #: 15788011
DATE: Wed, Jun 1 2022

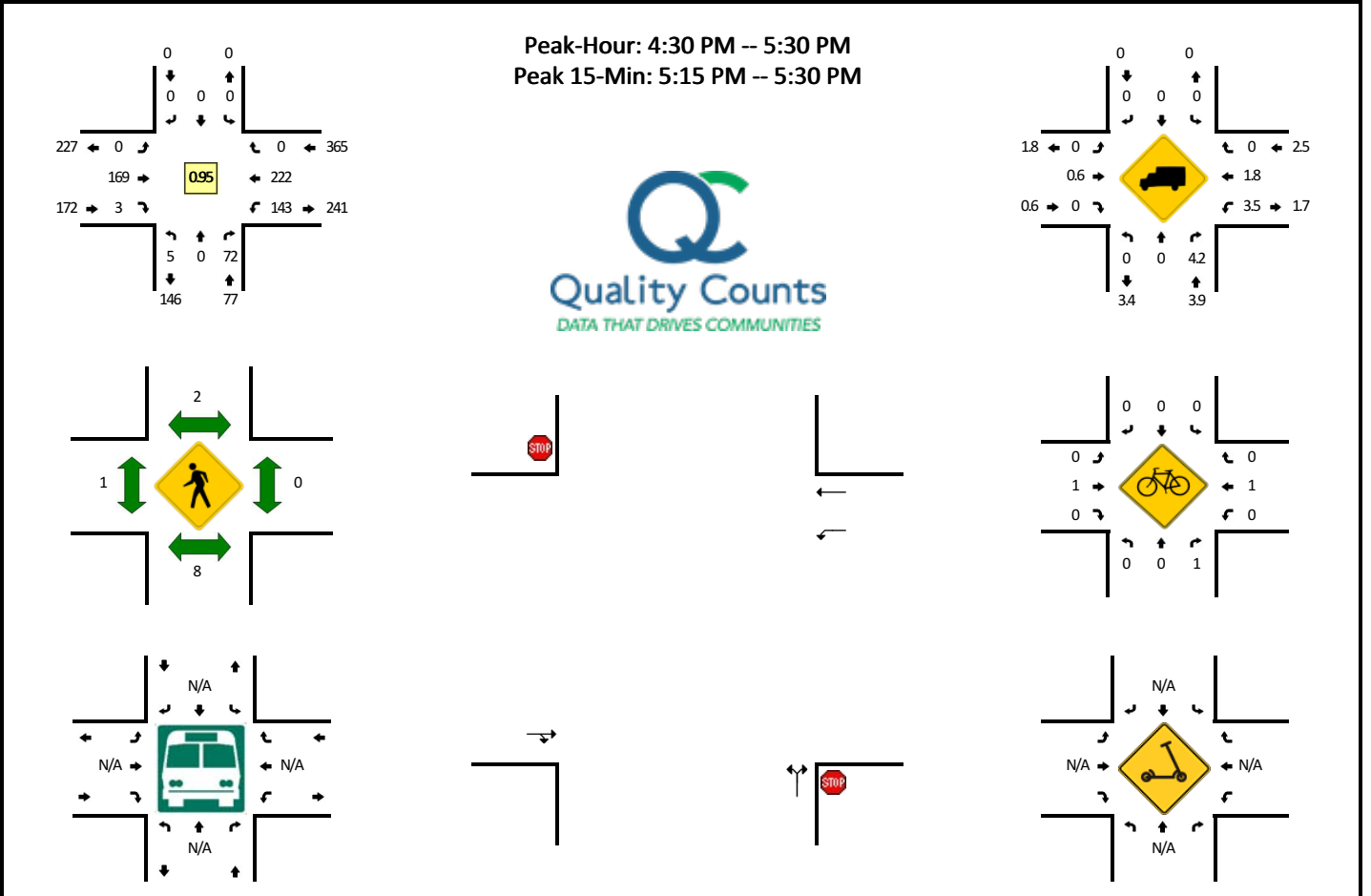


5-Min Count Period Beginning At	Harvard Dr (Northbound)				Harvard Dr (Southbound)				Stacy Allison Way (Eastbound)				Stacy Allison Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	3	0	0	0	0	0	0	10	1	0	5	10	0	0	29	
7:05 AM	0	0	2	0	0	0	0	0	0	5	0	0	3	5	0	0	15	
7:10 AM	0	0	1	0	0	0	0	0	0	6	0	0	5	10	0	0	22	
7:15 AM	0	0	4	0	0	0	0	0	0	8	0	0	7	2	0	0	21	
7:20 AM	0	0	1	0	0	0	0	0	0	4	1	0	10	2	0	0	18	
7:25 AM	0	0	8	0	0	0	0	0	0	8	0	0	8	4	0	0	28	
7:30 AM	1	0	4	0	0	0	0	0	0	6	0	0	3	4	0	0	18	
7:35 AM	0	0	4	0	0	0	0	0	0	6	0	0	7	10	0	0	27	
7:40 AM	0	0	3	0	0	0	0	0	0	3	0	0	10	5	0	0	21	
7:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	4	4	0	0	11	
7:50 AM	0	0	8	0	0	0	0	0	0	6	0	0	6	4	0	0	24	
7:55 AM	0	0	3	0	0	0	0	0	0	4	1	0	3	8	0	0	19	253
8:00 AM	0	0	2	0	0	0	0	0	0	6	0	0	2	5	0	0	15	239
8:05 AM	0	0	1	0	0	0	0	0	0	5	1	0	4	13	0	0	24	248
8:10 AM	0	0	3	0	0	0	0	0	0	7	0	0	5	6	0	0	21	247
8:15 AM	0	0	7	0	0	0	0	0	0	6	0	0	2	7	0	0	22	248
8:20 AM	0	0	2	0	0	0	0	0	0	4	0	0	4	9	0	0	19	249
8:25 AM	0	0	2	0	0	0	0	0	0	3	0	0	5	2	0	0	12	233
8:30 AM	0	0	4	0	0	0	0	0	0	8	0	0	7	6	0	0	25	240
8:35 AM	0	0	3	0	0	0	0	0	0	3	0	0	5	6	0	0	17	230
8:40 AM	0	0	0	0	0	0	0	0	0	10	0	0	3	12	0	0	25	234
8:45 AM	0	0	1	0	0	0	0	0	0	6	0	0	14	5	0	0	26	249
8:50 AM	1	0	1	0	0	0	0	0	0	3	0	0	5	14	0	0	24	249
8:55 AM	0	0	4	0	0	0	0	0	0	5	0	0	6	9	0	0	24	254
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	0	8	0	0	0	0	0	0	76	0	0	88	124	0	0	300	
Heavy Trucks	4	0	0		0	0	0		0	8	0		4	16	0		32	
Buses																		
Pedestrians		4				4				0				4			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Harvard Dr -- Stacy Allison Way
CITY/STATE: Woodburn, OR

QC JOB #: 15788012
DATE: Wed, Jun 1 2022



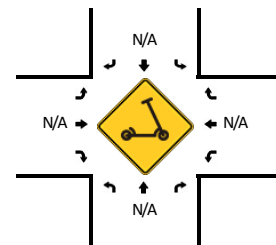
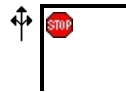
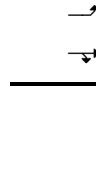
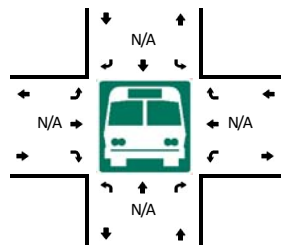
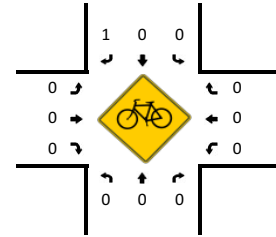
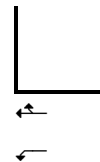
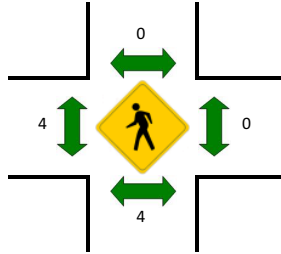
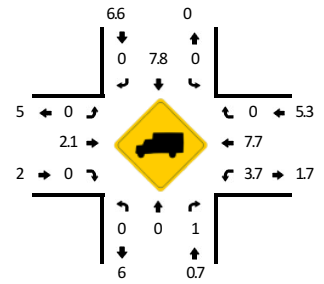
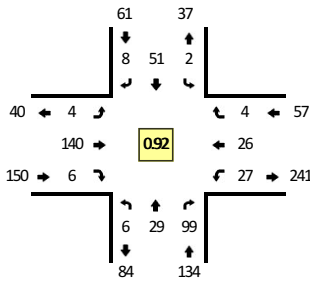
5-Min Count Period Beginning At	Harvard Dr (Northbound)				Harvard Dr (Southbound)				Stacy Allison Way (Eastbound)				Stacy Allison Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	6	0	0	0	0	0	0	19	2	0	12	9	0	0	48	
4:05 PM	1	0	6	0	0	0	0	0	0	18	1	0	14	11	0	0	51	
4:10 PM	0	0	5	0	0	0	0	0	0	18	3	0	6	15	0	0	47	
4:15 PM	0	0	3	0	0	0	0	0	0	18	3	0	18	21	0	0	63	
4:20 PM	1	0	4	0	0	0	0	0	0	9	0	0	13	19	0	0	46	
4:25 PM	0	0	3	0	0	0	0	0	0	18	1	0	11	14	0	0	47	
4:30 PM	1	0	8	0	0	0	0	0	0	16	0	0	12	24	0	0	61	
4:35 PM	0	0	10	0	0	0	0	0	0	16	0	0	9	17	0	0	52	
4:40 PM	1	0	7	0	0	0	0	0	0	8	0	0	14	15	0	0	45	
4:45 PM	0	0	5	0	0	0	0	0	0	10	0	0	12	21	0	0	48	
4:50 PM	2	0	3	0	0	0	0	0	0	17	0	0	7	19	0	0	48	
4:55 PM	0	0	4	0	0	0	0	0	0	13	0	0	15	20	0	0	52	608
5:00 PM	0	0	4	0	0	0	0	0	0	18	0	0	10	17	0	0	49	609
5:05 PM	1	0	8	0	0	0	0	0	0	10	0	0	10	19	0	0	48	606
5:10 PM	0	0	6	0	0	0	0	0	0	14	1	0	14	15	0	0	50	609
5:15 PM	0	0	4	0	0	0	0	0	0	21	1	0	10	15	0	0	51	597
5:20 PM	0	0	7	0	0	0	0	0	0	10	1	0	10	22	0	0	50	601
5:25 PM	0	0	6	0	0	0	0	0	0	16	0	0	20	18	0	0	60	614
5:30 PM	1	0	3	0	0	0	0	0	0	9	0	0	18	22	0	0	53	606
5:35 PM	1	0	5	0	0	0	0	0	0	20	0	0	10	15	0	0	51	605
5:40 PM	0	0	5	0	0	0	0	0	0	8	0	0	14	10	0	0	37	597
5:45 PM	0	0	3	0	0	0	0	0	0	13	0	0	9	13	0	0	38	587
5:50 PM	0	0	3	0	0	0	0	0	0	7	0	0	13	17	0	0	40	579
5:55 PM	0	0	2	0	0	0	0	0	0	8	0	0	8	16	0	0	34	561
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	68	0	0	0	0	0	0	188	8	0	160	220	0	0	644	
Heavy Trucks	0	0	4	0	0	0	0	0	0	0	0	0	4	4	0	0	12	
Buses																		
Pedestrians		8				4				4				0			16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Harvard Dr -- Evergreen Rd
CITY/STATE: Woodburn, OR

QC JOB #: 15788013
DATE: Wed, Jun 1 2022

Peak-Hour: 7:00 AM -- 8:00 AM
 Peak 15-Min: 7:15 AM -- 7:30 AM

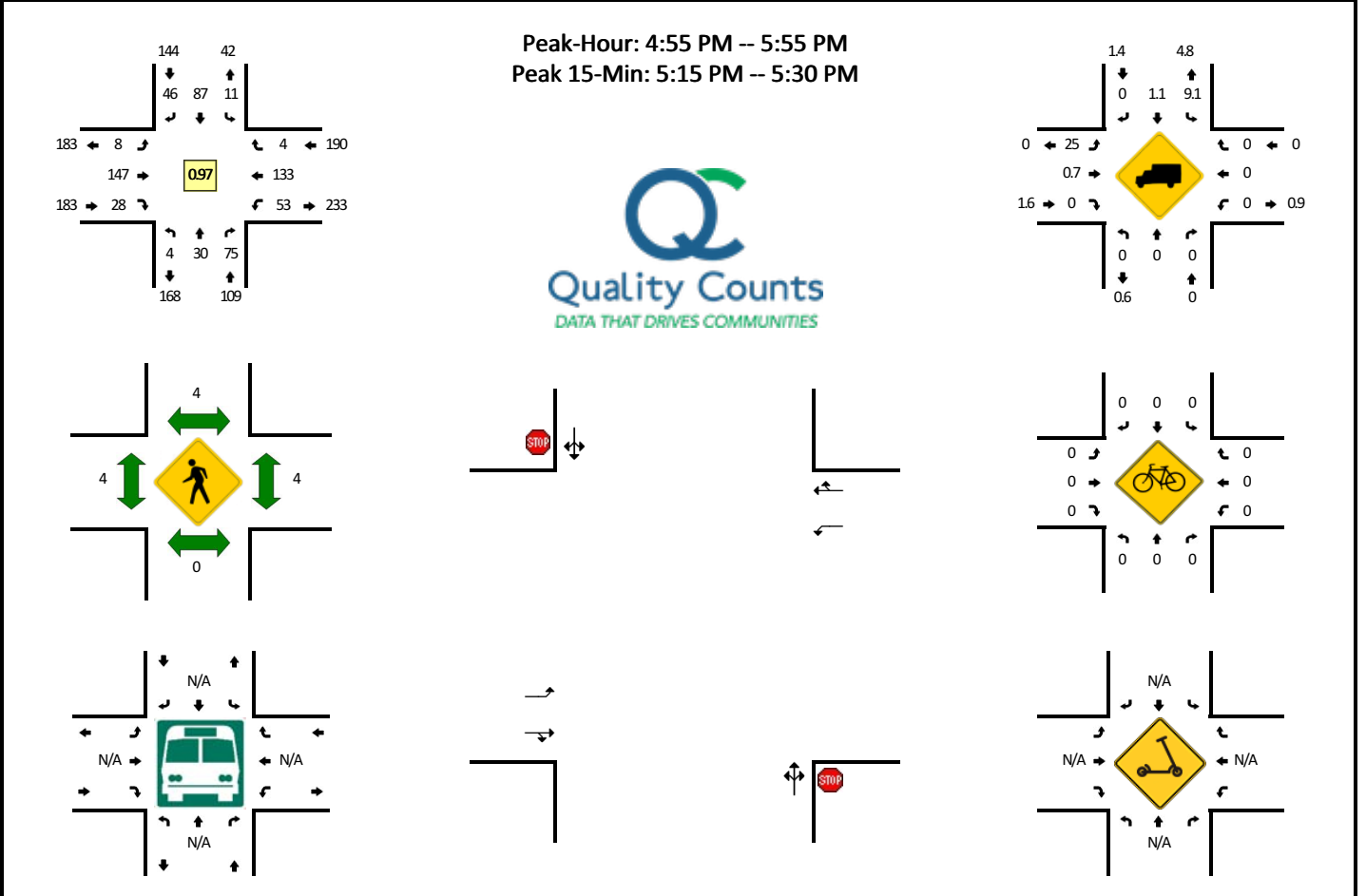


5-Min Count Period Beginning At	Harvard Dr (Northbound)				Harvard Dr (Southbound)				Evergreen Rd (Eastbound)				Evergreen Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	10	0	1	5	0	0	1	13	2	0	2	3	0	0	39	
7:05 AM	0	0	12	0	0	2	0	0	0	15	1	0	3	2	0	0	35	
7:10 AM	0	1	9	0	0	4	0	0	0	9	0	0	0	2	0	0	25	
7:15 AM	4	2	12	0	0	5	1	0	0	14	1	0	1	1	1	0	42	
7:20 AM	0	1	6	0	0	9	1	0	0	12	0	0	1	0	0	0	30	
7:25 AM	0	4	6	0	1	6	1	0	0	11	0	0	3	3	2	0	37	
7:30 AM	1	4	8	0	0	2	2	0	2	14	0	0	0	1	1	0	35	
7:35 AM	0	4	10	0	0	3	2	0	0	13	0	0	3	1	0	0	36	
7:40 AM	0	1	10	0	0	6	1	0	0	13	0	0	4	1	0	0	36	
7:45 AM	0	2	5	0	0	1	0	0	0	10	1	0	5	2	0	0	26	
7:50 AM	0	6	5	0	0	6	0	0	0	7	1	0	3	6	0	0	34	
7:55 AM	1	2	6	0	0	2	0	0	1	9	0	0	2	4	0	0	27	402
8:00 AM	0	0	7	0	0	1	0	0	1	6	1	0	2	8	1	0	27	390
8:05 AM	1	2	5	0	2	3	2	0	0	6	1	0	4	3	2	0	31	386
8:10 AM	2	3	3	0	1	4	0	0	1	8	1	0	0	2	0	0	25	386
8:15 AM	0	3	2	0	0	1	0	0	1	6	2	0	3	2	0	0	20	364
8:20 AM	0	1	2	0	1	3	0	0	0	6	0	0	2	1	1	0	17	351
8:25 AM	4	0	4	0	0	4	0	0	0	3	1	0	3	2	1	0	22	336
8:30 AM	0	2	5	0	0	7	0	0	0	8	3	0	0	2	0	0	27	328
8:35 AM	1	2	5	0	0	3	1	0	1	6	0	0	1	5	0	0	25	317
8:40 AM	0	0	1	0	0	2	1	0	0	9	0	0	0	2	0	0	15	296
8:45 AM	0	2	6	0	2	9	0	0	0	4	1	0	5	3	1	0	33	303
8:50 AM	0	0	6	0	0	5	0	0	0	9	0	0	1	7	1	0	29	298
8:55 AM	0	3	6	0	0	3	1	0	1	9	0	0	3	1	1	0	28	299
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	28	96	0	4	80	12	0	0	148	4	0	20	16	12	0	436	
Heavy Trucks	0	0	0		0	12	0		0	0	0		0	0	0		12	
Buses																		
Pedestrians		0				0				4				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Harvard Dr -- Evergreen Rd
CITY/STATE: Woodburn, OR

QC JOB #: 15788014
DATE: Wed, Jun 1 2022



5-Min Count Period Beginning At	Harvard Dr (Northbound)				Harvard Dr (Southbound)				Evergreen Rd (Eastbound)				Evergreen Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	5	0	0	6	6	0	2	12	2	0	7	5	0	0	46	
4:05 PM	1	5	3	0	0	9	5	0	2	5	1	0	6	6	0	0	43	
4:10 PM	1	2	6	0	2	4	4	0	1	9	4	0	2	8	0	0	43	
4:15 PM	2	2	5	0	0	13	5	0	0	6	3	0	5	7	1	0	49	
4:20 PM	1	3	4	0	0	9	1	0	1	9	1	0	7	7	1	0	44	
4:25 PM	1	3	5	0	0	5	5	0	1	13	0	0	2	12	0	0	47	
4:30 PM	2	2	6	0	1	7	4	0	1	13	4	0	3	9	0	0	52	
4:35 PM	0	3	9	0	2	3	5	0	1	14	2	0	3	7	3	0	52	
4:40 PM	0	2	5	0	1	10	3	0	4	10	2	0	4	6	0	0	47	
4:45 PM	0	4	5	0	0	2	4	0	1	9	4	0	3	12	0	0	44	
4:50 PM	1	0	6	0	0	7	2	0	0	8	2	0	5	12	1	0	44	
4:55 PM	0	2	12	0	0	9	3	0	0	17	5	0	3	8	0	0	59	570
5:00 PM	2	1	8	0	1	5	5	0	4	17	0	0	3	6	0	0	52	576
5:05 PM	0	5	4	0	0	3	3	0	0	14	2	0	0	14	0	0	45	578
5:10 PM	0	3	4	0	0	10	2	0	2	15	2	0	5	13	0	0	56	591
5:15 PM	0	3	9	0	1	7	2	0	0	11	4	0	8	14	1	0	60	602
5:20 PM	0	2	4	0	1	5	4	0	0	9	0	0	3	11	2	0	41	599
5:25 PM	0	5	5	0	1	10	5	0	2	12	4	0	4	13	0	0	61	613
5:30 PM	0	1	4	0	1	9	9	0	0	11	2	0	5	11	0	0	53	614
5:35 PM	0	3	9	0	1	6	2	0	0	7	1	0	8	10	1	0	48	610
5:40 PM	0	3	9	0	1	9	5	0	0	9	4	0	5	9	0	0	54	617
5:45 PM	0	1	2	0	2	5	4	0	0	11	0	0	3	12	0	0	40	613
5:50 PM	2	1	5	0	2	9	2	0	0	14	4	0	6	12	0	0	57	626
5:55 PM	0	2	4	0	1	2	2	0	0	9	0	0	10	5	0	0	35	602
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	40	72	0	12	88	44	0	8	128	32	0	60	152	12	0	648	
Heavy Trucks	0	0	0		0	4	0		0	4	0		0	0	0		8	
Buses																		
Pedestrians		0				0				8				4			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

Appendix E: Volume Development Worksheets

Volume Development - AM (2024)

Stacy Allison Way & Harvard Dr

	1 NB							SB							EB							WB							Int Total			
	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total				
Existing (2022)	0	1	0	0	42	5	3	43	0	0	0	0	0	2	0	0	0	0	71	3	4	2	74	0	0	73	70	0	12	0	143	260
In-Process #1								0							0				39				39			14					14	14
In-Process #2								0							0								0								0	0
In-Process #3								0							0								0								0	0
In-Process #4								0							0								0								0	0
In-Process #5								0							0								0								0	0
Future (2024)	0	1	0	0	43	5	3	44	0	0	0	0	0	2	0	0	0	112	3	4	2	115	0	75	86	0	12	0	161	320		
Pass-By Trips								0							2								2								3	5
New Trips				1				1				8	0		8								8					28			28	37
Balance Check	0	1	1	1	43	5	3	45	0	10	0	0	0	2	10	0	0	112	3	4	2	115	0	75	86	31	12	0	192	362		
								32							78								165								87	
								to North							to South								to East								to West	

Evergreen Rd & Harvard Dr

	2 NB							SB							EB							WB							Int Total		
	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total			
Existing (2022)	0	6	30	102	1	4	138	0	2	53	8	4	0	63	0	4	144	6	3	4	154	0	28	27	4	3	0	59	414		
In-Process #1								0							0							109			39				39	148	
In-Process #2								0							0							6			1				1	7	
In-Process #3								0							0							44			71				71	115	
In-Process #4								0							0							3			2				2	5	
In-Process #5								0							0							0			0				0	0	
Future (2024)	0	6	31	105	1	4	142	0	2	54	8	4	0	64	0	4	310	6	3	4	320	0	29	141	4	3	0	174	700		
Pass-By Trips								0							0							0							0	0	
New Trips								0							0							1							1	1	
Balance Check	0	6	31	105	1	4	142	0	2	54	8	4	0	64	0	5	310	6	3	4	321	0	29	141	4	3	0	174	701		
								-496							-14							417								155	
								40							193							0								73	
								to North							to South							to East								to West	

Stacy Allison Way & Evergreen Rd

	3 NB							SB							EB							WB							Int Total			
	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total				
Existing (2022)	0	9	338	10	163	0	6	0	339	0	0	73	41	4	2	114	0	97	436	0	12	8	1	109	0	0	0	0	0	0	0	0
In-Process #1									101							36								23								23
In-Process #2									6							1								0								0
In-Process #3									39							66								0								66
In-Process #4									3							2								62								62
In-Process #5									0							0								111								111
Future (2024)	0	9	496	0	6	0	505	0	0	180	50	4	2	230	0	123	0	12	8	1	135	0	0	0	0	0	0	0	0			
Pass-By Trips									0							1								2								2
New Trips									3							10								7								8
Balance Check	0	12	496	0	6	0	508	0	0	180	61	4	2	241	0	132	0	13	8	1	145	0	0	0	0	0	0	0	0			
								628							153							145								73		
								40							193							0								73		
								to North							to South							to East								to West		

OR 214 & Evergreen Rd

	4 NB							SB							EB							WB							Int Total		
	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total			
Existing (2022)	0	366	10	163	21	1	539	0	7	14	29	2	1	50	37	40	740	46	66	0	853	7	119	709	13	46	0	848	2,300		
In-Process #1								125							0							16								16	
In-Process #2								6							0							8								8	
In-Process #3								39							0							62								62	
In-Process #4								3							0							111								111	
In-Process #5								0							0							0								0	
Future (2024)	0	526	10	191	22	1	727	0	7	14	30	2	1	51	38	41	895	143	68	0	1,117	7	139	920	13	47	0	1,079	2,974		
Pass-By Trips								2							0							-2								-2	
New Trips								3							10							7								8	
Balance Check	0	531	10	195	22	1	736	0	7	14	30	2	1	51	38	41	893	143	68	0	1,115	7	150	919	13	47	0	1,089	2,991		
								64							307							1,102								1,518	
								40							193							0								73	
								to North							to South							to East								to West	

OR 214 & I-5 NB

	5 NB							SB							EB							WB							Int Total		
	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total	U	Left	Thru	Right	HV	Ped	App Total			
Existing (2022)	0	167	0	555	63	0	722	0	0	0	0	0	0	1	0	0	0	0	33	181	61	0	33	0	0	613	528	66	0	1,141	2,480
In-Process #1								6							0								33								33
In-Process #2								147							0								16								16
In-Process #3								9							0								8								8
In-Process #4								51							0								60								60
In-Process #5								0							0								9								9
Future (2024)	0	328	0	681	65	0	1,009	0	0	0	0	0	0	0	0	0	559	202	63	0	761	0	0	806	708	68	0	1,514	3,284		
Pass-By Trips								0							0								0								0
New Trips								6							0								9								9
Balance Check	0	328	0	687	65	0	1,015	0	0	0	0	0	0	0	0	0	568	202	63	0	770	0	0	808	710	68	0	1,518	3,303		

Volume Development - PM (2024)

Stacy Allison Way & Harvard Dr

	1 NB								SB								EB								WB							
	U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total	Int Total
Existing (2022)	0	5	0	74	3	8	79	0	0	0	0	0	2	0	0	0	174	3	1	1	177	0	147	229	0	9	0	376	632			
In-Process #1							0							0			25				25			40				40	40			
In-Process #2							0							0							0							0	0			
In-Process #3							0							0							0							0	0			
In-Process #4							0							0							0							0	0			
In-Process #5							0							0							0							0	0			
Future (2024)	0	5	0	76	3	8	81	0	0	0	0	0	2	0	0	0	204	3	1	1	207	0	151	275	0	9	0	426	714			
Pass-By Trips							0							0							0							0	0			
New Trips			1				1			38	2			40							0				21			21	62			
Balance Check	0	5	1	76	3	8	82	0	48	2	0	0	2	50	0	0	204	3	1	1	207	0	151	275	30	9	0	456	795			
							31							156							328							280				
							to North							to South							to East							to West				

Evergreen Rd & Harvard Dr

	2 NB								SB								EB								WB							
	U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total	Int Total
Existing (2022)	0	5	33	79	0	2	117	0	8	80	43	2	3	131	0	15	153	32	4	5	200	0	45	129	7	1	5	181	629			
In-Process #1							0							0			71				71			110				110	181			
In-Process #2							0							0			2				2			1				1	3			
In-Process #3							0							0			25				25			88				88	113			
In-Process #4							0							0							0							0	0			
In-Process #5							0							0							0							0	0			
Future (2024)	0	5	34	81	0	2	120	0	8	82	44	2	3	134	0	15	255	33	4	5	303	0	46	332	7	1	5	385	942			
Pass-By Trips							0							0							0							0	0			
New Trips							0			2				3			1				1							0	3			
Balance Check	0	5	34	81	0	2	120	0	8	82	46	2	3	136	0	16	255	33	4	5	304	0	46	332	7	1	5	385	945			
							-529							-20							344							383				
							to North							to South							to East							to West				

Stacy Allison Way & Evergreen Rd

	3 NB								SB								EB								WB							
	U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total	Int Total
Existing (2022)	0	37	271	0	4	2	308	0	0	205	93	3	1	298	0	215	0	52	5	2	267	0	0	0	0	0	2	0	673			
In-Process #1			66				66			102	24			126			15				1148			110				110	2049			
In-Process #2			2				2			1				1							0							0	3			
In-Process #3			22				22			81				81							0							0	103			
In-Process #4							0							0							0							0	0			
In-Process #5							0							0							0							0	0			
Future (2024)	0	38	369	0	4	2	407	0	0	395	120	3	1	515	0	236	0	53	5	2	289	0	0	0	0	0	2	0	1,211			
Pass-By Trips							0			4				4			10				10							0	14			
New Trips			2				2			8				8			34				38							0	48			
Balance Check	0	40	369	0	4	2	409	0	0	395	132	3	1	527	0	280	0	57	5	2	337	0	0	0	0	0	2	0	1,273			
							649							365							0							172				
							to North							to South							to East							to West				

OR 214 & Evergreen Rd

	4 NB								SB								EB								WB							
	U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total	Int Total
Existing (2022)	0	379	24	190	11	4	593	0	31	34	82	4	4	147	0	35	96	880	137	33	3	1,148	0	19	224	804	14	28	4	1,061	2,949	
In-Process #1							81							0				10			104			31				31	216			
In-Process #2							2							0				13			14			19				19	35			
In-Process #3							22							0				77			77			4				4	103			
In-Process #4							1							0				79			79			-8	83			75	155			
In-Process #5							0							0				0			0			0				0	0			
Future (2024)	0	483	25	208	11	4	716	0	32	35	84	4	4	151	0	36	99	1,007	313	34	3	1,455	0	20	257	929	14	29	4	1,220	3,542	
Pass-By Trips							10							0				-5			0			4	-4			0	5			
New Trips							34							8							0			8				8	42			
Balance Check	0	508	25	227	11	4	760	0	32	35	84	4	4	151	0	36	99	1,002	313	34	3	1,450	0	20	269	925	14	29	4	1,228	3,589	
							138							617							1,281							1,553				
							to North							to South							to East							to West				

OR 214 & I-5 NB

	5 NB								SB								EB								WB							
	U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total	Int Total
Existing (2022)	0	170	0	459	22	5	629	0	0	0	0	0	7	0	0	0	0	94	184	33	0	1,153	0	0	0	1,011	289	39	1	1,300	3,082	
In-Process #1							16							0				14			30			21				21	88			
In-Process #2							37							0				11			17			4				4	103			
In-Process #3							77							0				41			41			-8	83			75	155			
In-Process #4							38							0				0			0			0				0	0			
In-Process #5							0							0				0			0			0				0	0			
Future (2024)	0	223	0	592	23	5	815	0	0	0	0	0	5	0	0	0	1,157	211	34	0	1,368	0	0	1,125	407	40	1	1,532	3,715			
Pass-By Trips							0							0				7			0			12				12	31			
New Trips							4							0							0			8				8	42			
Balance Check	0	223	0	596	23	5	819	0	0	0	0	0	5	0	0	0	1,164	211	34	0	1,375	0	0	1,137	415	40	1	1,552	3,746			
							415							211							1,760							1,360				
							to North							to South							to East							to West				

OR 214 & I-5 SB

	6 NB								SB								EB								WB							
	U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left	Thru	Right	HV	Ped	App Total		U	Left						

Appendix F: Volume to Capacity Worksheets

AM

OR 214 & Evergreen Rd

	Critical #1		Critical #2		Critical #3		Critical #4		Ratio Sum	Lost Time	Cycle	v/c	
	Movement	Flow Sat	Movement	Flow Sat	Movement	Flow Sat	Movement	Flow Sat					
2022 Existing	EBT	763	3118 WBL	123	1555 NBL	384	3229 SBT	14	1695	0.45099	17.5	100	0.546654
2024 Background	EBT	923	3118 WBL	143	1555 NBL	549	3229 SBT	14	1695	0.566266	17.5	100	0.686383
2024 Background + Build	EBT	921	3118 WBL	155	1555 NBL	554	3229 SBT	14	1695	0.57489	17.5	100	0.696836

OR 214 & I-5 NB

	Critical #1		Critical #2		Ratio Sum	Lost Time	Cycle	v/c	
	Movement	Flow Sat	Movement	Flow Sat					
2022 Existing	WBT	639	3158 NBL	116	1364	0.287387	9.9	100	0.318965
2024 Background	WBT	840	3158 NBL	228	1364	0.433147	9.9	100	0.48074
2024 Background + Build	WBT	842	3158 NBL	228	1364	0.43378	9.9	100	0.481443

OR 214 & I-5 SB

	Critical #1		Critical #2		Critical #3		Critical #4		Ratio Sum	Lost Time	Cycle	v/c
	Movement	Flow Sat	Movement	Flow Sat	Movement	Flow Sat	Movement	Flow Sat				
2022 Existing	EBT	418	3051 SBL	219	2655				0.21949	9.0	100	0.241198
2024 Background	WBT	685	3425 SBL	315	2655				0.318644	9.0	100	0.350158
2024 Background + Build	WBT	686	3425 SBL	322	2655				0.321573	9.0	100	0.353376

OR 214 & Boones Ferry Rd/Settlemer Ave

	Critical #1		Critical #2		Critical #3		Critical #4		Ratio Sum	Lost Time	Cycle	v/c	
	Movement	Flow Sat	Movement	Flow Sat	Movement	Flow Sat	Movement	Flow Sat					
2022 Existing	EBT	494	1641 WBL	40	1498 NBL	360	1654 SBT	92	1723	0.598788	19	116.3	0.715714
2024 Background	EBT	551	1641 WBL	55	1498 NBL	396	1654 SBT	103	1723	0.671686	19	128.5	0.788234
2024 Background + Build	EBT	553	1641 WBL	55	1498 NBL	397	1654 SBT	103	1723	0.673509	19	129.1	0.789737

OR 214 & Evergreen Rd

2022 Existing
2024 Background
2024 Background + Build

PM

Critical #1		Critical #2		Critical #3		Critical #4		Ratio	Sum	Lost Time	Cycle	v/c
Movement	Sat	Movement	Sat	Movement	Sat	Movement	Sat					
EBT	936	3247 WBL	238	1581 NBL	422	3281 SBT	36	1709	0.588488	17.5	100	0.713319
EBT	1071	3247 WBL	273	1581 NBL	533	3281 SBT	37	1709	0.686619	17.5	100	0.832265
EBT	1066	3247 WBL	286	1581 NBL	559	3281 SBT	37	1709	0.701226	17.5	100	0.849971

OR 214 & I-5 NB

2022 Existing
2024 Background
2024 Background + Build

Critical #1		Critical #2		Ratio	Sum	Lost Time	Cycle	v/c
Movement	Sat	Movement	Sat					
WBT	1076	3237 NBL	121	1442	0.416318	9.9	100	0.462062
WBT	1197	3237 NBL	158	1442	0.479357	9.9	100	0.532028
WBT	1210	3237 NBL	158	1442	0.483373	9.9	100	0.536485

OR 214 & I-5 SB

2022 Existing
2024 Background
2024 Background + Build

Critical #1		Critical #2		Ratio	Sum	Lost Time	Cycle	v/c
Movement	Sat	Movement	Sat					
EBT	775	3211 SBL	520	2932	0.418711	9.0	100	0.460122
EBT	860	3211 SBL	678	2932	0.499071	9.0	100	0.548429
EBT	862	3211 SBL	683	2932	0.501399	9.0	100	0.550988

OR 214 & Boones Ferry Rd/Settlemer Ave

2022 Existing
2024 Background
2024 Background + Build

Critical #1		Critical #2		Critical #3		Critical #4		Ratio	Sum	Lost Time	Cycle	v/c
Movement	Sat	Movement	Sat	Movement	Sat	Movement	Sat					
EBL	93	1641 WBT	614	1709 NBL	283	1641 SBT	238	1723	0.726534	19	153.8	0.828939
EBL	101	1641 WBT	679	1709 NBL	298	1641 SBT	257	1723	0.789611	19	173.9	0.886465
EBL	105	1641 WBT	684	1709 NBL	299	1641 SBT	257	1723	0.795584	19	174.8	0.892606

Appendix G: Crash Data

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

EVERGREEN RD at HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2016 to 12/31/2020

39 - 42 of 58 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	SPCL USE	TRLR QTY	MOVE	A	S	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE					
INVEST	E	A	U	I	C	O	DIST	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE			
RD DPT	E	L	G	N	H	R	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE			
UNLOC?	D	C	S	V	L	K	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE	
												02	NONE	9		TURN-L													
												N/A				W -N									000	000		00	
												PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK		000	000		00		
03460	N	N	N			09/14/2018	14	EVERGREEN RD	INTER	CROSS	N	N	CLR	O-1	L-TURN	01	NONE	9										02	
CITY						FR		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		N/A									000			00	
N						1P			03	0		N	DAY	PDO		PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00
N						45 9 3.55	-122 52 32.54	014000100S00																					
												02	NONE	9		STRGHT													
												N/A				W -E									000	000		00	
												PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK		000	000		00		
05016	N	N	N	N	N	12/29/2018	14	EVERGREEN RD	INTER	CROSS	N	N	RAIN	O-1	L-TURN	01	NONE	9										02	
CITY						SA		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	WET	TURN		N/A									000			00	
N						5P			03	3		N	DLIT	PDO		PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00
N						45 9 3.52	-122 52 32.54	014000100S00																					
												02	NONE	9		TURN-L													
												N/A				E -S									000	000		00	
												PSNGR	CAR				01	DRVR	NONE	00	Unk	UNK		000	000		00		
00885	N	N	N			03/09/2019	14	EVERGREEN RD	INTER	CROSS	N	N	CLR	O-1	L-TURN	01	NONE	0										02	
CITY						SA		HILLSBORO-SILV HY	CN		FLASHBCN-A	N	DRY	TURN		RENTL									000			00	
N						12P			03	3		N	DAY	INJ		PSNGR	CAR			01	DRVR	INJC	23	M	OR-Y		000	000	00
N						45 9 3.52	-122 52 32.54	014000100S00																					
												01	NONE	0		STRGHT													
												RENTL			W -E										000	000		00	
												PSNGR	CAR				02	PSNG	INJC	22	F			000	000		00		
												01	NONE	0		STRGHT													
												RENTL			W -E										000	000		00	
												PSNGR	CAR				03	PSNG	INJC	48	F			000	000		00		
												01	NONE	0		STRGHT													
												RENTL			W -E										000	000		00	
												PSNGR	CAR				04	PSNG	INJC	50	M			000	000		00		
												02	NONE	0		TURN-L													
												PRVTE			E -S											000	000	00	
												PSNGR	CAR				01	DRVR	NONE	30	M	NONE		028,004	000		02		

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Appendix H: Traffic Operations Analysis Results

HCM 6th TWSC
1: Harvard Dr & Stacy Allison Way

06/27/2022

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	71	3	73	70	1	42
Future Vol, veh/h	71	3	73	70	1	42
Conflicting Peds, #/hr	0	3	3	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	5	8	8	12	12
Mvmt Flow	76	3	78	74	1	45

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	82	0	313 82
Stage 1	-	-	-	-	81 -
Stage 2	-	-	-	-	232 -
Critical Hdwy	-	-	4.18	-	6.52 6.32
Critical Hdwy Stg 1	-	-	-	-	5.52 -
Critical Hdwy Stg 2	-	-	-	-	5.52 -
Follow-up Hdwy	-	-	2.272	-	3.608 3.408
Pot Cap-1 Maneuver	-	-	1478	-	659 951
Stage 1	-	-	-	-	917 -
Stage 2	-	-	-	-	784 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1474	-	621 947
Mov Cap-2 Maneuver	-	-	-	-	645 -
Stage 1	-	-	-	-	914 -
Stage 2	-	-	-	-	741 -

Approach	EB	WB	NB
HCM Control Delay, s	0	3.9	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	937	-	-	1474	-
HCM Lane V/C Ratio	0.049	-	-	0.053	-
HCM Control Delay (s)	9	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

HCM 6th TWSC
2: Evergreen Rd & Harvard Dr

06/27/2022

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	4	144	6	28	27	4	6	30	102	2	53	8
Future Vol, veh/h	4	144	6	28	27	4	6	30	102	2	53	8
Conflicting Peds, #/hr	1	0	4	4	0	1	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	5	5	5	1	1	1	7	7	7
Mvmt Flow	4	157	7	30	29	4	7	33	111	2	58	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	168	0	0	302	267	166	334	268	36
Stage 1	-	-	-	-	-	-	173	173	-	92	92	-
Stage 2	-	-	-	-	-	-	129	94	-	242	176	-
Critical Hdwy	4.12	-	-	4.15	-	-	7.11	6.51	6.21	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.17	5.57	-
Follow-up Hdwy	2.218	-	-	2.245	-	-	3.509	4.009	3.309	3.563	4.063	3.363
Pot Cap-1 Maneuver	1578	-	-	1392	-	-	652	641	881	610	630	1022
Stage 1	-	-	-	-	-	-	831	758	-	903	809	-
Stage 2	-	-	-	-	-	-	877	819	-	750	744	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1576	-	-	1387	-	-	584	622	877	501	611	1017
Mov Cap-2 Maneuver	-	-	-	-	-	-	584	622	-	501	611	-
Stage 1	-	-	-	-	-	-	826	753	-	900	790	-
Stage 2	-	-	-	-	-	-	786	800	-	625	739	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			3.6			10.6			11.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	789	1576	-	-	1387	-	-	639
HCM Lane V/C Ratio	0.19	0.003	-	-	0.022	-	-	0.107
HCM Control Delay (s)	10.6	7.3	-	-	7.7	-	-	11.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.4

HCM 6th TWSC
3: Evergreen Rd & Stacy Allison Way

06/27/2022

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↗
Traffic Vol, veh/h	97	12	9	338	73	41
Future Vol, veh/h	97	12	9	338	73	41
Conflicting Peds, #/hr	2	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	103	13	10	360	78	44

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	483	102	123	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	534	940	1464	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	529	938	1463	-	-	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1463	-	580	938	-	-
HCM Lane V/C Ratio	0.007	-	0.178	0.014	-	-
HCM Control Delay (s)	7.5	-	12.5	8.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.6	0	-	-

HCM 6th Signalized Intersection Summary

4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕	↗		↔	↕		↖	↕	↗	↘
Traffic Volume (veh/h)	37	40	740	46	7	119	709	13	366	10	163	7
Future Volume (veh/h)	37	40	740	46	7	119	709	13	366	10	163	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		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		
Adj Sat Flow, veh/h/ln		1641	1641	1641		1633	1633	1633	1695	1695	1695	1695
Adj Flow Rate, veh/h		41	763	0		123	731	13	384	0	0	7
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		8	8	8		5	5	5	4	4	4	4
Cap, veh/h		50	849			569	1908	34	482	0		52
Arrive On Green		0.02	0.18	0.00		0.37	0.61	0.61	0.15	0.00	0.00	0.03
Sat Flow, veh/h		1563	3118	1391		1555	3119	55	3229	0	1437	1615
Grp Volume(v), veh/h		41	763	0		123	364	380	384	0	0	7
Grp Sat Flow(s),veh/h/ln		1563	1559	1391		1555	1551	1623	1615	0	1437	1615
Q Serve(g_s), s		2.6	23.9	0.0		5.4	11.9	11.9	11.5	0.0	0.0	0.4
Cycle Q Clear(g_c), s		2.6	23.9	0.0		5.4	11.9	11.9	11.5	0.0	0.0	0.4
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		50	849			569	949	993	482	0		52
V/C Ratio(X)		0.83	0.90			0.22	0.38	0.38	0.80	0.00		0.13
Avail Cap(c_a), veh/h		250	857			569	949	993	759	0		218
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		48.7	39.5	0.0		21.8	9.8	9.8	41.1	0.0	0.0	47.0
Incr Delay (d2), s/veh		21.7	14.3	0.0		0.1	1.0	1.0	2.4	0.0	0.0	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.3	11.2	0.0		2.0	4.0	4.2	4.7	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		70.3	53.8	0.0		22.0	10.9	10.8	43.5	0.0	0.0	47.9
LnGrp LOS		E	D			C	B	B	D	A		D
Approach Vol, veh/h			804	A			867			384	A	
Approach Delay, s/veh			54.7				12.4			43.5		
Approach LOS			D				B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.1	31.7		7.7	7.2	65.7		19.4				
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.0	* 28		13.5	16.0	29.5		23.5				
Max Q Clear Time (g_c+I1), s	7.4	25.9		2.8	4.6	13.9		13.5				
Green Ext Time (p_c), s	0.3	1.3		0.0	0.1	10.6		1.3				

Intersection Summary

HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	SBT	SBR
Lane Configurations	↑	↑
Traffic Volume (veh/h)	14	29
Future Volume (veh/h)	14	29
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1695	1695
Adj Flow Rate, veh/h	14	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	4	4
Cap, veh/h	55	
Arrive On Green	0.03	0.00
Sat Flow, veh/h	1695	1437
Grp Volume(v), veh/h	14	0
Grp Sat Flow(s),veh/h/ln	1695	1437
Q Serve(g_s), s	0.8	0.0
Cycle Q Clear(g_c), s	0.8	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	55	
V/C Ratio(X)	0.25	
Avail Cap(c_a), veh/h	229	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	47.2	0.0
Incr Delay (d2), s/veh	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	49.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	21	A
Approach Delay, s/veh	48.6	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM 6th Signalized Intersection Summary
 5: I-5 NB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	436	181	0	613	528	167	0	555	0	0	0
Future Volume (veh/h)	0	436	181	0	613	528	167	0	555	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1757	1757	0	1619	1619	1432	1555	1432			
Adj Flow Rate, veh/h	0	454	0	0	639	0	116	0	640			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	10	10	0	6	6	9	0	9			
Cap, veh/h	0	2027		0	1869		400	0	712			
Arrive On Green	0.00	1.00	0.00	0.00	0.61	0.00	0.29	0.00	0.29			
Sat Flow, veh/h	0	3425	1489	0	3158	1372	1364	0	2424			
Grp Volume(v), veh/h	0	454	0	0	639	0	116	0	640			
Grp Sat Flow(s),veh/h/ln	0	1669	1489	0	1538	1372	1364	0	1212			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	10.3	0.0	6.6	0.0	25.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	10.3	0.0	6.6	0.0	25.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2027		0	1869		400	0	712			
V/C Ratio(X)	0.00	0.22		0.00	0.34		0.29	0.00	0.90			
Avail Cap(c_a), veh/h	0	2027		0	1869		472	0	839			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	9.7	0.0	27.3	0.0	33.9			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.5	0.0	0.3	0.0	10.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	3.4	0.0	2.2	0.0	8.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	10.2	0.0	27.6	0.0	44.8			
LnGrp LOS	A	A		A	B		C	A	D			
Approach Vol, veh/h		454	A		639	A		756				
Approach Delay, s/veh		0.2			10.2			42.2				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		65.2				65.2		34.8				
Change Period (Y+Rc), s		4.5				4.5		5.4				
Max Green Setting (Gmax), s		55.5				55.5		34.6				
Max Q Clear Time (g_c+11), s		2.0				12.3		27.3				
Green Ext Time (p_c), s		8.5				18.1		2.0				

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 6: I-5 SB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	405	143	0	388	392	0	0	0	212	0	132
Future Volume (veh/h)	0	405	143	0	388	392	0	0	0	212	0	132
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1565	1565	0	1757	1757				1437	0	1437
Adj Flow Rate, veh/h	0	418	0	0	400	0				219	0	136
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	10	10	0	10	10				13	0	13
Cap, veh/h	0	2296		0	2578					365	0	168
Arrive On Green	0.00	0.77	0.00	0.00	1.00	0.00				0.14	0.00	0.14
Sat Flow, veh/h	0	3051	1326	0	3425	1489				2655	0	1218
Grp Volume(v), veh/h	0	418	0	0	400	0				219	0	136
Grp Sat Flow(s),veh/h/ln	0	1486	1326	0	1669	1489				1327	0	1218
Q Serve(g_s), s	0.0	3.7	0.0	0.0	0.0	0.0				7.8	0.0	10.8
Cycle Q Clear(g_c), s	0.0	3.7	0.0	0.0	0.0	0.0				7.8	0.0	10.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2296		0	2578					365	0	168
V/C Ratio(X)	0.00	0.18		0.00	0.16					0.60	0.00	0.81
Avail Cap(c_a), veh/h	0	2296		0	2578					942	0	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.0	0.0	0.0	0.0	0.0				40.5	0.0	41.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				1.2	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	0.0	0.0				2.6	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.2	0.0	0.0	0.1	0.0				41.7	0.0	48.7
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		418	A		400	A					355	
Approach Delay, s/veh		3.2			0.1						44.4	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		81.7		18.3		81.7						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		55.5						
Max Q Clear Time (g_c+I1), s		5.7		12.8		2.0						
Green Ext Time (p_c), s		11.7		0.9		7.3						

Intersection Summary

HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary

7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	474	212	38	337	49	346	147	55	42	88	75
Future Volume (veh/h)	107	474	212	38	337	49	346	147	55	42	88	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
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	1641	1641	1641	1573	1573	1573	1736	1736	1736	1723	1723	1723
Adj Flow Rate, veh/h	111	494	221	40	351	51	360	153	57	44	92	78
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	8	8	8	13	13	13	1	1	1	2	2	2
Cap, veh/h	138	693	923	51	578	488	401	549	460	58	188	153
Arrive On Green	0.09	0.42	0.42	0.03	0.37	0.37	0.24	0.32	0.32	0.04	0.11	0.11
Sat Flow, veh/h	1563	1641	1387	1498	1573	1329	1654	1736	1453	1641	1723	1406
Grp Volume(v), veh/h	111	494	221	40	351	51	360	153	57	44	92	78
Grp Sat Flow(s),veh/h/ln	1563	1641	1387	1498	1573	1329	1654	1736	1453	1641	1723	1406
Q Serve(g_s), s	6.9	24.6	6.3	2.6	18.0	2.5	20.8	6.5	2.8	2.6	5.0	5.2
Cycle Q Clear(g_c), s	6.9	24.6	6.3	2.6	18.0	2.5	20.8	6.5	2.8	2.6	5.0	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	693	923	51	578	488	401	549	460	58	188	153
V/C Ratio(X)	0.80	0.71	0.24	0.79	0.61	0.10	0.90	0.28	0.12	0.76	0.49	0.51
Avail Cap(c_a), veh/h	395	1080	1250	379	1035	874	586	549	460	415	523	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	23.6	6.6	47.4	25.5	20.6	36.2	25.3	24.0	47.2	41.4	41.5
Incr Delay (d2), s/veh	7.8	2.7	0.3	18.2	2.0	0.2	11.1	0.2	0.1	13.7	1.5	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	9.5	1.7	1.2	6.8	0.8	9.4	2.7	0.9	1.3	2.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	26.3	6.9	65.6	27.5	20.7	47.3	25.5	24.1	60.9	42.9	43.4
LnGrp LOS	D	C	A	E	C	C	D	C	C	E	D	D
Approach Vol, veh/h	826			442			570			214		
Approach Delay, s/veh	24.5			30.1			39.1			46.8		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	46.7	28.5	15.8	13.2	41.3	8.0	36.3				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	25.0	65.0	35.0	30.0	25.0	65.0	25.0	30.0				
Max Q Clear Time (g_c+1), s	14.6	26.6	22.8	7.2	8.9	20.0	4.6	8.5				
Green Ext Time (p_c), s	0.1	15.1	1.2	1.5	0.3	8.6	0.1	1.6				

Intersection Summary

HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

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

HCM 6th TWSC
1: Harvard Dr & Stacy Allison Way

06/27/2022

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	174	3	147	229	5	74
Future Vol, veh/h	174	3	147	229	5	74
Conflicting Peds, #/hr	0	8	8	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	183	3	155	241	5	78

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	194	0	745
Stage 1	-	-	-	-	193
Stage 2	-	-	-	-	552
Critical Hdwy	-	-	4.12	-	6.44
Critical Hdwy Stg 1	-	-	-	-	5.44
Critical Hdwy Stg 2	-	-	-	-	5.44
Follow-up Hdwy	-	-	2.218	-	3.536
Pot Cap-1 Maneuver	-	-	1379	-	379
Stage 1	-	-	-	-	835
Stage 2	-	-	-	-	573
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1368	-	333
Mov Cap-2 Maneuver	-	-	-	-	422
Stage 1	-	-	-	-	828
Stage 2	-	-	-	-	508

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	788	-	-	1368	-
HCM Lane V/C Ratio	0.106	-	-	0.113	-
HCM Control Delay (s)	10.1	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.4	-

HCM 6th TWSC
2: Evergreen Rd & Harvard Dr

06/27/2022

Intersection

Int Delay, s/veh 5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	15	153	32	45	129	7	5	33	79	8	80	43
Future Vol, veh/h	15	153	32	45	129	7	5	33	79	8	80	43
Conflicting Peds, #/hr	1	0	2	2	0	1	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	1	1	1	0	0	0	2	2	2
Mvmt Flow	16	161	34	47	136	7	5	35	83	8	84	45

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	144	0	0	197
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.11
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.209
Pot Cap-1 Maneuver	1438	-	-	1382
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1437	-	-	1379
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.9	11.5	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	676	1437	-	-	1379	-	-	552
HCM Lane V/C Ratio	0.182	0.011	-	-	0.034	-	-	0.25
HCM Control Delay (s)	11.5	7.5	-	-	7.7	-	-	13.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	1

HCM 6th TWSC
3: Evergreen Rd & Stacy Allison Way

06/27/2022

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↗
Traffic Vol, veh/h	215	52	37	271	205	93
Future Vol, veh/h	215	52	37	271	205	93
Conflicting Peds, #/hr	1	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	229	55	39	288	218	99

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	637	272	319	0	-	0
Stage 1	270	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	441	767	1247	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	426	764	1245	-	-	-
Mov Cap-2 Maneuver	524	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1245	-	524	764	-	-
HCM Lane V/C Ratio	0.032	-	0.436	0.072	-	-
HCM Control Delay (s)	8	-	17.1	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2.2	0.2	-	-

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕	↗		↔	↕		↖	↕	↗	↘
Traffic Volume (veh/h)	35	96	880	137	19	224	804	14	379	24	190	31
Future Volume (veh/h)	35	96	880	137	19	224	804	14	379	24	190	31
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		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		
Adj Sat Flow, veh/h/ln		1709	1709	1709		1660	1660	1660	1723	1723	1723	1709
Adj Flow Rate, veh/h		102	936	0		238	855	15	422	0	0	33
Peak Hour Factor		0.94	0.94	0.94		0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %		3	3	3		3	3	3	2	2	2	3
Cap, veh/h		129	893			505	1650	29	531	0		104
Arrive On Green		0.03	0.09	0.00		0.32	0.52	0.52	0.16	0.00	0.00	0.06
Sat Flow, veh/h		1628	3247	1448		1581	3172	56	3281	0	1460	1628
Grp Volume(v), veh/h		102	936	0		238	425	445	422	0	0	33
Grp Sat Flow(s),veh/h/ln		1628	1624	1448		1581	1577	1650	1641	0	1460	1628
Q Serve(g_s), s		6.2	27.5	0.0		12.1	17.7	17.7	12.4	0.0	0.0	1.9
Cycle Q Clear(g_c), s		6.2	27.5	0.0		12.1	17.7	17.7	12.4	0.0	0.0	1.9
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		129	893			505	821	858	531	0		104
V/C Ratio(X)		0.79	1.05			0.47	0.52	0.52	0.79	0.00		0.32
Avail Cap(c_a), veh/h		260	893			505	821	858	771	0		220
HCM Platoon Ratio		0.33	0.33	0.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		47.9	45.5	0.0		27.3	15.8	15.8	40.3	0.0	0.0	44.7
Incr Delay (d2), s/veh		7.9	43.5	0.0		0.5	2.1	2.0	3.0	0.0	0.0	1.3
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
%ile BackOfQ(50%),veh/ln		2.9	17.3	0.0		4.6	6.5	6.8	5.2	0.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		55.8	89.0	0.0		27.8	17.8	17.7	43.3	0.0	0.0	46.0
LnGrp LOS		E	F			C	B	B	D	A		D
Approach Vol, veh/h			1038	A			1108			422	A	
Approach Delay, s/veh			85.7				19.9			43.3		
Approach LOS			F				B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.4	32.0		10.9	11.9	56.5		20.7				
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.0	* 28		13.5	16.0	29.5		23.5				
Max Q Clear Time (g_c+I1), s	14.1	29.5		4.0	8.2	19.7		14.4				
Green Ext Time (p_c), s	0.3	0.0		0.2	0.2	7.8		1.4				

Intersection Summary

HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	SBT	SBR
Lane Configurations	↑	↑
Traffic Volume (veh/h)	34	82
Future Volume (veh/h)	34	82
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	36	0
Peak Hour Factor	0.94	0.94
Percent Heavy Veh, %	3	3
Cap, veh/h	109	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1709	1448
Grp Volume(v), veh/h	36	0
Grp Sat Flow(s),veh/h/ln	1709	1448
Q Serve(g_s), s	2.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	109	
V/C Ratio(X)	0.33	
Avail Cap(c_a), veh/h	231	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.8	0.0
Incr Delay (d2), s/veh	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.1	0.0
LnGrp LOS	D	
Approach Vol, veh/h	69	A
Approach Delay, s/veh	46.0	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM 6th Signalized Intersection Summary
 5: I-5 NB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	969	184	0	1011	289	170	0	459	0	0	0
Future Volume (veh/h)	0	969	184	0	1011	289	170	0	459	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1853	1853	0	1660	1660	1514	1514	1514			
Adj Flow Rate, veh/h	0	1031	0	0	1076	0	121	0	553			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	3	3			
Cap, veh/h	0	2291		0	2052		361	0	642			
Arrive On Green	0.00	1.00	0.00	0.00	0.65	0.00	0.25	0.00	0.25			
Sat Flow, veh/h	0	3614	1571	0	3237	1407	1442	0	2563			
Grp Volume(v), veh/h	0	1031	0	0	1076	0	121	0	553			
Grp Sat Flow(s),veh/h/ln	0	1761	1571	0	1577	1407	1442	0	1281			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	18.1	0.0	6.9	0.0	20.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	18.1	0.0	6.9	0.0	20.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2291		0	2052		361	0	642			
V/C Ratio(X)	0.00	0.45		0.00	0.52		0.34	0.00	0.86			
Avail Cap(c_a), veh/h	0	2291		0	2052		499	0	887			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.84	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	9.3	0.0	30.7	0.0	35.8			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	1.0	0.0	0.4	0.0	5.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	5.8	0.0	2.4	0.0	6.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	10.2	0.0	31.1	0.0	41.7			
LnGrp LOS	A	A		A	B		C	A	D			
Approach Vol, veh/h		1031	A		1076	A		674				
Approach Delay, s/veh		0.5			10.2			39.8				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		69.5				69.5		30.5				
Change Period (Y+Rc), s		4.5				4.5		5.4				
Max Green Setting (Gmax), s		55.5				55.5		34.6				
Max Q Clear Time (g_c+I1), s		2.0				20.1		22.6				
Green Ext Time (p_c), s		24.6				26.7		2.3				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 6: I-5 SB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	690	405	0	583	598	0	0	0	463	0	271
Future Volume (veh/h)	0	690	405	0	583	598	0	0	0	463	0	271
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1647	1647	0	1853	1853				1587	0	1587
Adj Flow Rate, veh/h	0	775	0	0	655	0				520	0	304
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	4	4	0	3	3				2	0	2
Cap, veh/h	0	2043		0	2300					753	0	345
Arrive On Green	0.00	0.65	0.00	0.00	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3211	1395	0	3614	1571				2932	0	1345
Grp Volume(v), veh/h	0	775	0	0	655	0				520	0	304
Grp Sat Flow(s),veh/h/ln	0	1564	1395	0	1761	1571				1466	0	1345
Q Serve(g_s), s	0.0	11.4	0.0	0.0	0.0	0.0				16.0	0.0	21.7
Cycle Q Clear(g_c), s	0.0	11.4	0.0	0.0	0.0	0.0				16.0	0.0	21.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2043		0	2300					753	0	345
V/C Ratio(X)	0.00	0.38		0.00	0.28					0.69	0.00	0.88
Avail Cap(c_a), veh/h	0	2043		0	2300					1041	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.0	0.0	0.0	0.0	0.0				33.6	0.0	35.7
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.3	0.0				0.8	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	0.0	0.1	0.0				5.7	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.5	0.0	0.0	0.3	0.0				34.4	0.0	47.8
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		775	A		655	A					824	
Approach Delay, s/veh		8.5			0.3						39.4	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		69.8		30.2		69.8						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		55.5						
Max Q Clear Time (g_c+I1), s		13.4		23.7		2.0						
Green Ext Time (p_c), s		22.1		2.0		13.3						

Intersection Summary

HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary

7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	529	366	101	608	61	280	122	65	126	236	141
Future Volume (veh/h)	92	529	366	101	608	61	280	122	65	126	236	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1709	1709	1709	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	93	534	370	102	614	62	283	123	66	127	238	142
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	115	735	894	124	740	623	310	460	386	151	293	245
Arrive On Green	0.07	0.43	0.43	0.08	0.43	0.43	0.19	0.27	0.27	0.09	0.17	0.17
Sat Flow, veh/h	1641	1723	1450	1628	1709	1438	1641	1723	1446	1641	1723	1438
Grp Volume(v), veh/h	93	534	370	102	614	62	283	123	66	127	238	142
Grp Sat Flow(s),veh/h/ln	1641	1723	1450	1628	1709	1438	1641	1723	1446	1641	1723	1438
Q Serve(g_s), s	7.7	35.5	18.2	8.5	43.9	3.5	23.3	7.8	4.8	10.5	18.3	12.5
Cycle Q Clear(g_c), s	7.7	35.5	18.2	8.5	43.9	3.5	23.3	7.8	4.8	10.5	18.3	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	735	894	124	740	623	310	460	386	151	293	245
V/C Ratio(X)	0.81	0.73	0.41	0.82	0.83	0.10	0.91	0.27	0.17	0.84	0.81	0.58
Avail Cap(c_a), veh/h	297	937	1064	295	929	782	416	460	386	297	437	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.2	32.9	13.7	62.7	34.6	23.2	54.8	39.9	38.8	61.6	55.1	52.7
Incr Delay (d2), s/veh	9.6	3.2	0.6	9.4	6.6	0.1	18.9	0.2	0.2	8.9	5.8	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	15.3	5.9	3.8	19.2	1.2	11.2	3.3	1.7	4.7	8.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	36.1	14.3	72.2	41.2	23.3	73.7	40.1	39.0	70.5	60.9	54.3
LnGrp LOS	E	D	B	E	D	C	E	D	D	E	E	D
Approach Vol, veh/h		997			778			472			507	
Approach Delay, s/veh		31.4			43.9			60.1			61.5	
Approach LOS		C			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	63.8	30.6	28.5	14.2	64.7	17.2	41.8				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	25.0	75.0	35.0	35.0	25.0	75.0	25.0	35.0				
Max Q Clear Time (g_c+110), s	110.5	37.5	25.3	20.3	9.7	45.9	12.5	9.8				
Green Ext Time (p_c), s	0.2	18.9	0.8	3.1	0.2	13.9	0.3	1.5				

Intersection Summary

HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

Notes

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

HCM 6th TWSC
1: Harvard Dr & Stacy Allison Way

06/27/2022

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Vol, veh/h	112	3	75	86	1	43
Future Vol, veh/h	112	3	75	86	1	43
Conflicting Peds, #/hr	0	3	3	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	5	8	8	12	12
Mvmt Flow	119	3	80	91	1	46

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	125
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.18
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.272
Pot Cap-1 Maneuver	-	-	1425
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1421
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	887	-	-	1421	-
HCM Lane V/C Ratio	0.053	-	-	0.056	-
HCM Control Delay (s)	9.3	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

HCM 6th TWSC
2: Evergreen Rd & Harvard Dr

06/27/2022

Intersection

Int Delay, s/veh 4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	4	310	6	29	141	4	6	31	105	2	54	8
Future Vol, veh/h	4	310	6	29	141	4	6	31	105	2	54	8
Conflicting Peds, #/hr	1	0	4	4	0	1	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	5	5	5	1	1	1	7	7	7
Mvmt Flow	4	337	7	32	153	4	7	34	114	2	59	9

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	158	0	0	348
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.15
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.245
Pot Cap-1 Maneuver	1422	-	-	1194
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %		-	-	-
Mov Cap-1 Maneuver	1421	-	-	1189
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	13.3	15
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	585	1421	-	-	1189	-	-	429
HCM Lane V/C Ratio	0.264	0.003	-	-	0.027	-	-	0.162
HCM Control Delay (s)	13.3	7.5	-	-	8.1	-	-	15
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	0.6

HCM 6th TWSC
 3: Evergreen Rd & Stacy Allison Way

06/27/2022

Intersection

Int Delay, s/veh 2.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	↘	↗	↘	↗	↗	↗
Traffic Vol, veh/h	123	12	9	496	180	50
Future Vol, veh/h	123	12	9	496	180	50
Conflicting Peds, #/hr	2	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	131	13	10	528	191	53

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	769	220	245	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	362	807	1321	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	358	805	1320	-	-	-
Mov Cap-2 Maneuver	456	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	567	-	-	-	-	-

Approach EB NB SB

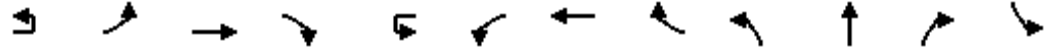
HCM Control Delay, s	15.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1320	-	456	805	-	-
HCM Lane V/C Ratio	0.007	-	0.287	0.016	-	-
HCM Control Delay (s)	7.7	-	16	9.5	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	1.2	0	-	-

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕	↗		↔	↕		↖	↕	↗	↘
Traffic Volume (veh/h)	38	41	895	143	7	139	920	13	526	10	191	7
Future Volume (veh/h)	38	41	895	143	7	139	920	13	526	10	191	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		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		
Adj Sat Flow, veh/h/ln		1641	1641	1641		1633	1633	1633	1695	1695	1695	1695
Adj Flow Rate, veh/h		42	923	0		143	948	13	549	0	0	7
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		8	8	8		5	5	5	4	4	4	4
Cap, veh/h		51	857			490	1762	24	638	0		52
Arrive On Green		0.01	0.09	0.00		0.31	0.56	0.56	0.20	0.00	0.00	0.03
Sat Flow, veh/h		1563	3118	1391		1555	3133	43	3229	0	1437	1615
Grp Volume(v), veh/h		42	923	0		143	469	492	549	0	0	7
Grp Sat Flow(s),veh/h/ln		1563	1559	1391		1555	1551	1625	1615	0	1437	1615
Q Serve(g_s), s		2.7	27.5	0.0		6.9	19.0	19.0	16.4	0.0	0.0	0.4
Cycle Q Clear(g_c), s		2.7	27.5	0.0		6.9	19.0	19.0	16.4	0.0	0.0	0.4
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		51	857			490	872	914	638	0		52
V/C Ratio(X)		0.82	1.08			0.29	0.54	0.54	0.86	0.00		0.13
Avail Cap(c_a), veh/h		250	857			490	872	914	759	0		218
HCM Platoon Ratio		0.33	0.33	0.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		49.2	45.5	0.0		25.8	13.7	13.7	38.8	0.0	0.0	47.0
Incr Delay (d2), s/veh		20.9	53.5	0.0		0.2	2.1	2.0	8.2	0.0	0.0	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.4	17.8	0.0		2.6	6.7	7.0	7.1	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		70.0	99.0	0.0		26.1	15.9	15.8	47.0	0.0	0.0	47.9
LnGrp LOS		E	F			C	B	B	D	A		D
Approach Vol, veh/h			965	A			1104			549	A	
Approach Delay, s/veh			97.7				17.1			47.0		
Approach LOS			F				B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	32.0		7.7	7.3	60.7		24.3				
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.0	* 28		13.5	16.0	29.5		23.5				
Max Q Clear Time (g_c+I1), s	8.9	29.5		2.8	4.7	21.0		18.4				
Green Ext Time (p_c), s	0.3	0.0		0.0	0.1	7.2		1.3				

Intersection Summary

HCM 6th Ctrl Delay	53.1
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	SBT	SBR
Lane Configurations	↑	↑
Traffic Volume (veh/h)	14	30
Future Volume (veh/h)	14	30
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1695	1695
Adj Flow Rate, veh/h	14	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	4	4
Cap, veh/h	55	
Arrive On Green	0.03	0.00
Sat Flow, veh/h	1695	1437
Grp Volume(v), veh/h	14	0
Grp Sat Flow(s),veh/h/ln	1695	1437
Q Serve(g_s), s	0.8	0.0
Cycle Q Clear(g_c), s	0.8	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	55	
V/C Ratio(X)	0.25	
Avail Cap(c_a), veh/h	229	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	47.2	0.0
Incr Delay (d2), s/veh	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	49.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	21	A
Approach Delay, s/veh	48.6	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM 6th Signalized Intersection Summary
 5: I-5 NB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	559	202	0	806	708	328	0	681	0	0	0
Future Volume (veh/h)	0	559	202	0	806	708	328	0	681	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1757	1757	0	1619	1619	1432	1555	1432			
Adj Flow Rate, veh/h	0	582	0	0	840	0	228	0	831			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	10	10	0	6	6	9	0	9			
Cap, veh/h	0	1852		0	1708		472	0	839			
Arrive On Green	0.00	1.00	0.00	0.00	0.56	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	3425	1489	0	3158	1372	1364	0	2425			
Grp Volume(v), veh/h	0	582	0	0	840	0	228	0	831			
Grp Sat Flow(s),veh/h/ln	0	1669	1489	0	1538	1372	1364	0	1212			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	16.7	0.0	13.1	0.0	34.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	16.7	0.0	13.1	0.0	34.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1852		0	1708		472	0	839			
V/C Ratio(X)	0.00	0.31		0.00	0.49		0.48	0.00	0.99			
Avail Cap(c_a), veh/h	0	1852		0	1708		472	0	839			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.92	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	13.6	0.0	25.7	0.0	32.5			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	1.0	0.0	0.6	0.0	28.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	5.7	0.0	4.3	0.0	13.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	14.6	0.0	26.2	0.0	61.2			
LnGrp LOS	A	A		A	B		C	A	E			
Approach Vol, veh/h		582	A		840	A		1059				
Approach Delay, s/veh		0.4			14.6			53.6				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		40.0				
Change Period (Y+Rc), s		4.5				4.5		5.4				
Max Green Setting (Gmax), s		55.5				55.5		34.6				
Max Q Clear Time (g_c+I1), s		2.0				18.7		36.1				
Green Ext Time (p_c), s		11.5				22.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 6: I-5 SB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↖↗		↗
Traffic Volume (veh/h)	0	455	223	0	664	470	0	0	0	306	0	262
Future Volume (veh/h)	0	455	223	0	664	470	0	0	0	306	0	262
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1565	1565	0	1757	1757				1437	0	1437
Adj Flow Rate, veh/h	0	469	0	0	685	0				315	0	270
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	10	10	0	10	10				13	0	13
Cap, veh/h	0	1968		0	2209					659	0	302
Arrive On Green	0.00	0.66	0.00	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3051	1326	0	3425	1489				2655	0	1218
Grp Volume(v), veh/h	0	469	0	0	685	0				315	0	270
Grp Sat Flow(s),veh/h/ln	0	1486	1326	0	1669	1489				1327	0	1218
Q Serve(g_s), s	0.0	6.3	0.0	0.0	0.0	0.0				10.1	0.0	21.4
Cycle Q Clear(g_c), s	0.0	6.3	0.0	0.0	0.0	0.0				10.1	0.0	21.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1968		0	2209					659	0	302
V/C Ratio(X)	0.00	0.24		0.00	0.31					0.48	0.00	0.89
Avail Cap(c_a), veh/h	0	1968		0	2209					942	0	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.82	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	0.0	0.0				32.1	0.0	36.3
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				0.4	0.0	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	0.0	0.0	0.1	0.0				3.3	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.1	0.0	0.0	0.3	0.0				32.5	0.0	50.6
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		469	A		685	A					585	
Approach Delay, s/veh		7.1			0.3						40.8	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		70.7		29.3		70.7						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		55.5						
Max Q Clear Time (g_c+I1), s		8.3		23.4		2.0						
Green Ext Time (p_c), s		13.1		1.4		14.2						

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary

7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑	↗	↘	↑	↗	↘	↑	↗
Traffic Volume (veh/h)	119	529	224	53	412	50	380	160	70	43	99	88
Future Volume (veh/h)	119	529	224	53	412	50	380	160	70	43	99	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
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	1641	1641	1641	1573	1573	1573	1736	1736	1736	1723	1723	1723
Adj Flow Rate, veh/h	124	551	233	55	429	52	396	167	73	45	103	92
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	8	8	8	13	13	13	1	1	1	2	2	2
Cap, veh/h	150	703	952	68	594	502	425	576	483	57	188	154
Arrive On Green	0.10	0.43	0.43	0.05	0.38	0.38	0.26	0.33	0.33	0.03	0.11	0.11
Sat Flow, veh/h	1563	1641	1387	1498	1573	1329	1654	1736	1454	1641	1723	1407
Grp Volume(v), veh/h	124	551	233	55	429	52	396	167	73	45	103	92
Grp Sat Flow(s),veh/h/ln	1563	1641	1387	1498	1573	1329	1654	1736	1454	1641	1723	1407
Q Serve(g_s), s	9.3	34.4	7.6	4.3	27.8	3.0	27.8	8.5	4.2	3.2	6.7	7.4
Cycle Q Clear(g_c), s	9.3	34.4	7.6	4.3	27.8	3.0	27.8	8.5	4.2	3.2	6.7	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	703	952	68	594	502	425	576	483	57	188	154
V/C Ratio(X)	0.83	0.78	0.24	0.81	0.72	0.10	0.93	0.29	0.15	0.79	0.55	0.60
Avail Cap(c_a), veh/h	329	897	1116	315	860	726	487	576	483	345	435	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	29.3	7.1	56.2	31.7	24.0	43.1	29.4	27.9	57.0	50.2	50.5
Incr Delay (d2), s/veh	8.4	4.9	0.3	15.2	3.2	0.2	22.6	0.2	0.1	16.3	1.8	2.8
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	4.0	14.1	2.1	1.9	10.8	1.0	13.8	3.5	1.5	1.6	3.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	34.2	7.3	71.5	34.9	24.1	65.8	29.6	28.0	73.3	52.0	53.2
LnGrp LOS	E	C	A	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		908			536			636			240	
Approach Delay, s/veh		31.0			37.6			51.9			56.5	
Approach LOS		C			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	55.9	35.1	18.0	15.9	49.9	8.6	44.5				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	25.0	65.0	35.0	30.0	25.0	65.0	25.0	30.0				
Max Q Clear Time (g_c+1), s	10.3	36.4	29.8	9.4	11.3	29.8	5.2	10.5				
Green Ext Time (p_c), s	0.1	14.5	0.8	1.7	0.3	10.0	0.1	1.8				

Intersection Summary

HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

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

HCM 6th TWSC
1: Harvard Dr & Stacy Allison Way

06/27/2022

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	204	3	151	275	5	76
Future Vol, veh/h	204	3	151	275	5	76
Conflicting Peds, #/hr	0	8	8	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	215	3	159	289	5	80

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	226	0	833 225
Stage 1	-	-	-	-	225 -
Stage 2	-	-	-	-	608 -
Critical Hdwy	-	-	4.12	-	6.44 6.24
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.218	-	3.536 3.336
Pot Cap-1 Maneuver	-	-	1342	-	336 809
Stage 1	-	-	-	-	808 -
Stage 2	-	-	-	-	540 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1332	-	293 803
Mov Cap-2 Maneuver	-	-	-	-	390 -
Stage 1	-	-	-	-	802 -
Stage 2	-	-	-	-	475 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	754	-	-	1332	-
HCM Lane V/C Ratio	0.113	-	-	0.119	-
HCM Control Delay (s)	10.4	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.4	-

HCM 6th TWSC
2: Evergreen Rd & Harvard Dr

06/27/2022

Intersection

Int Delay, s/veh 5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	15	255	33	46	332	7	5	34	81	8	82	44
Future Vol, veh/h	15	255	33	46	332	7	5	34	81	8	82	44
Conflicting Peds, #/hr	1	0	2	2	0	1	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	1	1	1	0	0	0	2	2	2
Mvmt Flow	16	268	35	48	349	7	5	36	85	8	86	46

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	357	0	0	305
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.11
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.209
Pot Cap-1 Maneuver	1202	-	-	1262
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1201	-	-	1260
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1	14.7	20.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	498	1201	-	-	1260	-	-	365
HCM Lane V/C Ratio	0.254	0.013	-	-	0.038	-	-	0.386
HCM Control Delay (s)	14.7	8	-	-	8	-	-	20.9
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	1.8

HCM 6th TWSC
3: Evergreen Rd & Stacy Allison Way

06/27/2022

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	
Traffic Vol, veh/h	236	53	38	369	395	120
Future Vol, veh/h	236	53	38	369	395	120
Conflicting Peds, #/hr	1	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	251	56	40	393	420	128

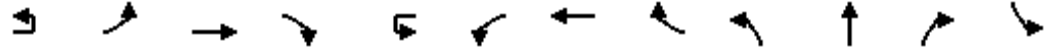
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	960	488	550	0	-	0
Stage 1	486	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	285	580	1025	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	273	578	1023	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.8	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1023	-	402	578	-	-
HCM Lane V/C Ratio	0.04	-	0.625	0.098	-	-
HCM Control Delay (s)	8.7	-	27.7	11.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.1	0.3	-	-

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕	↗		↔	↕	↗	↖	↕	↗	↖
Traffic Volume (veh/h)	36	99	1007	313	20	257	929	14	483	25	208	32
Future Volume (veh/h)	36	99	1007	313	20	257	929	14	483	25	208	32
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		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		
Adj Sat Flow, veh/h/ln		1709	1709	1709		1660	1660	1660	1723	1723	1723	1709
Adj Flow Rate, veh/h		105	1071	0		273	988	15	533	0	0	34
Peak Hour Factor		0.94	0.94	0.94		0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %		3	3	3		3	3	3	2	2	2	3
Cap, veh/h		132	893			455	1548	23	632	0		105
Arrive On Green		0.03	0.09	0.00		0.29	0.49	0.49	0.19	0.00	0.00	0.06
Sat Flow, veh/h		1628	3247	1448		1581	3180	48	3281	0	1460	1628
Grp Volume(v), veh/h		105	1071	0		273	490	513	533	0	0	34
Grp Sat Flow(s),veh/h/ln		1628	1624	1448		1581	1577	1651	1641	0	1460	1628
Q Serve(g_s), s		6.4	27.5	0.0		14.9	23.1	23.1	15.7	0.0	0.0	2.0
Cycle Q Clear(g_c), s		6.4	27.5	0.0		14.9	23.1	23.1	15.7	0.0	0.0	2.0
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		132	893			455	768	804	632	0		105
V/C Ratio(X)		0.79	1.20			0.60	0.64	0.64	0.84	0.00		0.32
Avail Cap(c_a), veh/h		260	893			455	768	804	771	0		220
HCM Platoon Ratio		0.33	0.33	0.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		47.8	45.5	0.0		30.6	19.1	19.1	38.9	0.0	0.0	44.7
Incr Delay (d2), s/veh		7.8	100.5	0.0		1.9	3.7	3.5	6.7	0.0	0.0	1.3
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
%ile BackOfQ(50%),veh/ln		3.0	24.4	0.0		5.8	8.9	9.3	6.8	0.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		55.6	146.0	0.0		32.6	22.8	22.6	45.6	0.0	0.0	46.0
LnGrp LOS		E	F			C	C	C	D	A		D
Approach Vol, veh/h			1176	A			1276			533	A	
Approach Delay, s/veh			137.9				24.8			45.6		
Approach LOS			F				C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.3	32.0		10.9	12.1	53.2		23.8				
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.0	* 28		13.5	16.0	29.5		23.5				
Max Q Clear Time (g_c+I1), s	16.9	29.5		4.1	8.4	25.1		17.7				
Green Ext Time (p_c), s	0.1	0.0		0.2	0.2	3.9		1.4				

Intersection Summary

HCM 6th Ctrl Delay	72.5
HCM 6th LOS	E

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	SBT	SBR
Lane Configurations	↑	↑
Traffic Volume (veh/h)	35	84
Future Volume (veh/h)	35	84
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	37	0
Peak Hour Factor	0.94	0.94
Percent Heavy Veh, %	3	3
Cap, veh/h	110	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1709	1448
Grp Volume(v), veh/h	37	0
Grp Sat Flow(s),veh/h/ln	1709	1448
Q Serve(g_s), s	2.1	0.0
Cycle Q Clear(g_c), s	2.1	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	110	
V/C Ratio(X)	0.34	
Avail Cap(c_a), veh/h	231	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.7	0.0
Incr Delay (d2), s/veh	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.1	0.0
LnGrp LOS	D	
Approach Vol, veh/h	71	A
Approach Delay, s/veh	46.0	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM 6th Signalized Intersection Summary
 5: I-5 NB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1157	211	0	1125	407	223	0	592	0	0	0
Future Volume (veh/h)	0	1157	211	0	1125	407	223	0	592	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1853	1853	0	1660	1660	1514	1514	1514			
Adj Flow Rate, veh/h	0	1231	0	0	1197	0	158	0	715			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	3	3			
Cap, veh/h	0	2088		0	1870		444	0	790			
Arrive On Green	0.00	1.00	0.00	0.00	0.59	0.00	0.31	0.00	0.31			
Sat Flow, veh/h	0	3614	1571	0	3237	1407	1442	0	2563			
Grp Volume(v), veh/h	0	1231	0	0	1197	0	158	0	715			
Grp Sat Flow(s),veh/h/ln	0	1761	1571	0	1577	1407	1442	0	1282			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	24.9	0.0	8.5	0.0	26.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	24.9	0.0	8.5	0.0	26.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2088		0	1870		444	0	790			
V/C Ratio(X)	0.00	0.59		0.00	0.64		0.36	0.00	0.91			
Avail Cap(c_a), veh/h	0	2088		0	1870		499	0	887			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.77	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	13.4	0.0	26.9	0.0	33.2			
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	1.7	0.0	0.4	0.0	11.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	8.6	0.0	2.9	0.0	9.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.9	0.0	0.0	15.1	0.0	27.2	0.0	44.7			
LnGrp LOS	A	A		A	B		C	A	D			
Approach Vol, veh/h		1231	A		1197	A		873				
Approach Delay, s/veh		0.9			15.1			41.6				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		63.8				63.8		36.2				
Change Period (Y+Rc), s		4.5				4.5		5.4				
Max Green Setting (Gmax), s		55.5				55.5		34.6				
Max Q Clear Time (g_c+I1), s		2.0				26.9		28.8				
Green Ext Time (p_c), s		31.1				24.0		2.1				

Intersection Summary

HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 6: I-5 SB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	765	477	0	684	664	0	0	0	603	0	346
Future Volume (veh/h)	0	765	477	0	684	664	0	0	0	603	0	346
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1647	1647	0	1853	1853				1587	0	1587
Adj Flow Rate, veh/h	0	860	0	0	769	0				678	0	389
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	4	4	0	3	3				2	0	2
Cap, veh/h	0	1857		0	2090					928	0	426
Arrive On Green	0.00	0.59	0.00	0.00	1.00	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3211	1395	0	3614	1571				2932	0	1345
Grp Volume(v), veh/h	0	860	0	0	769	0				678	0	389
Grp Sat Flow(s),veh/h/ln	0	1564	1395	0	1761	1571				1466	0	1345
Q Serve(g_s), s	0.0	15.4	0.0	0.0	0.0	0.0				20.6	0.0	27.8
Cycle Q Clear(g_c), s	0.0	15.4	0.0	0.0	0.0	0.0				20.6	0.0	27.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1857		0	2090					928	0	426
V/C Ratio(X)	0.00	0.46		0.00	0.37					0.73	0.00	0.91
Avail Cap(c_a), veh/h	0	1857		0	2090					1041	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.79	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	0.0	0.0	0.0	0.0				30.4	0.0	32.9
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.4	0.0				2.1	0.0	20.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	0.0	0.0	0.1	0.0				7.4	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	0.0	0.0	0.4	0.0				32.5	0.0	53.2
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		860	A		769	A					1067	
Approach Delay, s/veh		12.2			0.4						40.0	
Approach LOS		B			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		63.9		36.1		63.9						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		55.5						
Max Q Clear Time (g_c+I1), s		17.4		29.8		2.0						
Green Ext Time (p_c), s		23.2		1.8		16.5						

Intersection Summary

HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary

7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	578	384	122	672	63	295	130	75	130	254	155
Future Volume (veh/h)	100	578	384	122	672	63	295	130	75	130	254	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1723	1723	1723	1709	1709	1709	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	101	584	388	123	679	64	298	131	76	131	257	157
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	121	731	899	144	750	631	319	475	399	152	300	251
Arrive On Green	0.07	0.42	0.42	0.09	0.44	0.44	0.19	0.28	0.28	0.09	0.17	0.17
Sat Flow, veh/h	1641	1723	1450	1628	1709	1438	1641	1723	1447	1641	1723	1439
Grp Volume(v), veh/h	101	584	388	123	679	64	298	131	76	131	257	157
Grp Sat Flow(s),veh/h/ln	1641	1723	1450	1628	1709	1438	1641	1723	1447	1641	1723	1439
Q Serve(g_s), s	9.7	47.2	22.3	11.9	59.2	4.2	28.6	9.5	6.4	12.6	23.2	16.2
Cycle Q Clear(g_c), s	9.7	47.2	22.3	11.9	59.2	4.2	28.6	9.5	6.4	12.6	23.2	16.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	731	899	144	750	631	319	475	399	152	300	251
V/C Ratio(X)	0.83	0.80	0.43	0.86	0.91	0.10	0.93	0.28	0.19	0.86	0.86	0.63
Avail Cap(c_a), veh/h	256	808	963	254	801	674	359	475	399	256	377	315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.1	40.1	15.9	71.9	41.8	26.3	63.5	45.4	44.3	71.6	64.1	61.2
Incr Delay (d2), s/veh	10.5	6.2	0.6	10.3	14.1	0.1	29.1	0.2	0.2	11.1	13.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	21.1	7.5	5.4	27.5	1.5	14.5	4.2	2.4	5.8	11.3	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.6	46.3	16.5	82.2	55.9	26.5	92.5	45.7	44.5	82.7	77.9	63.2
LnGrp LOS	F	D	B	F	E	C	F	D	D	F	E	E
Approach Vol, veh/h	1073			866			505			545		
Approach Delay, s/veh	39.0			57.5			73.1			74.8		
Approach LOS	D			E			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.6	72.9	35.6	32.9	16.3	75.2	19.3	49.1				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	25.0	75.0	35.0	35.0	25.0	75.0	25.0	35.0				
Max Q Clear Time (g_c+11), s	11.0	49.2	30.6	25.2	11.7	61.2	14.6	11.5				
Green Ext Time (p_c), s	0.3	16.2	0.5	2.7	0.2	9.1	0.3	1.6				

Intersection Summary

HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Notes

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

HCM 6th TWSC
1: Harvard Dr & Stacy Allison Way

06/27/2022

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵			↕			↕	
Traffic Vol, veh/h	0	112	3	75	86	31	1	1	43	10	0	0
Future Vol, veh/h	0	112	3	75	86	31	1	1	43	10	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	2	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	1	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	94	94	94	94	92	94	92	94	92	92	92
Heavy Vehicles, %	2	5	5	8	8	2	12	2	12	2	2	2
Mvmt Flow	0	119	3	80	91	34	1	1	46	11	0	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	125	0	0	125	0	0	394	409	125	413	393	110
Stage 1	-	-	-	-	-	-	124	124	-	268	268	-
Stage 2	-	-	-	-	-	-	270	285	-	145	125	-
Critical Hdwy	4.12	-	-	4.18	-	-	7.22	6.52	6.32	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.272	-	-	3.608	4.018	3.408	3.518	4.018	3.318
Pot Cap-1 Maneuver	1462	-	-	1425	-	-	548	532	899	549	543	943
Stage 1	-	-	-	-	-	-	856	793	-	738	687	-
Stage 2	-	-	-	-	-	-	714	676	-	858	792	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1462	-	-	1421	-	-	522	501	896	497	511	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	522	501	-	497	511	-
Stage 1	-	-	-	-	-	-	853	791	-	738	649	-
Stage 2	-	-	-	-	-	-	673	638	-	812	790	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3	9.4	12.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	867	1462	-	-	1421	-	-	497
HCM Lane V/C Ratio	0.055	-	-	-	0.056	-	-	0.022
HCM Control Delay (s)	9.4	0	-	-	7.7	-	-	12.4
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	0.1

HCM 6th TWSC
2: Evergreen Rd & Harvard Dr

06/27/2022

Intersection

Int Delay, s/veh 4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	5	310	6	29	141	4	6	31	105	2	54	8
Future Vol, veh/h	5	310	6	29	141	4	6	31	105	2	54	8
Conflicting Peds, #/hr	1	0	4	4	0	1	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	5	5	5	1	1	1	7	7	7
Mvmt Flow	5	337	7	32	153	4	7	34	114	2	59	9

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	158	0	0	348
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.15
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.245
Pot Cap-1 Maneuver	1422	-	-	1194
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1421	-	-	1189
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	13.4	15
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	584	1421	-	-	1189	-	-	428
HCM Lane V/C Ratio	0.264	0.004	-	-	0.027	-	-	0.163
HCM Control Delay (s)	13.4	7.5	-	-	8.1	-	-	15
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	0.6

HCM 6th TWSC
 3: Evergreen Rd & Stacy Allison Way

06/27/2022

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↗	↗	
Traffic Vol, veh/h	132	13	12	496	180	61
Future Vol, veh/h	132	13	12	496	180	61
Conflicting Peds, #/hr	2	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	140	14	13	528	191	65

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	781	226	257	0	-	0
Stage 1	225	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	356	801	1308	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	352	799	1307	-	-	-
Mov Cap-2 Maneuver	451	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1307	-	451	799	-	-
HCM Lane V/C Ratio	0.01	-	0.311	0.017	-	-
HCM Control Delay (s)	7.8	-	16.6	9.6	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	1.3	0.1	-	-

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕	↗		↔	↕		↖	↕	↗	↘
Traffic Volume (veh/h)	38	41	893	143	7	150	919	13	531	10	195	7
Future Volume (veh/h)	38	41	893	143	7	150	919	13	531	10	195	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		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		
Adj Sat Flow, veh/h/ln		1641	1641	1641		1633	1633	1633	1695	1695	1695	1695
Adj Flow Rate, veh/h		42	921	0		155	947	13	554	0	0	7
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		8	8	8		5	5	5	4	4	4	4
Cap, veh/h		51	857			488	1758	24	643	0		52
Arrive On Green		0.01	0.09	0.00		0.31	0.56	0.56	0.20	0.00	0.00	0.03
Sat Flow, veh/h		1563	3118	1391		1555	3133	43	3229	0	1437	1615
Grp Volume(v), veh/h		42	921	0		155	469	491	554	0	0	7
Grp Sat Flow(s),veh/h/ln		1563	1559	1391		1555	1551	1625	1615	0	1437	1615
Q Serve(g_s), s		2.7	27.5	0.0		7.6	19.0	19.0	16.6	0.0	0.0	0.4
Cycle Q Clear(g_c), s		2.7	27.5	0.0		7.6	19.0	19.0	16.6	0.0	0.0	0.4
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		51	857			488	870	912	643	0		52
V/C Ratio(X)		0.82	1.07			0.32	0.54	0.54	0.86	0.00		0.13
Avail Cap(c_a), veh/h		250	857			488	870	912	759	0		218
HCM Platoon Ratio		0.33	0.33	0.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		49.2	45.5	0.0		26.2	13.8	13.8	38.7	0.0	0.0	47.0
Incr Delay (d2), s/veh		20.9	52.7	0.0		0.3	2.1	2.0	8.4	0.0	0.0	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.4	17.7	0.0		2.8	6.8	7.1	7.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		70.0	98.2	0.0		26.4	15.9	15.8	47.1	0.0	0.0	47.9
LnGrp LOS		E	F			C	B	B	D	A		D
Approach Vol, veh/h			963	A			1115			554	A	
Approach Delay, s/veh			96.9				17.4			47.1		
Approach LOS			F				B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.9	32.0		7.7	7.3	60.6		24.4				
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.0	* 28		13.5	16.0	29.5		23.5				
Max Q Clear Time (g_c+I1), s	9.6	29.5		2.8	4.7	21.0		18.6				
Green Ext Time (p_c), s	0.3	0.0		0.0	0.1	7.2		1.3				

Intersection Summary

HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	SBT	SBR
Lane Configurations	↑	↑
Traffic Volume (veh/h)	14	30
Future Volume (veh/h)	14	30
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1695	1695
Adj Flow Rate, veh/h	14	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	4	4
Cap, veh/h	55	
Arrive On Green	0.03	0.00
Sat Flow, veh/h	1695	1437
Grp Volume(v), veh/h	14	0
Grp Sat Flow(s),veh/h/ln	1695	1437
Q Serve(g_s), s	0.8	0.0
Cycle Q Clear(g_c), s	0.8	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	55	
V/C Ratio(X)	0.25	
Avail Cap(c_a), veh/h	229	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	47.2	0.0
Incr Delay (d2), s/veh	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	49.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	21	A
Approach Delay, s/veh	48.6	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM 6th Signalized Intersection Summary
 5: I-5 NB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	568	202	0	808	710	328	0	687	0	0	0
Future Volume (veh/h)	0	568	202	0	808	710	328	0	687	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1757	1757	0	1619	1619	1432	1555	1432			
Adj Flow Rate, veh/h	0	592	0	0	842	0	228	0	838			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	10	10	0	6	6	9	0	9			
Cap, veh/h	0	1852		0	1708		472	0	839			
Arrive On Green	0.00	1.00	0.00	0.00	0.56	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	3425	1489	0	3158	1372	1364	0	2425			
Grp Volume(v), veh/h	0	592	0	0	842	0	228	0	838			
Grp Sat Flow(s),veh/h/ln	0	1669	1489	0	1538	1372	1364	0	1212			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	16.8	0.0	13.1	0.0	34.5			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	16.8	0.0	13.1	0.0	34.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1852		0	1708		472	0	839			
V/C Ratio(X)	0.00	0.32		0.00	0.49		0.48	0.00	1.00			
Avail Cap(c_a), veh/h	0	1852		0	1708		472	0	839			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.92	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	13.6	0.0	25.7	0.0	32.7			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	1.0	0.0	0.6	0.0	30.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	5.7	0.0	4.3	0.0	13.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	14.7	0.0	26.2	0.0	63.4			
LnGrp LOS	A	A		A	B		C	A	E			
Approach Vol, veh/h		592	A		842	A		1066				
Approach Delay, s/veh		0.4			14.7			55.5				
Approach LOS		A			B			E				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		40.0				
Change Period (Y+Rc), s		4.5				4.5		5.4				
Max Green Setting (Gmax), s		55.5				55.5		34.6				
Max Q Clear Time (g_c+I1), s		2.0				18.8		36.5				
Green Ext Time (p_c), s		11.8				22.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 6: I-5 SB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↖↗		↗
Traffic Volume (veh/h)	0	458	223	0	665	471	0	0	0	312	0	262
Future Volume (veh/h)	0	458	223	0	665	471	0	0	0	312	0	262
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1565	1565	0	1757	1757				1437	0	1437
Adj Flow Rate, veh/h	0	472	0	0	686	0				322	0	270
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	10	10	0	10	10				13	0	13
Cap, veh/h	0	1968		0	2209					659	0	302
Arrive On Green	0.00	0.66	0.00	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	3051	1326	0	3425	1489				2655	0	1218
Grp Volume(v), veh/h	0	472	0	0	686	0				322	0	270
Grp Sat Flow(s),veh/h/ln	0	1486	1326	0	1669	1489				1327	0	1218
Q Serve(g_s), s	0.0	6.4	0.0	0.0	0.0	0.0				10.4	0.0	21.4
Cycle Q Clear(g_c), s	0.0	6.4	0.0	0.0	0.0	0.0				10.4	0.0	21.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1968		0	2209					659	0	302
V/C Ratio(X)	0.00	0.24		0.00	0.31					0.49	0.00	0.89
Avail Cap(c_a), veh/h	0	1968		0	2209					942	0	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.82	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	0.0	0.0				32.2	0.0	36.3
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				0.4	0.0	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	0.0	0.0	0.1	0.0				3.3	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.1	0.0	0.0	0.3	0.0				32.6	0.0	50.5
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		472	A		686	A					592	
Approach Delay, s/veh		7.1			0.3						40.8	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		70.7		29.3		70.7						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		55.5						
Max Q Clear Time (g_c+I1), s		8.4		23.4		2.0						
Green Ext Time (p_c), s		13.2		1.4		14.2						

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary
 7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	531	224	53	418	50	381	160	70	43	99	91
Future Volume (veh/h)	120	531	224	53	418	50	381	160	70	43	99	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
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	1641	1641	1641	1573	1573	1573	1736	1736	1736	1723	1723	1723
Adj Flow Rate, veh/h	125	553	233	55	435	52	397	167	73	45	103	95
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	8	8	8	13	13	13	1	1	1	2	2	2
Cap, veh/h	151	702	952	68	593	501	426	579	485	57	191	156
Arrive On Green	0.10	0.43	0.43	0.05	0.38	0.38	0.26	0.33	0.33	0.03	0.11	0.11
Sat Flow, veh/h	1563	1641	1387	1498	1573	1329	1654	1736	1454	1641	1723	1407
Grp Volume(v), veh/h	125	553	233	55	435	52	397	167	73	45	103	95
Grp Sat Flow(s),veh/h/ln	1563	1641	1387	1498	1573	1329	1654	1736	1454	1641	1723	1407
Q Serve(g_s), s	9.4	34.9	7.6	4.4	28.6	3.0	28.1	8.5	4.2	3.3	6.8	7.7
Cycle Q Clear(g_c), s	9.4	34.9	7.6	4.4	28.6	3.0	28.1	8.5	4.2	3.3	6.8	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	702	952	68	593	501	426	579	485	57	191	156
V/C Ratio(X)	0.83	0.79	0.24	0.81	0.73	0.10	0.93	0.29	0.15	0.79	0.54	0.61
Avail Cap(c_a), veh/h	326	890	1110	312	853	721	483	579	485	342	431	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	29.6	7.1	56.7	32.2	24.2	43.5	29.5	28.0	57.4	50.4	50.8
Incr Delay (d2), s/veh	8.4	5.1	0.3	15.2	3.5	0.2	23.2	0.2	0.1	16.3	1.8	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	14.3	2.1	1.9	11.2	1.0	14.0	3.6	1.5	1.6	3.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	34.7	7.4	71.9	35.7	24.4	66.7	29.7	28.1	73.7	52.2	53.7
LnGrp LOS	E	C	A	E	D	C	E	C	C	E	D	D
Approach Vol, veh/h		911			542			637			243	
Approach Delay, s/veh		31.4			38.3			52.6			56.8	
Approach LOS		C			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	56.3	35.4	18.3	16.1	50.2	8.7	45.0				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	25.0	65.0	35.0	30.0	25.0	65.0	25.0	30.0				
Max Q Clear Time (g_c+1), s	10.4	36.9	30.1	9.7	11.4	30.6	5.3	10.5				
Green Ext Time (p_c), s	0.1	14.4	0.8	1.8	0.3	10.1	0.1	1.8				

Intersection Summary

HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Notes

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

HCM 6th TWSC
1: Harvard Dr & Stacy Allison Way

06/27/2022

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	0	204	3	151	275	30	5	1	76	48	2	0
Future Vol, veh/h	0	204	3	151	275	30	5	1	76	48	2	0
Conflicting Peds, #/hr	0	0	8	8	0	0	1	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2	4	2	4	2	2	2
Mvmt Flow	0	215	3	159	289	33	5	1	80	52	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	322	0	0	226	0	0	851	865	225	881	850	307
Stage 1	-	-	-	-	-	-	225	225	-	624	624	-
Stage 2	-	-	-	-	-	-	626	640	-	257	226	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.14	6.52	6.24	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.018	3.336	3.518	4.018	3.318
Pot Cap-1 Maneuver	1238	-	-	1342	-	-	278	292	809	267	298	733
Stage 1	-	-	-	-	-	-	773	718	-	473	478	-
Stage 2	-	-	-	-	-	-	469	470	-	748	717	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1238	-	-	1332	-	-	249	255	803	218	260	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	249	255	-	218	260	-
Stage 1	-	-	-	-	-	-	767	712	-	473	421	-
Stage 2	-	-	-	-	-	-	410	414	-	672	711	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.7			11			26.8		
HCM LOS							B			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	691	1238	-	-	1332	-	-	219
HCM Lane V/C Ratio	0.125	-	-	-	0.119	-	-	0.248
HCM Control Delay (s)	11	0	-	-	8.1	-	-	26.8
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0.4	-	-	0.9

HCM 6th TWSC
2: Evergreen Rd & Harvard Dr

06/27/2022

Intersection

Int Delay, s/veh 5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	16	255	33	46	332	7	5	34	81	8	82	46
Future Vol, veh/h	16	255	33	46	332	7	5	34	81	8	82	46
Conflicting Peds, #/hr	1	0	2	2	0	1	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	1	1	1	0	0	0	2	2	2
Mvmt Flow	17	268	35	48	349	7	5	36	85	8	86	48

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	357	0	0	305
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.11
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.209
Pot Cap-1 Maneuver	1202	-	-	1262
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1201	-	-	1260
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1	14.7	20.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	497	1201	-	-	1260	-	-	367
HCM Lane V/C Ratio	0.254	0.014	-	-	0.038	-	-	0.39
HCM Control Delay (s)	14.7	8	-	-	8	-	-	20.9
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	1.8

HCM 6th TWSC
3: Evergreen Rd & Stacy Allison Way

06/27/2022

Intersection

Int Delay, s/veh 8.9

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	↘	↗	↘	↗	↗	↗
Traffic Vol, veh/h	280	57	40	369	395	132
Future Vol, veh/h	280	57	40	369	395	132
Conflicting Peds, #/hr	1	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	298	61	43	393	420	140

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	972	494	562	0	-	0
Stage 1	492	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	~280	575	1014	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~267	573	1012	-	-	-
Mov Cap-2 Maneuver	397	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	32.5	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

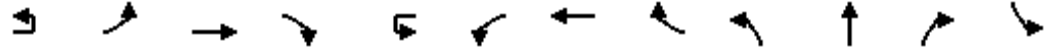
Capacity (veh/h)	1012	-	397	573	-	-
HCM Lane V/C Ratio	0.042	-	0.75	0.106	-	-
HCM Control Delay (s)	8.7	-	36.7	12	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	6.1	0.4	-	-

Notes

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

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↕	↗		↔	↕		↖	↕	↗	↘
Traffic Volume (veh/h)	36	99	1002	313	20	269	925	14	508	25	227	32
Future Volume (veh/h)	36	99	1002	313	20	269	925	14	508	25	227	32
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		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		
Adj Sat Flow, veh/h/ln		1709	1709	1709		1660	1660	1660	1723	1723	1723	1709
Adj Flow Rate, veh/h		105	1066	0		286	984	15	559	0	0	34
Peak Hour Factor		0.94	0.94	0.94		0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %		3	3	3		3	3	3	2	2	2	3
Cap, veh/h		132	893			445	1526	23	655	0		105
Arrive On Green		0.03	0.09	0.00		0.28	0.48	0.48	0.20	0.00	0.00	0.06
Sat Flow, veh/h		1628	3247	1448		1581	3180	48	3281	0	1460	1628
Grp Volume(v), veh/h		105	1066	0		286	488	511	559	0	0	34
Grp Sat Flow(s),veh/h/ln		1628	1624	1448		1581	1577	1651	1641	0	1460	1628
Q Serve(g_s), s		6.4	27.5	0.0		15.9	23.3	23.3	16.4	0.0	0.0	2.0
Cycle Q Clear(g_c), s		6.4	27.5	0.0		15.9	23.3	23.3	16.4	0.0	0.0	2.0
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		132	893			445	757	792	655	0		105
V/C Ratio(X)		0.79	1.19			0.64	0.64	0.64	0.85	0.00		0.32
Avail Cap(c_a), veh/h		260	893			445	757	792	771	0		220
HCM Platoon Ratio		0.33	0.33	0.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		47.8	45.5	0.0		31.5	19.6	19.6	38.6	0.0	0.0	44.7
Incr Delay (d2), s/veh		7.8	98.2	0.0		2.9	3.9	3.7	7.7	0.0	0.0	1.3
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
%ile BackOfQ(50%),veh/ln		3.0	24.1	0.0		6.3	9.0	9.4	7.2	0.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		55.6	143.7	0.0		34.4	23.4	23.3	46.4	0.0	0.0	46.0
LnGrp LOS		E	F			C	C	C	D	A		D
Approach Vol, veh/h			1171	A			1285			559	A	
Approach Delay, s/veh			135.8				25.8			46.4		
Approach LOS			F				C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.6	32.0		10.9	12.1	52.5		24.4				
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.0	* 28		13.5	16.0	29.5		23.5				
Max Q Clear Time (g_c+I1), s	17.9	29.5		4.1	8.4	25.3		18.4				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.2	3.8		1.3				

Intersection Summary

HCM 6th Ctrl Delay	71.7
HCM 6th LOS	E

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	SBT	SBR
Lane Configurations	↑	↑
Traffic Volume (veh/h)	35	84
Future Volume (veh/h)	35	84
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	37	0
Peak Hour Factor	0.94	0.94
Percent Heavy Veh, %	3	3
Cap, veh/h	110	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1709	1448
Grp Volume(v), veh/h	37	0
Grp Sat Flow(s),veh/h/ln	1709	1448
Q Serve(g_s), s	2.1	0.0
Cycle Q Clear(g_c), s	2.1	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	110	
V/C Ratio(X)	0.34	
Avail Cap(c_a), veh/h	231	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.7	0.0
Incr Delay (d2), s/veh	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.1	0.0
LnGrp LOS	D	
Approach Vol, veh/h	71	A
Approach Delay, s/veh	46.0	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM 6th Signalized Intersection Summary
 5: I-5 NB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1164	211	0	1137	415	223	0	596	0	0	0
Future Volume (veh/h)	0	1164	211	0	1137	415	223	0	596	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1853	1853	0	1660	1660	1514	1514	1514			
Adj Flow Rate, veh/h	0	1238	0	0	1210	0	158	0	719			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	3	3			
Cap, veh/h	0	2083		0	1866		446	0	793			
Arrive On Green	0.00	1.00	0.00	0.00	0.59	0.00	0.31	0.00	0.31			
Sat Flow, veh/h	0	3614	1571	0	3237	1407	1442	0	2563			
Grp Volume(v), veh/h	0	1238	0	0	1210	0	158	0	719			
Grp Sat Flow(s),veh/h/ln	0	1761	1571	0	1577	1407	1442	0	1282			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	25.4	0.0	8.5	0.0	26.9			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	25.4	0.0	8.5	0.0	26.9			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2083		0	1866		446	0	793			
V/C Ratio(X)	0.00	0.59		0.00	0.65		0.35	0.00	0.91			
Avail Cap(c_a), veh/h	0	2083		0	1866		499	0	887			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.77	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	13.5	0.0	26.8	0.0	33.1			
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	1.8	0.0	0.4	0.0	11.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	8.8	0.0	2.9	0.0	9.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.0	0.0	0.0	15.3	0.0	27.1	0.0	44.9			
LnGrp LOS	A	A		A	B		C	A	D			
Approach Vol, veh/h		1238	A		1210	A		877				
Approach Delay, s/veh		1.0			15.3			41.7				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		63.7				63.7		36.3				
Change Period (Y+Rc), s		4.5				4.5		5.4				
Max Green Setting (Gmax), s		55.5				55.5		34.6				
Max Q Clear Time (g_c+I1), s		2.0				27.4		28.9				
Green Ext Time (p_c), s		31.4				23.8		2.0				

Intersection Summary

HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 6: I-5 SB & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑↑		↑
Traffic Volume (veh/h)	0	767	477	0	688	672	0	0	0	608	0	346
Future Volume (veh/h)	0	767	477	0	688	672	0	0	0	608	0	346
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1647	1647	0	1853	1853				1587	0	1587
Adj Flow Rate, veh/h	0	862	0	0	773	0				683	0	389
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	4	4	0	3	3				2	0	2
Cap, veh/h	0	1857		0	2090					928	0	426
Arrive On Green	0.00	0.59	0.00	0.00	1.00	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3211	1395	0	3614	1571				2932	0	1345
Grp Volume(v), veh/h	0	862	0	0	773	0				683	0	389
Grp Sat Flow(s),veh/h/ln	0	1564	1395	0	1761	1571				1466	0	1345
Q Serve(g_s), s	0.0	15.5	0.0	0.0	0.0	0.0				20.8	0.0	27.8
Cycle Q Clear(g_c), s	0.0	15.5	0.0	0.0	0.0	0.0				20.8	0.0	27.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1857		0	2090					928	0	426
V/C Ratio(X)	0.00	0.46		0.00	0.37					0.74	0.00	0.91
Avail Cap(c_a), veh/h	0	1857		0	2090					1041	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.79	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	0.0	0.0	0.0	0.0				30.4	0.0	32.9
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.4	0.0				2.2	0.0	20.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	0.0	0.0	0.1	0.0				7.5	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	0.0	0.0	0.4	0.0				32.7	0.0	53.1
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		862	A		773	A					1072	
Approach Delay, s/veh		12.2			0.4						40.1	
Approach LOS		B			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		63.8		36.2		63.8						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		55.5						
Max Q Clear Time (g_c+I1), s		17.5		29.8		2.0						
Green Ext Time (p_c), s		23.2		1.8		16.6						

Intersection Summary

HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary

7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

06/27/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	586	386	122	677	63	296	130	75	130	254	157
Future Volume (veh/h)	104	586	386	122	677	63	296	130	75	130	254	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1723	1723	1723	1709	1709	1709	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	105	592	390	123	684	64	299	131	76	131	257	159
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	125	735	902	144	749	630	319	475	399	152	299	250
Arrive On Green	0.08	0.43	0.43	0.09	0.44	0.44	0.19	0.28	0.28	0.09	0.17	0.17
Sat Flow, veh/h	1641	1723	1450	1628	1709	1438	1641	1723	1447	1641	1723	1439
Grp Volume(v), veh/h	105	592	390	123	684	64	299	131	76	131	257	159
Grp Sat Flow(s),veh/h/ln	1641	1723	1450	1628	1709	1438	1641	1723	1447	1641	1723	1439
Q Serve(g_s), s	10.2	48.6	22.6	12.1	60.7	4.2	29.1	9.7	6.5	12.8	23.5	16.6
Cycle Q Clear(g_c), s	10.2	48.6	22.6	12.1	60.7	4.2	29.1	9.7	6.5	12.8	23.5	16.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	735	902	144	749	630	319	475	399	152	299	250
V/C Ratio(X)	0.84	0.81	0.43	0.86	0.91	0.10	0.94	0.28	0.19	0.86	0.86	0.64
Avail Cap(c_a), veh/h	253	798	955	251	791	666	355	475	399	253	372	311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.8	40.6	15.9	72.8	42.6	26.7	64.2	46.0	44.9	72.5	65.0	62.2
Incr Delay (d2), s/veh	10.5	6.6	0.6	10.4	15.3	0.1	30.0	0.2	0.2	11.8	14.4	2.2
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	4.7	21.8	7.6	5.5	28.5	1.5	14.8	4.2	2.4	5.9	11.5	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.3	47.2	16.6	83.2	57.9	26.9	94.2	46.2	45.0	84.3	79.4	64.4
LnGrp LOS	F	D	B	F	E	C	F	D	D	F	E	E
Approach Vol, veh/h		1087			871			506			547	
Approach Delay, s/veh		39.8			59.2			74.4			76.2	
Approach LOS		D			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.8	74.1	36.0	33.1	16.9	76.0	19.5	49.6				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	25.0	75.0	35.0	35.0	25.0	75.0	25.0	35.0				
Max Q Clear Time (g_c+1/4), s	14.1	50.6	31.1	25.5	12.2	62.7	14.8	11.7				
Green Ext Time (p_c), s	0.3	15.7	0.4	2.6	0.2	8.3	0.3	1.6				

Intersection Summary

HCM 6th Ctrl Delay	57.8
HCM 6th LOS	E

Notes

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

Intersection: 1: Harvard Dr & Stacy Allison Way

Movement	WB	WB	NB	SB
Directions Served	L	TR	LTR	LTR
Maximum Queue (ft)	34	39	68	33
Average Queue (ft)	7	4	27	10
95th Queue (ft)	30	23	57	35
Link Distance (ft)		234	1064	215
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	1			
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 2: Evergreen Rd & Harvard Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	14	32	50	7	91	82
Average Queue (ft)	0	1	10	0	37	33
95th Queue (ft)	6	14	37	7	69	62
Link Distance (ft)		768		1070	731	1064
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50		50			
Storage Blk Time (%)		0	0	0		
Queuing Penalty (veh)		0	0	0		

Intersection: 3: Evergreen Rd & Stacy Allison Way

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	111	79	35	19	41
Average Queue (ft)	57	14	5	1	1
95th Queue (ft)	99	51	25	10	16
Link Distance (ft)		398		502	673
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		75		
Storage Blk Time (%)	1	0		0	
Queuing Penalty (veh)	0	0		0	

Queuing and Blocking Report
 2024 Full Build Conditions - AM Peak

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Intersection: 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	UL	T	T	R	UL	T	TR	L	LT	R	L	T
Maximum Queue (ft)	253	330	372	212	242	410	453	362	440	318	115	225
Average Queue (ft)	71	195	208	26	112	173	268	194	288	61	10	89
95th Queue (ft)	150	305	327	162	199	342	418	331	414	208	57	202
Link Distance (ft)		381	381			588	588		673			696
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		0	1									
Storage Bay Dist (ft)	175			250	375			325		300	75	
Storage Blk Time (%)		10	4	0	0	1		0	11		0	70
Queuing Penalty (veh)		8	6	0	0	1		1	51		0	26

Intersection: 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

Movement	SB
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	22
95th Queue (ft)	61
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	25
Storage Blk Time (%)	4
Queuing Penalty (veh)	1

Intersection: 5: I-5 NB & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	L	LTR	R
Maximum Queue (ft)	208	256	220	283	1274	1345	1268
Average Queue (ft)	102	122	109	166	883	1050	973
95th Queue (ft)	176	210	193	259	1645	1692	1588
Link Distance (ft)	622	622	388	388	1515	1515	1515
Upstream Blk Time (%)					2	4	1
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: I-5 SB & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	158	350	140	202	229	265	180
Average Queue (ft)	57	70	63	81	110	132	9
95th Queue (ft)	120	238	115	158	183	223	82
Link Distance (ft)	1267	1267	622	622	1468	1468	1468
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	EB	B19	B19	B18	B10	WB	WB	WB	NB	NB
Directions Served	L	T	R	T		T	T	L	T	R	L	T
Maximum Queue (ft)	481	714	300	379	9	6	16	212	477	298	300	796
Average Queue (ft)	120	316	123	22	0	0	1	55	252	38	242	312
95th Queue (ft)	278	570	332	211	7	5	8	112	422	155	343	736
Link Distance (ft)		1657		1250	1250	599	588		2074			1670
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		200					225		150	150	
Storage Blk Time (%)	0	20	0						23		37	15
Queuing Penalty (veh)	1	68	0						23		86	69

Intersection: 7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

Movement	NB	SB	SB	SB
Directions Served	R	L	T	R
Maximum Queue (ft)	160	104	242	117
Average Queue (ft)	34	36	127	44
95th Queue (ft)	108	83	216	95
Link Distance (ft)			1872	1872
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	175		
Storage Blk Time (%)			6	
Queuing Penalty (veh)			2	

Zone Summary

Zone wide Queuing Penalty: 344

Intersection: 1: Harvard Dr & Stacy Allison Way

Movement	EB	WB	WB	NB	SB
Directions Served	TR	L	TR	LTR	LTR
Maximum Queue (ft)	66	49	63	81	86
Average Queue (ft)	4	23	4	37	33
95th Queue (ft)	36	51	28	65	69
Link Distance (ft)	731		236	1064	186
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	1	3			
Queuing Penalty (veh)	0	9			

Intersection: 2: Evergreen Rd & Harvard Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	29	17	58	36	80	126
Average Queue (ft)	4	1	17	2	33	51
95th Queue (ft)	19	9	47	23	61	95
Link Distance (ft)		768		1070	731	1064
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50		50			
Storage Blk Time (%)	0	0	0	0		
Queuing Penalty (veh)	0	0	1	0		

Intersection: 3: Evergreen Rd & Stacy Allison Way

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	125	412	65	49	50
Average Queue (ft)	116	242	21	2	2
95th Queue (ft)	149	484	52	23	19
Link Distance (ft)		398		502	673
Upstream Blk Time (%)		9			
Queuing Penalty (veh)		33			
Storage Bay Dist (ft)	100		75		
Storage Blk Time (%)	66	1	0	0	
Queuing Penalty (veh)	38	2	0	0	

Intersection: 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	EB	EB	WB	WB	WB	B10	B10	NB	NB	NB
Directions Served	UL	T	T	R	UL	T	TR	T	T	L	LT	R
Maximum Queue (ft)	300	398	422	325	452	611	584	97	79	420	487	417
Average Queue (ft)	156	273	289	154	349	344	368	15	5	225	310	96
95th Queue (ft)	302	421	438	383	542	652	588	86	45	368	438	285
Link Distance (ft)		381	381			588	588	599	599		673	
Upstream Blk Time (%)		3	5			10	1					
Queuing Penalty (veh)		24	35			56	5					
Storage Bay Dist (ft)	175			250	375					325		300
Storage Blk Time (%)	4	24	17	0	30	3				1	17	0
Queuing Penalty (veh)	18	33	54	0	139	10				5	81	1

Intersection: 4: Evergreen Rd & Hillsboro-Silverton Hwy (214)

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	168	310	64
Average Queue (ft)	37	130	39
95th Queue (ft)	123	267	71
Link Distance (ft)		696	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	75		25
Storage Blk Time (%)	2	66	11
Queuing Penalty (veh)	2	77	7

Intersection: 5: I-5 NB & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	L	LTR	R
Maximum Queue (ft)	309	379	345	394	752	875	859
Average Queue (ft)	161	207	155	247	273	581	528
95th Queue (ft)	273	341	289	374	742	941	910
Link Distance (ft)	622	622	388	388	1515	1515	1515
Upstream Blk Time (%)			0	0			
Queuing Penalty (veh)			1	2			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: I-5 SB & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	228	451	127	148	308	368	195
Average Queue (ft)	107	146	58	60	179	215	14
95th Queue (ft)	193	380	106	119	269	323	98
Link Distance (ft)	1267	1267	622	622	1468	1468	1468
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

Movement	EB	EB	EB	B19	B19	B18	B18	B10	B10	WB	WB	WB
Directions Served	L	T	R	T		T	T	T	T	L	T	R
Maximum Queue (ft)	550	1716	300	970	685	203	209	86	88	524	1107	300
Average Queue (ft)	233	1025	227	312	227	75	72	17	16	214	645	73
95th Queue (ft)	555	1882	408	1146	992	408	396	133	132	486	1061	254
Link Distance (ft)		1657		1250	1250	599	599	588	588		2074	
Upstream Blk Time (%)		8		14	9	6	5					
Queuing Penalty (veh)		96		87	60	38	33					
Storage Bay Dist (ft)	250		200							225		150
Storage Blk Time (%)	0	39	0							3	43	
Queuing Penalty (veh)	4	189	3							20	80	

Intersection: 7: Settlemier Ave/Boones Ferry Rd & Hillsboro-Silverton Hwy (214)

Movement	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R
Maximum Queue (ft)	300	1296	259	353	527	228
Average Queue (ft)	271	684	44	140	294	110
95th Queue (ft)	345	1585	147	294	492	212
Link Distance (ft)		1670			1872	1872
Upstream Blk Time (%)		10				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	150		150	175		
Storage Blk Time (%)	59	29		7	41	
Queuing Penalty (veh)	120	108		18	54	

Zone Summary

Zone wide Queuing Penalty: 1546