

Traffic Impact Analysis

WinCo Foods
Woodburn, Oregon

Prepared For:

JSA Civil, LLC

Prepared By:

GVC Transportation Solutions

October 2025

GVC Transportation Solutions

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Traffic Impact Analysis

Project Information

Project: WinCo Foods – Woodburn, OR

Prepared for: JSA Civil, LLC

Reviewing Agency

Jurisdiction: City of Woodburn

Project Representative

Prepared by: GVC Transportation Solutions

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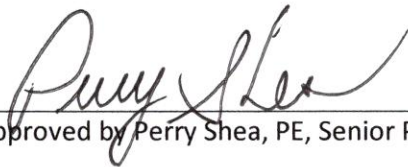
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SIGNATURE

The technical material and data contained in the Traffic Impact Analysis were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.



Prepared by Ryan Shea, PTP Senior Project Manager



Approved by Perry Shea, PE, Senior Principal

Table of Contents

1	Introduction	1
1.1	Project Overview	1
2	Proposed Development	2
2.1	Site Development	2
2.2	Study Context	2
3	Existing Conditions	4
3.1	Area Land Uses	4
3.2	Roadway Inventory.....	4
3.3	Traffic Volume Data.....	5
3.4	Other transportation modes	5
3.5	Crash History	6
4	Project Traffic Characteristics	11
4.1	Site-Generated Traffic Volumes	11
4.2	Interchange Management Area Overlay District	12
4.3	Site Traffic Sitribution and Assignment.....	13
5	Future Traffic Conditions	16
5.1	Roadway Network Improvements.....	16
5.2	Future Traffic Volumes	16
6	Traffic Operations Analysis	26
6.1	Level of Service	26
6.2	Intersection Operations.....	26
6.3	Intersection Analysis	27
6.4	Intersection analysis Summary.....	33
6.5	Site Access	34
6.6	Transportation Demand Management	34
7	Summary and Mitagation	36
7.1	Summary.....	36
7.2	Mitigation	36

List of Tables

Table 1. Seasonal Adjustment Factor Calculations 5

Table 2. Crash Rates by Study Intersection..... 6

Table 3. ITE Trip Generation Rates for Supermarket 11

Table 4. Project Trip Generation..... 12

Table 5. Level of Service Criteria for Intersections 27

Table 6. 2025 Existing AM Peak Hour Intersection Operations – ODOT Intersections..... 27

Table 7. 2025 Existing PM Peak Hour Intersection Operations – ODOT Intersections..... 28

Table 8. 2026 AM Peak Hour Intersection Operations – ODOT Intersections..... 28

Table 9. 2026 PM Peak Hour Intersection Operations – ODOT Intersections 29

Table 10. 2040 AM Peak Hour Intersection Operations – ODOT Intersections..... 29

Table 11. 2040 PM Peak Hour Intersection Operations – ODOT Intersections 30

Table 12. 2025 Existing AM Peak Hour Intersection Operations –Woodburn Intersections..... 31

Table 13. 2025 Existing PM Peak Hour Intersection Operations –Woodburn Intersections..... 31

Table 14. 2026 AM Peak Hour Intersection Operations – Woodburn Intersections 32

Table 15. 2026 PM Peak Hour Intersection Operations – Woodburn Intersections 33

List of Figures

Figure 1. Site Vicinity Map	1
Figure 2. Preliminary Site Plan	3
Figure 3. Intersection Channelization and Control	8
Figure 4. Existing 2025 AM Peak Hour Traffic Volumes.....	9
Figure 5. Existing 2025 PM Peak Hour Traffic Volumes	10
Figure 6. AM Peak Hour Site-Generated Traffic Volumes.....	14
Figure 7. PM Peak Hour Site-Generated Traffic Volumes.....	15
Figure 8. Projected 2026 AM Peak Hour Traffic Volumes without Project.....	18
Figure 9. Projected 2026 PM Peak Hour Traffic Volumes without Project.....	19
Figure 10. Projected 2040 AM Peak Hour Traffic Volumes without Project.....	20
Figure 11. Projected 2040 PM Peak Hour Traffic Volumes without Project.....	21
Figure 12. Projected 2026 AM Peak Hour Traffic Volumes with Project	22
Figure 13. Projected 2026 PM Peak Hour Traffic Volumes with Project	23
Figure 14. Projected 2040 AM Peak Hour Traffic Volumes with Project	24
Figure 15. Projected 2040 PM Peak Hour Traffic Volumes with Project	25

List of Appendices

Appendix A	Traffic Volume Counts
Appendix B	Traffic Volume Calculation Worksheets
Appendix C	Operations Analysis Worksheets

1 INTRODUCTION

1.1 PROJECT OVERVIEW

WinCo Foods is proposing to construct a 86,600 square foot WinCo Foods store to be located on vacant land in Woodburn, Oregon.

The purpose of this Traffic Impact Analysis (TIA) is to evaluate existing and future traffic conditions in the vicinity of this site and to determine what, if any, potential traffic impacts might be associated with the development of this project. This TIA will form the basis for determining the need for any traffic-related project mitigation. It has been prepared in accordance with City of Woodburn and ODOT standards and guidance as provided in the ODOT Analysis Procedures Manual.

Figure 1 illustrates the site vicinity and the transportation network serving the project area.

FIGURE 1. SITE VICINITY MAP



2 PROPOSED DEVELOPMENT

2.1 SITE DEVELOPMENT

The proposed project will construct a new 86,600-sf building located on vacant land along Stacy Allison Way. The WinCo Foods project will be developed on two vacant lots, totaling approximately 14 acres. Access to the project will be provided by four full access driveways, two along Stacy Allison Way, one along Center Street and one along Evergreen Road.

It is expected that the proposed WinCo Foods project will be developed in a single phase to be opened in 2026. A preliminary site plan for the project presented in **Figure 2**.

2.2 STUDY CONTEXT

A Traffic Methodology Memo was prepared for the proposed project and was submitted to City of Woodburn, which outlined the proposed study intersections, time periods, horizon years, volume adjustment methodologies and growth rates.

Based on comments from City and ODOT staff, the following off-site intersections will be included in the Traffic Impact Analysis:

ODOT Intersections

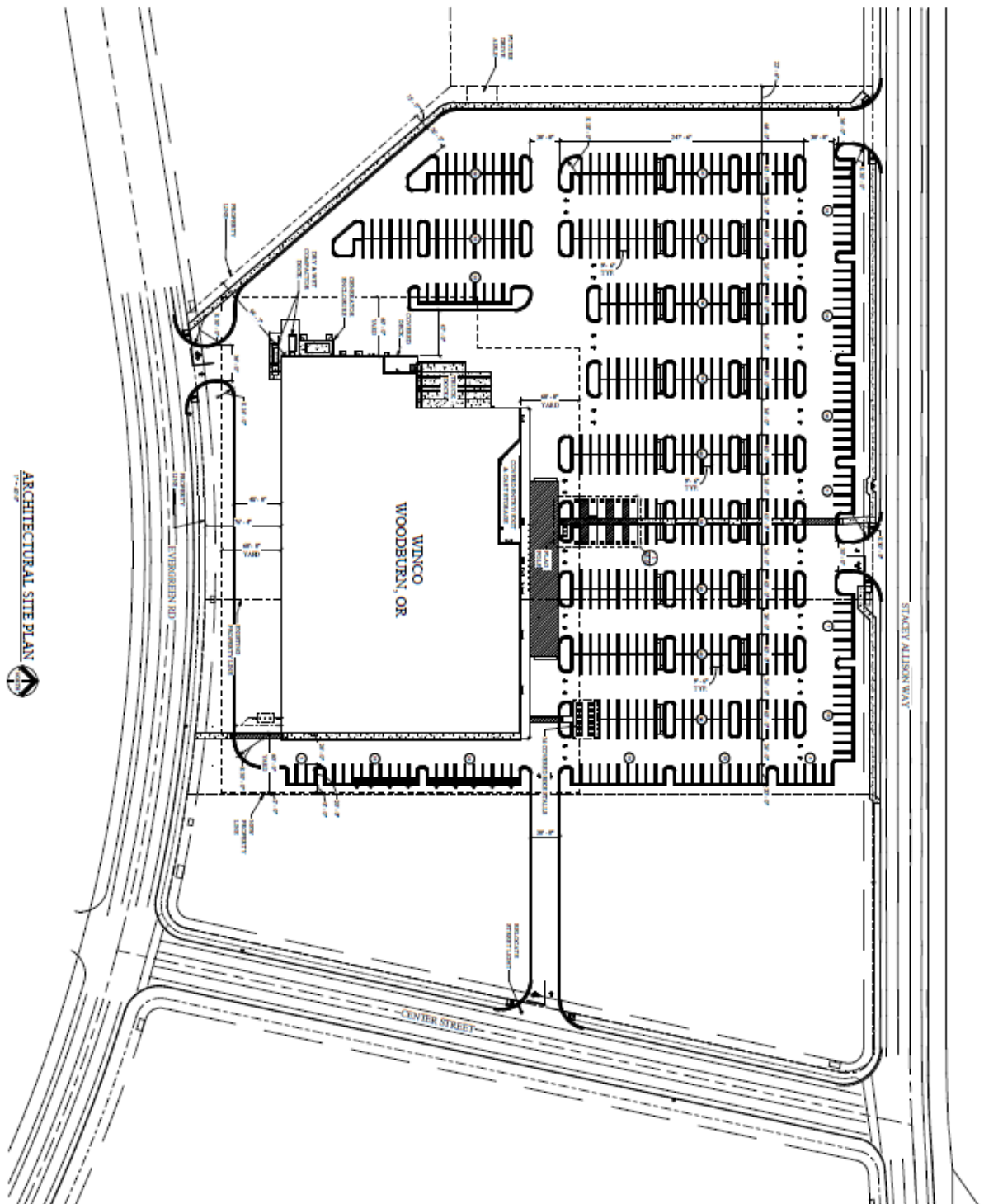
- I-5 SB Ramps at Highway 219
- I-5 NB Ramps at Highway 219
- Highway 214 at Evergreen Road
- Highway 214 at Oregon Way
- Highway 214 at Boones Ferry Road

City of Woodburn Intersections

- Stacy Allison Way at Evergreen Road
- Hayes Street at Evergreen Road
- Harvard Drive at Evergreen Road
- Hooper Street at Evergreen Road
- Hayes Street at Settlemier Avenue
- Parr Road at Settlemier Avenue
- Evergreen Road at Parr Road
- Parr Road at Butteville Road

Operational analysis included in this report has been prepared during the AM and PM peak hour conditions. The study intersection located on City facilities will include analysis for the existing 2025 and forecasted operations in the 2026 without and with the proposed project. The study intersections on ODOT facilities will include analysis for the existing 2025 and forecasted operations in the 2026 and 2040 horizon years without and with the proposed project.

FIGURE 2. PRELIMINARY SITE PLAN



3 EXISTING CONDITIONS

3.1 AREA LAND USES

The proposed WinCo Foods will be located on undeveloped property within the Interchange Management Overlay District along Stacy Allison Way. The project site has a land use designation of Commercial. The adjacent land uses include commercial and residential.

3.2 ROADWAY INVENTORY

3.2.1 OR 214/OR 219

OR 214/216 is classified by ODOT as district highway. Within the study area, this roadway has a posted speed limit of 30 mph. This roadway provides two travel lanes in each direction between Butteville Road and Oregon Way, east of Oregon Way the road narrows to provide one travel lane in each direction with a two-way-left-turn-lane (TWLTL).

3.2.1 EVERGREEN ROAD

Evergreen Road is a north-south minor arterial that provides one lane in each direction with a two-way-left-turn-lane (TWLTL). This roadway has a posted speed limit of 25 mph.

3.2.2 BOONES FERRY ROAD/SETTLEMIER AVENUE

Boones Ferry Road/Settlemer Avenue is a north-south minor arterial that provides one lane in each direction with a speed limit of 25 mph.

3.2.3 STACY ALLISON WAY

Stacy Allison Way is a north-south service collector with a speed limit of 25 mph. This roadway provides one travel lane in each direction with a two-way-left-turn-lane (TWLTL).

3.2.4 HAYES STREET

Hayes Street is an east-west service collector providing one travel lane in each direction. This roadway has a posted speed limit of 25 mph.

3.2.5 PARR ROAD

Parr Road is an east-west service collector/minor arterial with a speed limit of 25 mph. This roadway provides one travel lane in each direction, a two-way-left-turn-lane (TWLTL) is provided between Stubb Road and Boones Ferry Road/Settlemer Avenue.

3.2.6 HARVARD DRIVE

Harvard Drive is north-south access street with a speed limit of 25 mph. This roadway provides one travel lane in each direction.

3.2.7 BUTTEVILLE ROAD

Butteville Road is north-south minor arterial with a speed limit of 55 mph. This roadway provides one travel lane in each direction.

A summary of the existing intersection channelization and control type for each of the study intersections is provided in **Figure 3**.

3.3 TRAFFIC VOLUME DATA

TC2 Traffic Count Consultants, a transportation data collection service, provided AM and PM peak period turning movement counts at the study area intersections. The counts were conducted on Tuesday, July 22, 2025, and Wednesday, July 23, 2025, between 7:00 AM and 9:00 AM for the morning peak and between 4:00 PM and 6:00 PM for the evening peak period. The turning movement count diagrams are provided in **Appendix A**.

3.3.1 SEASONAL ADJUSTMENT

The Oregon DOT *Analysis Procedures Manual* (APM) Chapter 5 provides guidance for performing seasonal adjustments to traffic volume data to develop 30th highest hourly design volumes (30 HV). Data from the seasonal trend table (updated 8/13/2024) was reviewed to identify the appropriate traffic count seasonal adjustment factors. The seasonal trend data for Commuter and Summer were used. Following procedures in the APM, the data month (July 15th) and the seasonal trend peak period factor were used to calculate the adjustment values.

The seasonal adjustment factor of 1.015, which is the average of the Commuter and Summer adjustment values, was applied to the raw traffic counts at the ODOT study intersections to develop the seasonally adjusted volumes that are used in this Traffic Impact Analysis. **Table 1** provides seasonal adjustment calculations.

TABLE 1. SEASONAL ADJUSTMENT FACTOR CALCULATIONS

Trend	Data Month (July 15)	Seasonal Trend Peak Period Factor	Adjustment Factor
Commuter	0.9666	0.9376	1.030
Summer	0.8449	0.8449	1.000
Average	-	-	1.015

3.3.2 SCHOOL ADJUSTMENT

Due to the counts being collected while schools were not in session, a review of traffic volumes collected in September 2024, as part of the Mill Creek Meadows TIA, was conducted to calculate an adjustment factor to apply to the existing counts at the City study intersections. The existing count volumes at the intersection of Parr Road/Settlemer Avenue and Hayes Street/Settlemer Avenue were compared to the 2024 counts. Based on this comparison, an adjustment factor of 2.0 was applied to the AM counts and 1.1 to the PM counts to develop the school adjusted volumes. The school adjustment growth was then reviewed and, for select movements along Evergreen Road in the AM peak hour, adjusted based on the existing volume counts and the reduced impact of school traffic activity.

3.4 OTHER TRANSPORTATION MODES

3.4.1 TRANSIT SERVICE

Woodburn Transit Systems (WTS) provides public transportation within the City of Woodburn. Service is typically provided Monday through Friday from 8:00am to 6:00pm with shorter operating hours on the

weekend. The closest transit stop is located near Walmart along Harvard Drive, approximately 0.40 miles east of the project site.

3.4.2 PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks and bike lanes are currently provided along the project frontages on Evergreen Road, Center Street and Stacy Allison Way and along most roadways within the study area.

3.5 CRASH HISTORY

3.5.1 CRASH ANALYSIS

ODOT crash data records were reviewed to determine if any crashes had occurred in the study area over the five-year period from January 1, 2020 to December 31, 2024. A crash frequency rate per Millions of Entering Vehicles (MEV) was calculated for the study intersections.

The average daily traffic entering the study intersection was estimated by adding the entering PM peak hour turning movements and multiplying by a factor of 10. We have summarized the crash data for the study intersections in **Table 2**.

TABLE 2. CRASH RATES BY STUDY INTERSECTION

Intersection	Total Number of Reported Crashes	Total Daily Entering Traffic	Crashes per MEV	ODOT 90 th Percentile Rate
I-5 SB Ramps at Highway 219	28	32,000	0.479	0.509
I-5 NB Ramps at Highway 219	28	32,630	0.470	0.509
Highway 214 at Evergreen Road	36	29,970	0.658	0.860
Highway 214 at Oregon Way	11	22,310	0.270	0.860
Highway 214 at Boones Ferry Road	4	25,310	0.087	0.860
Stacy Allison Way at Evergreen Road	4	11,390	0.192	0.293
Hayes Street at Evergreen Road	4	11,130	0.197	0.408
Harvard Drive at Evergreen Road	13	8,370	0.851	0.408
Hayes Street at Settlemier Avenue	6	12,660	0.260	0.509
Hooper Street at Evergreen Road	2	1,430	0.766	0.293
Evergreen Road at Parr Road	0	2,550	0.000	0.408
Parr Road at Settlemier Avenue	8	8,110	0.541	0.408
Parr Road at Butteville Road	3	6,380	0.258	0.475

Within the study area, there are three intersections that have a crash rate greater than ODOT's 90th percentile crash rate. There were no fatal crashes reported in the study area. The intersections exceeding ODOT's 90th percentile crash rates are described below:

- **Harvard Drive at Evergreen Road**

This intersection experienced 13 crashes over the 5 year period and has a crash rate of 0.851 which exceeds ODOT's 90th percentile rate of 0.408 for this intersection type. Over 70% of the crashes were reported as angle collisions. No serious injury or fatal crashes were reported. The City has identified intersection improvements, such as installing a traffic signal.

- **Hooper Street at Evergreen Road**

This intersection experienced 2 crashes over the 5 year period and has a crash rate of 0.766 which exceeds ODOT's 90th percentile rate of 0.293 for this intersection type. One crash involved turning movements and one involved a vehicle hitting an object. No serious injury or fatal crashes were reported. Due to the minimal crashes, and low traffic volumes, no crash pattern was identified.

- **Parr Road at Settlemier Avenue**

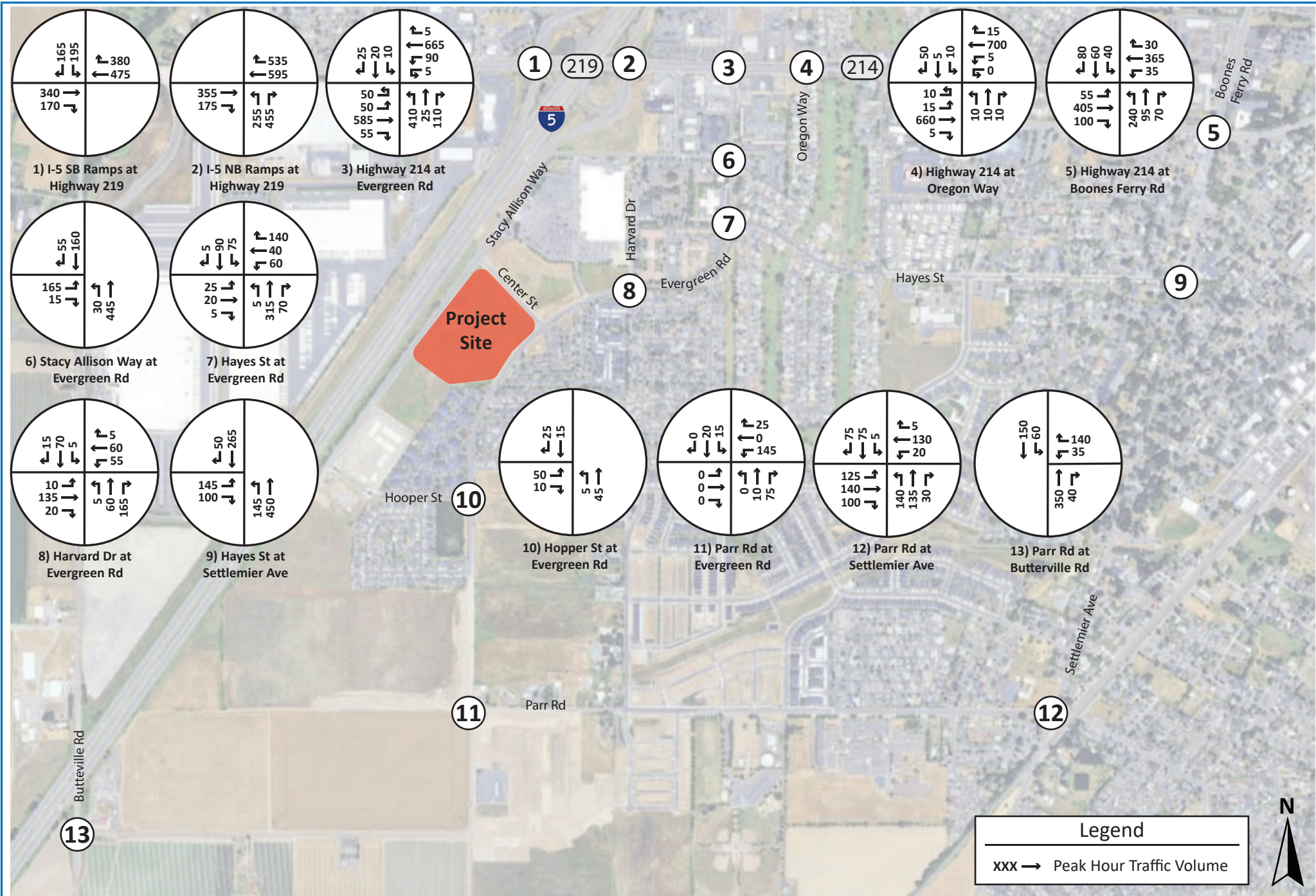
This intersection experienced 9 crashes over the 5 year period and has a crash rate of 0.541 which exceeds ODOT's 90th percentile rate of 0.408 for this intersection type. Approximately 75% of the crashes were reported as either angle crashes (3 crashes) or turning movements (3 crashes). No serious injury or fatal crashes were reported. The City of Woodburn TSP identifies intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout at this location.

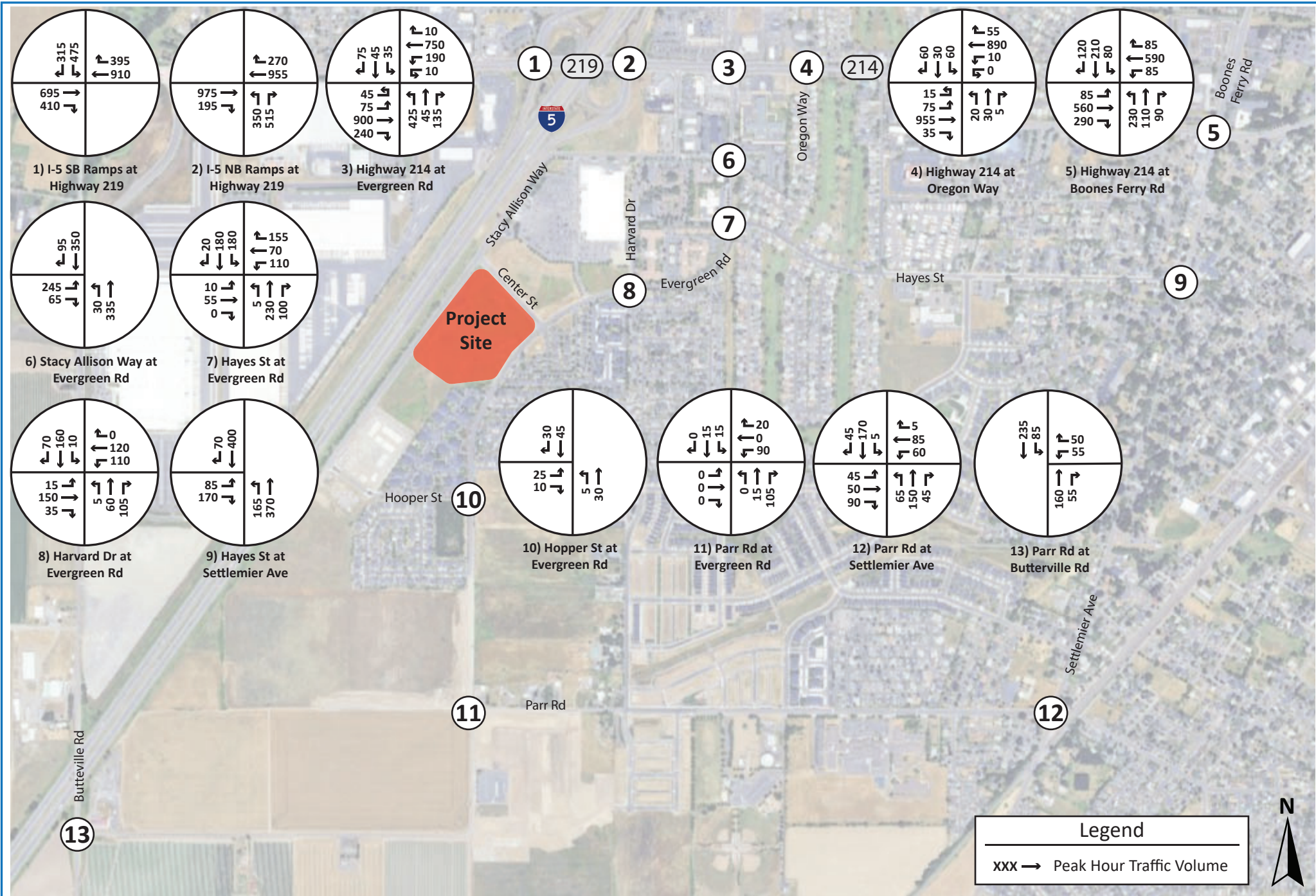
3.5.2 ODOT SPIS SUMMARY

The ODOT Region 2 2023 SPIS list, which includes data from 2020, 2021 and 2022, was reviewed for the study intersections. Two locations are listed in the top 15% SPIS groups:

- Evergreen Road at Highway 214.
- Oregon Way at Highway 214

The crash analysis, provided in section 3.5.1, did not present crash rates exceeding ODOT's 90th percentile rates for these two locations.





4 PROJECT TRAFFIC CHARACTERISTICS

The project-related characteristics having the most effect on area traffic conditions are peak hour trip generation and the directional distribution of traffic volumes on the surrounding roadway network.

4.1 SITE-GENERATED TRAFFIC VOLUMES

Vehicle trip generation was estimated using the rates contained in the 11th edition of the *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE). For the proposed Woodburn WinCo Foods project, the land-use category “Supermarket” (land use code 850) was used.

Pass-By

It is anticipated that this project will attract some traffic from people already driving on the area roadways. These trips are not new trips added to the local roadways (primary trips) but represent “pass-by” trips according to the following definition:

Pass-by trips: Pass-by trips are trips made as an intermediate stop from an origin to a primary destination (i.e., stopping to shop on the way home from work) by vehicles passing directly by the project driveway.

The 11th edition of the *Trip Generation Manual* by ITE provides data on pass-by characteristics for certain land use categories. The pass-by percentage for Supermarket during the PM peak hour is 24%.

The trip generation rates, as contained in the 11th edition of the *Trip Generation Manual*, used for the proposed project are shown in **Table 3**. For this analysis, the “fitted-curve” equation was used when available to estimate trips in preference to using the average trip rate as this approach was recommended by ITE.

4.1.1 TRIP GENERATION RATES

The trip generation rates used for the Supermarket land use category are shown in **Table 3**.

TABLE 3. ITE TRIP GENERATION RATES FOR SUPERMARKET

Peak Period	Unit	Trip Rate	Pass-by %	Enter %	Exit %
AM Peak Hour	1,000 sq ft	2.86	0%	59%	41%
PM Peak Hour	1,000 sq ft	7.94 ¹	24%	50%	50%
Daily	1,000 sq ft	89.62 ¹	2% ²	50%	50%

1. Fitted curve equation rate
2. Equivalent to the PM peak hour pass by volume

4.1.2 ESTIMATED TRIP GENERATION

The total trip generation expected from this project is calculated by applying the unit measure for the land use category to the appropriate trip generation rate. The trip generation for the proposed WinCo Foods project is shown in **Tables 4** below.

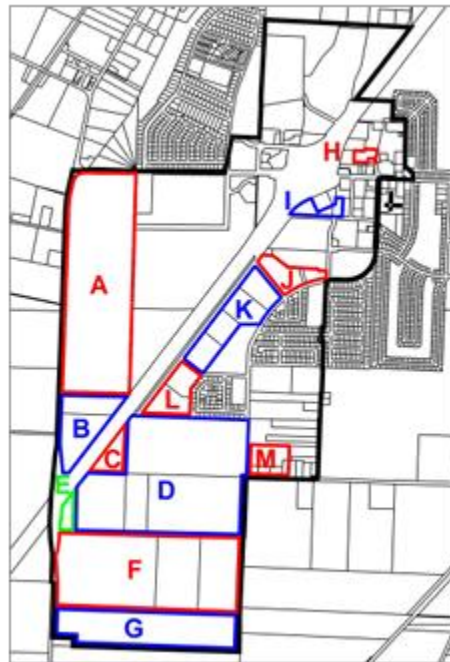
TABLE 4. PROJECT TRIP GENERATION

Peak Period	Size	Total Trips	Pass-by	New-to-Network Trips		
				Total	Enter	Enter
AM Peak Hour	86.60	248	0	248	146	102
PM Peak Hour	86.60	688	165	523	262	261
Daily	86.60	7,761	165 ¹	7,596	3,798	3,798

1. This is equal to the PM peak hour pass-by volumes. The total daily pass-by volume is expected to be higher.

4.2 INTERCHANGE MANAGEMENT AREA OVERLAY DISTRICT

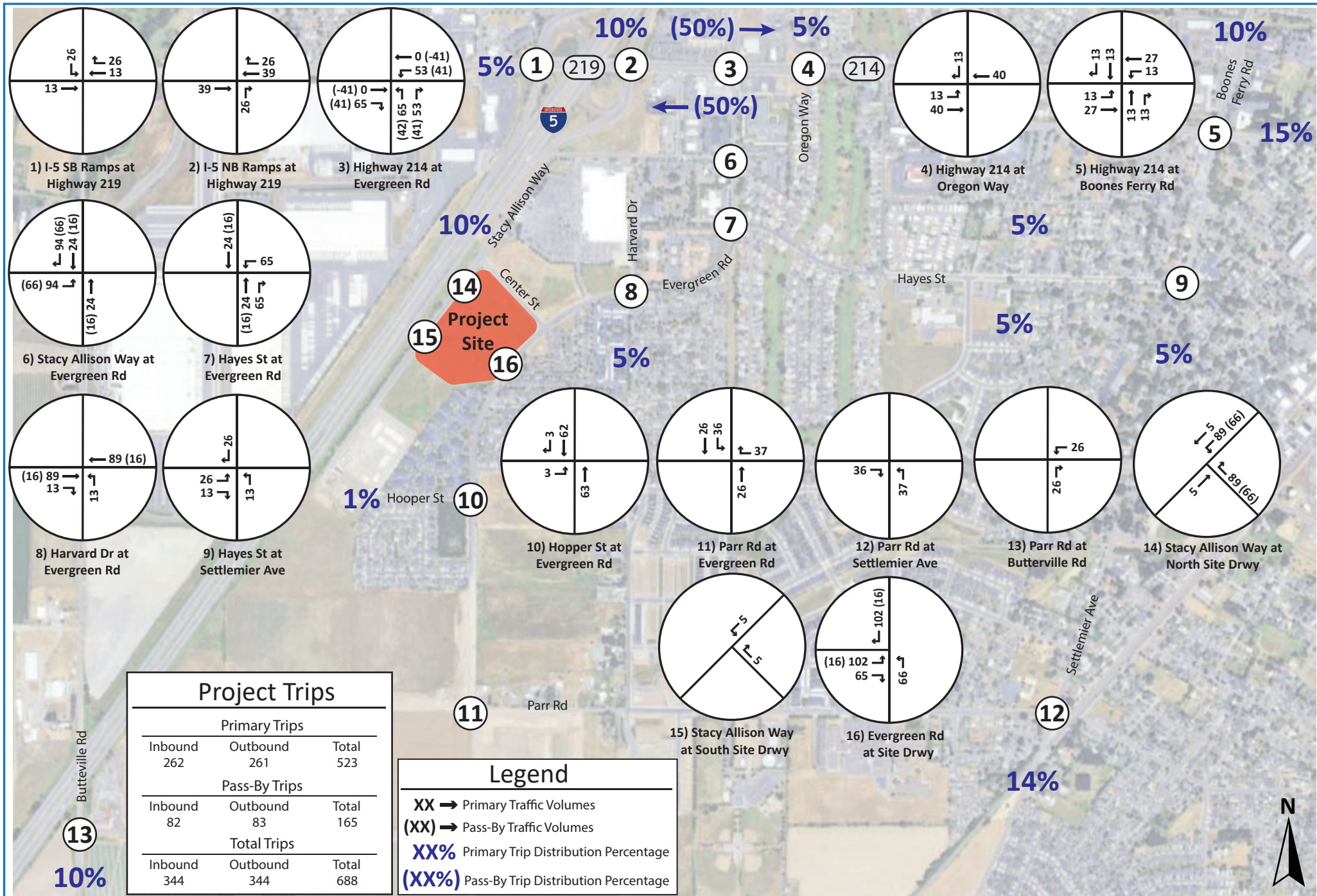
The Woodburn Development Ordinance (WDO), section 2.05.02 describes the purpose and applicability of the Interchange Management Area Overlay District (IMA). The IMA is intended to preserve the long-term capacity of the I-5/Highway 214 interchange. Peak hour vehicle trip budgets were allocated to the parcels within the IMA. The trip budgets are based on 11 peak hour trips per developed industrial acre and 33 peak hour trips per developed commercial acre. The IMA boundary and subareas are shown below.



The proposed WinCo Foods project is located within subarea K on lots 052W12C02100 and 052W12C02200. Per the Vehicle Trip Budget by Parcel (Parcel Budget) Table 2.05A of the WDO, the WinCo project site has 429 maximum peak hour vehicle trips, which includes the WinCo site and the adjacent future commercial pads. Pursuant to WDO section 2.05.02 G.2(a), development may exceed the identified Parcel Budget. The proposed project will continue to coordinate with City staff regarding the available trip allocation for the project.

4.3 SITE TRAFFIC SITRIBUTION AND ASSIGNMENT

For this study, the regional distribution of traffic to and from the proposed project was estimated based on locations and densities of the existing residential neighborhoods and employment areas. The regional traffic distribution percentages and site traffic assignment for the proposed development are shown in **Figure 6** for the AM peak hour and **Figure 7** for the PM peak hour.



5 FUTURE TRAFFIC CONDITIONS

5.1 ROADWAY NETWORK IMPROVEMENTS

The City of Woodland Transportation System Plan (2019-2039) identifies the following roadway improvements within the project vicinity:

- R3 – OR 214 from Cascade Drive to OR 99E. Widen roadway to include two lanes in each direction and a two-way left-turn lane, including changes to signal timing as appropriate, in coordination with ODOT (and in conjunction with bicycle facility improvements)
- R6 – Butteville Road from OR 219 to southern UGB. Upgrade to Minor Arterial urban standards including bicycle and pedestrian enhancements.
- R8 – OR 214/I-5 SB Ramp Intersection. Investigate corridor signal timing and coordination adjustments in coordination with ODOT.
- R9 - OR 214/I-5 NB Ramp Intersection. Investigate corridor signal timing and coordination adjustments in coordination with ODOT.
- R10 - OR 214/Evergreen Road Intersection. Investigate corridor signal timing and coordination adjustments in coordination with ODOT.
- R11 - - OR 214/Oregon Way/Country Club Road Intersection. Investigate corridor signal timing and coordination adjustments in coordination with ODOT.
- R15 – Parr Road/Settlemyer Avenue intersection. Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout.
- S8 – Butteville Road/Parr Road. Modify intersection to address existing sight distance and geometric limitations.

In addition to the projects listed above, City staff have identified intersection improvements for the following locations:

- Evergreen Road at Stacy Allison Way – Install intersection capacity improvement such as traffic signal.
- Evergreen Road at Hayes Street – Install intersection capacity improvement such as traffic signal.
- Evergreen Road at Harvard Drive – Install intersection capacity improvement such as traffic signal.

5.2 FUTURE TRAFFIC VOLUMES

Traffic volume forecasts were prepared for weekday AM peak hour and PM peak hour conditions for the 2026 and 2040 horizon years for ODOT intersections and for the 2026 horizon year for City of Woodburn intersections. The future traffic volume forecast includes non-specific background traffic growth, pipeline development projects and estimated traffic generated by the proposed *WinCo Foods* project.

Future year non-project related traffic volumes were estimated based on a background traffic growth rate of 0.50% for City streets, which was provided by City Staff, and 0.50% for ODOT facilities which was calculated using ODOT's future volume table.

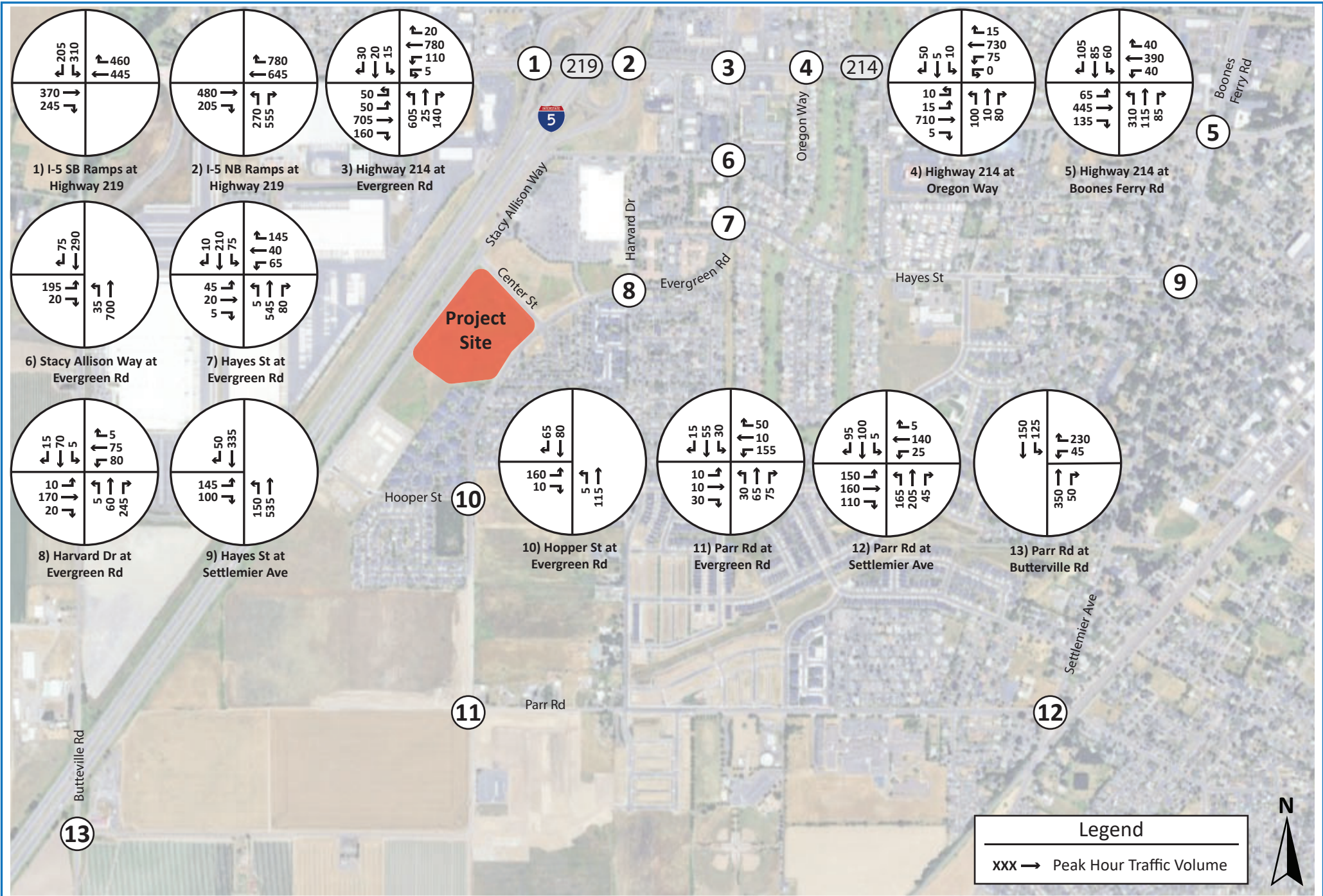
In addition to the background traffic growth, the following pipeline development projects have been identified near the study area and have been included in the forecast:

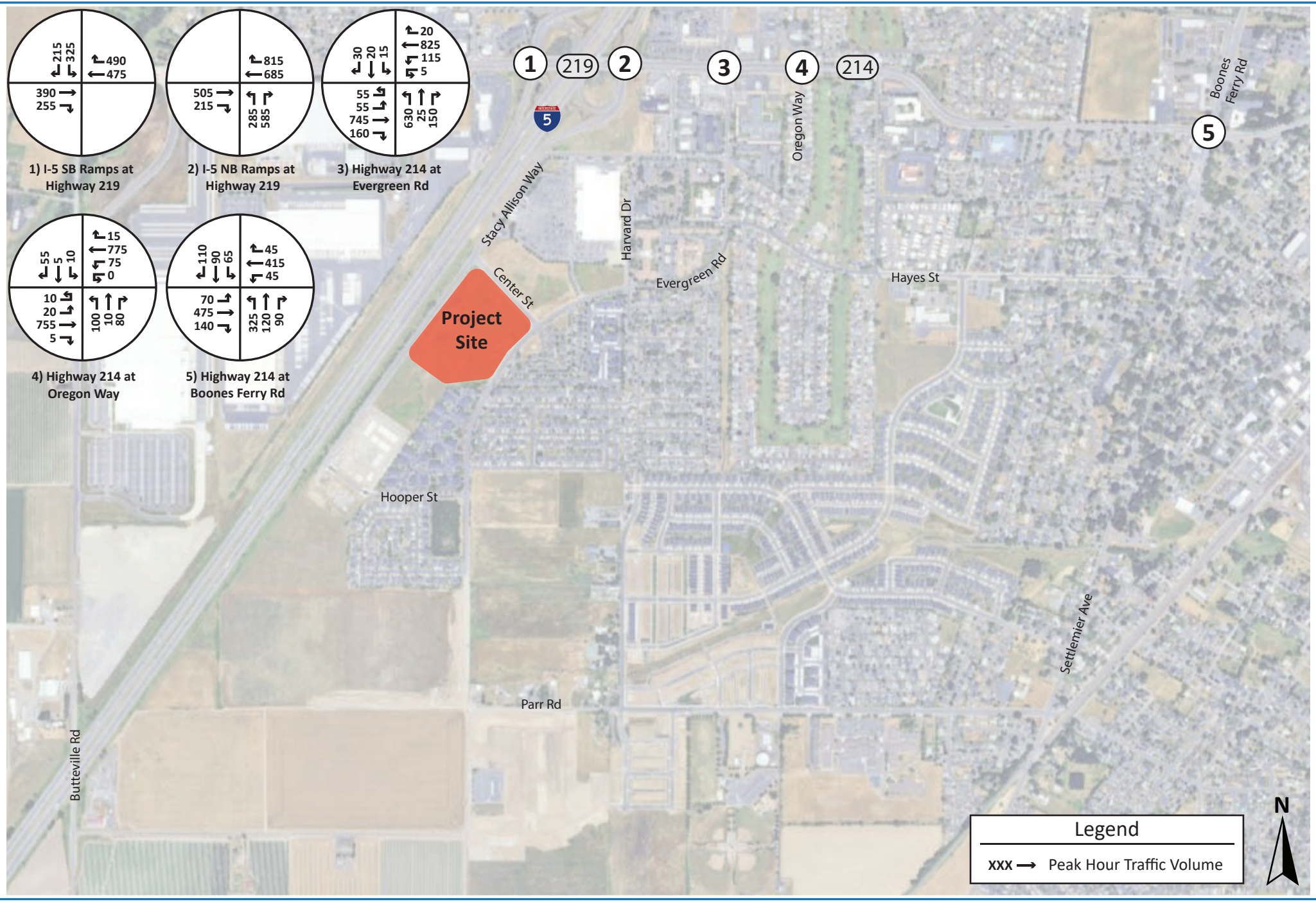
- Allison Way Apartments (Phases 1 & 2)
- Specht Industrial Development
- Brighton Pointe Subdivision (Phases 1 & 2)
- 9008 Parr Rd Subdivision (assumed 75% complete)
- Smith Creek Development (assumed 75% complete)
- Unitus Community Credit Union
- US Market Gas Station (Newberg Hwy location)
- Mill Creek Meadows subdivision
- Mill Creek Meadows II subdivision
- Dove Landing subdivision (assumed 50% complete)
- Marion Pointe subdivision (assumed 50% complete)
- Commerce Way Industrial Park
- Boones Crossing Townhouses
- Parr Rd Cottages

In addition to these two sources of traffic volume growth, the recently completed extension of Evergreen Road south to Parr Road was incorporated. It is expected that this connection will result in a shift in traffic for existing volumes as well as the pipeline development projects located along Evergreen Road and south of the project. To account for this connection 10% of the volume travelling to/from Evergreen Road from west OR 214 was shifted to this southern connection, presumed to use Parr Road and Butteville Road to travel west.

The projected 2026 and 2040 traffic volumes without the WinCo Foods project are shown in **Figures 8 - 11**. The 2026 and 2040 traffic volumes including project traffic are shown in **Figures 12-15**.

The traffic volume calculations for the study intersections are included in **Appendix B**.

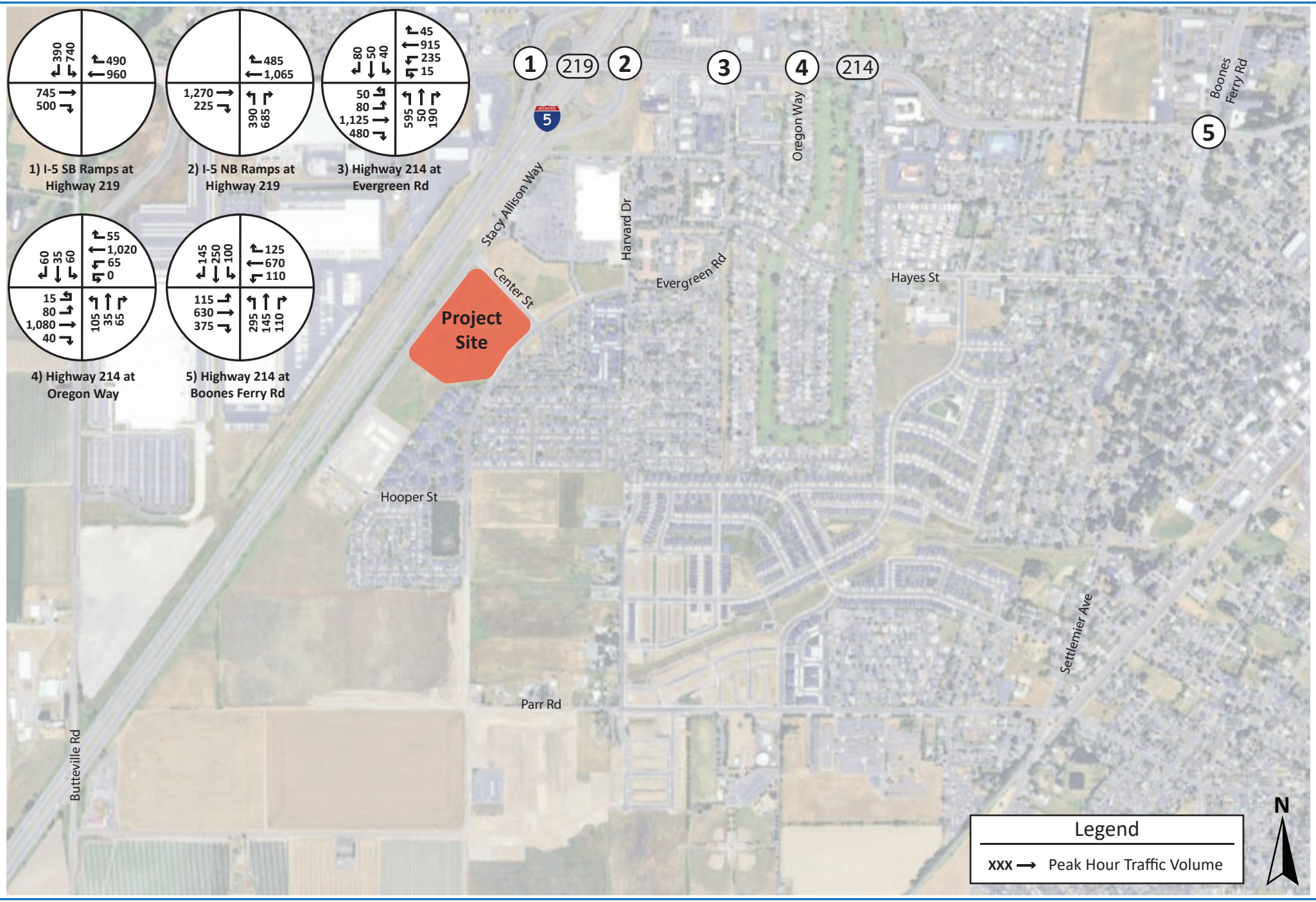




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Figure 10
Projected 2040 AM Peak Hour
Traffic Volumes without Project



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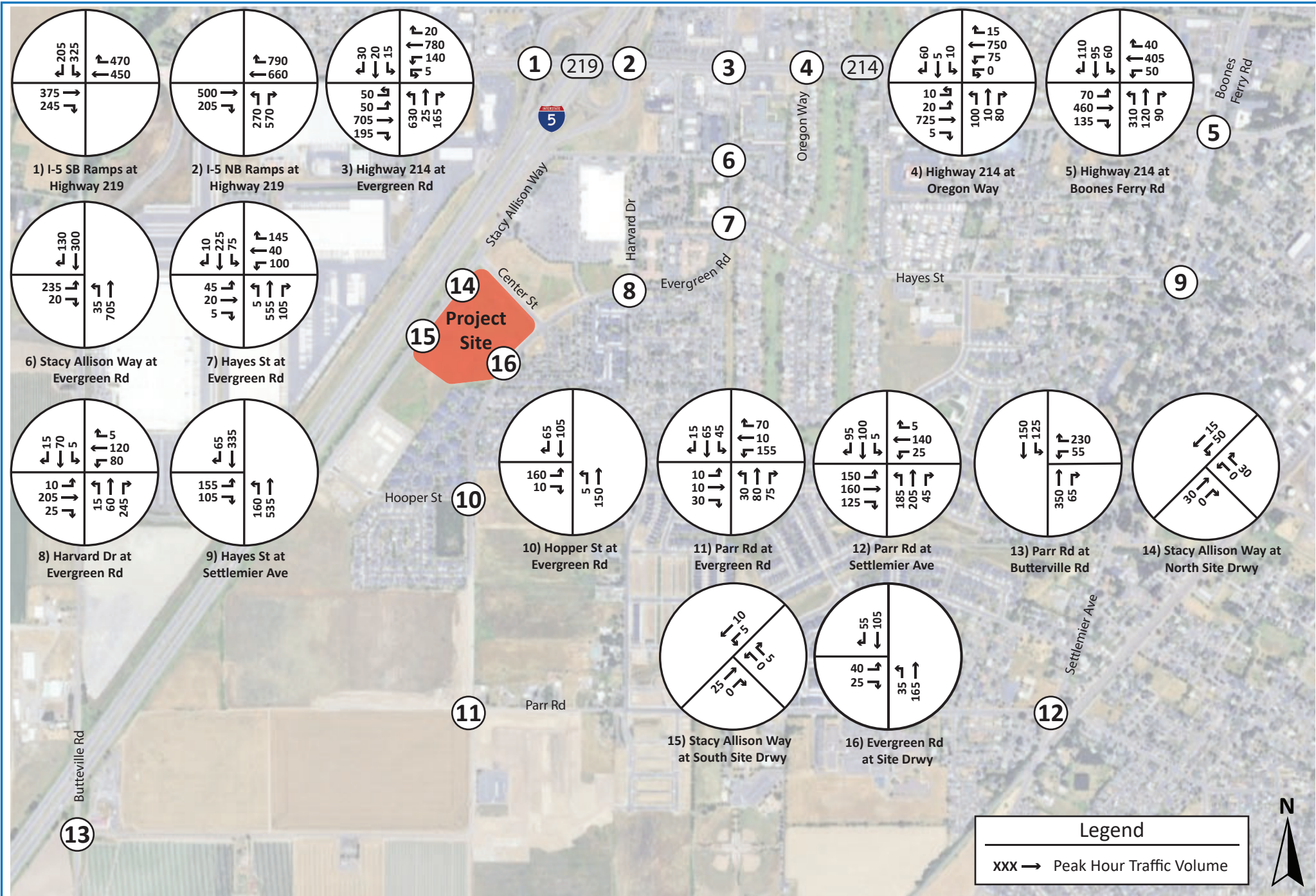
Woodburn, OR

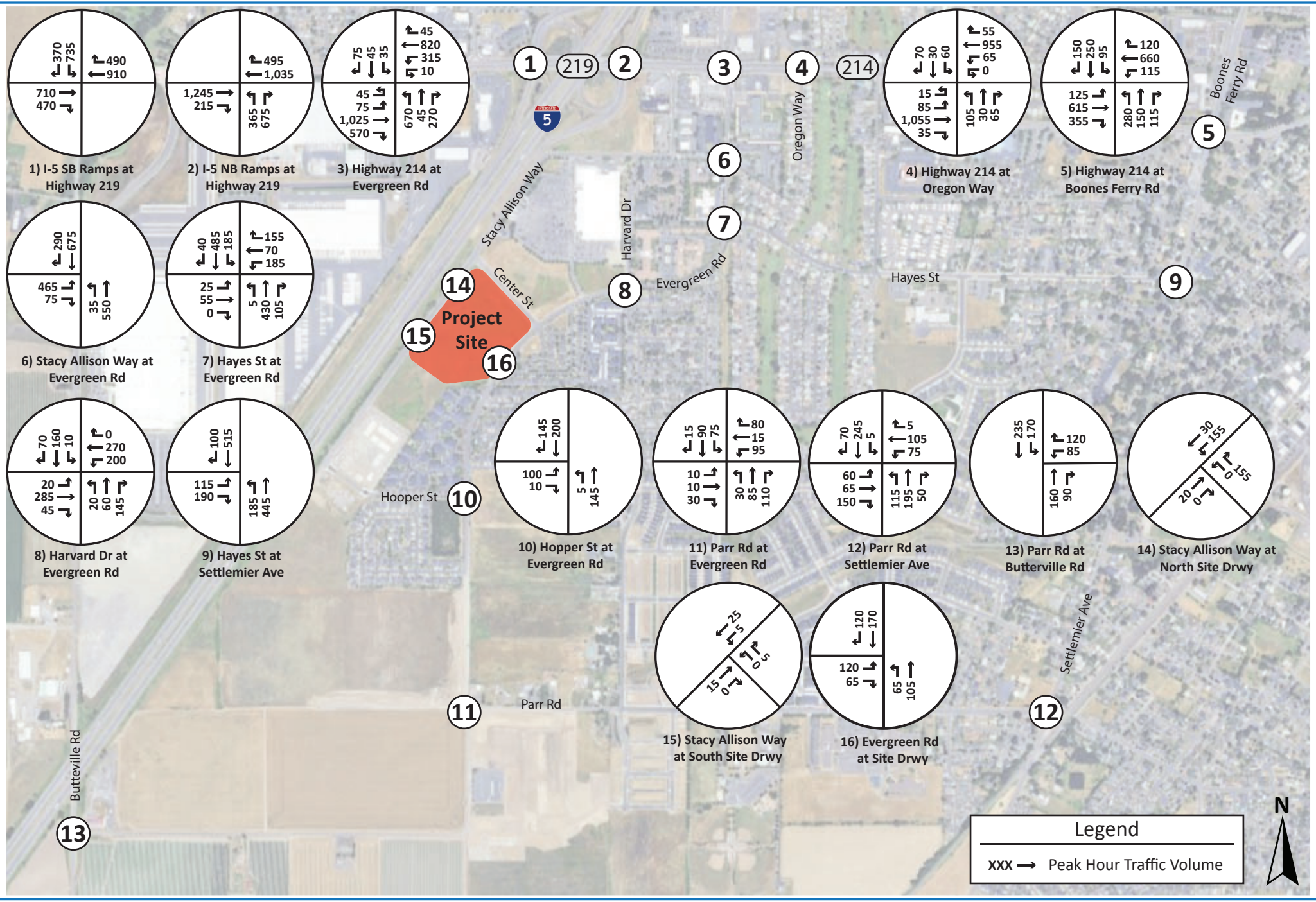
Traffic Impact Analysis

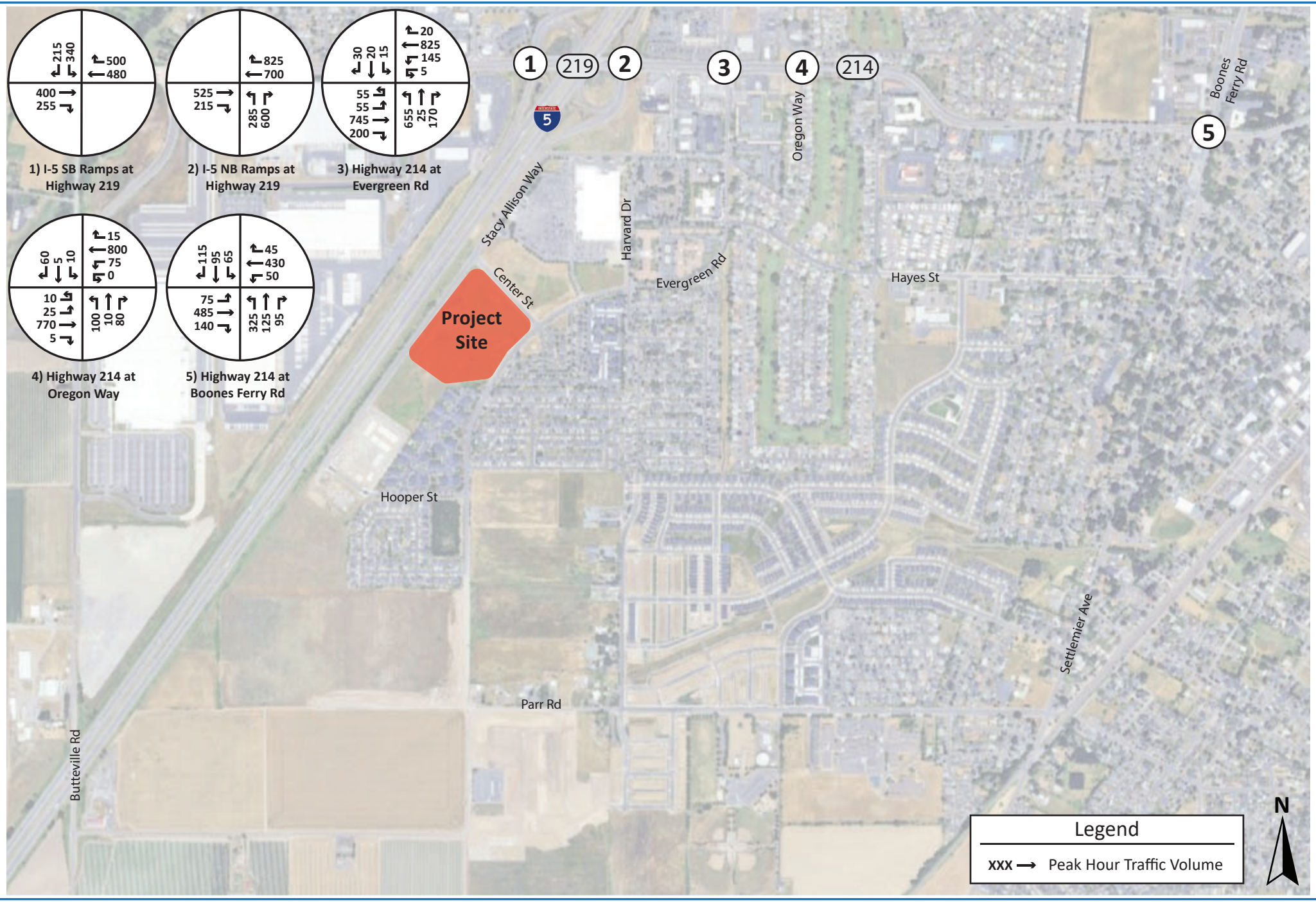
Figure 11

Projected 2040 PM Peak Hour

Traffic Volumes without Project



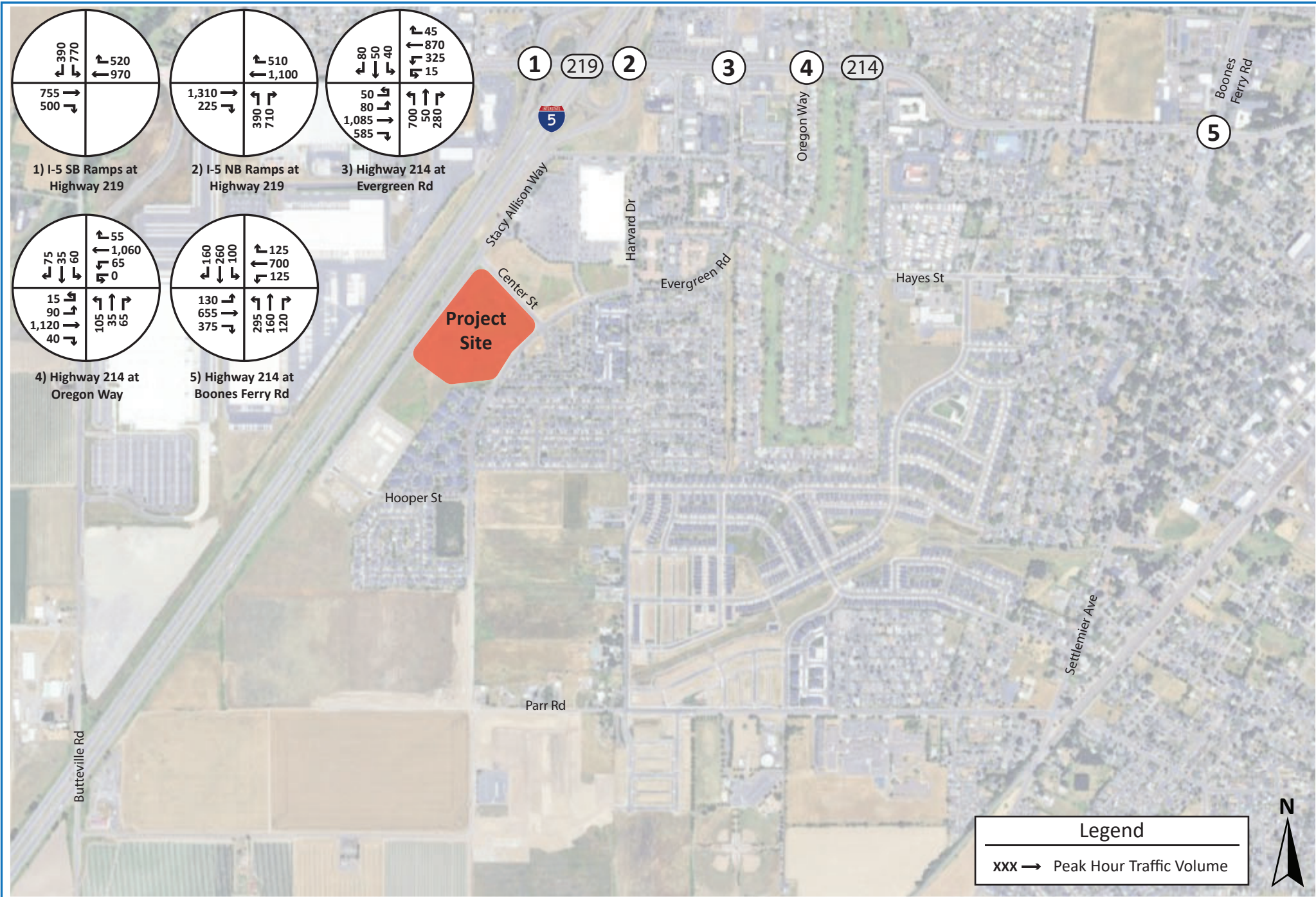




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WinCo Foods
Woodburn, OR
Traffic Impact Analysis

Figure 14
Projected 2040 AM Peak Hour
Traffic Volumes with Project



6 TRAFFIC OPERATIONS ANALYSIS

Traffic analyses were conducted to identify any deficiencies within the study area for the PM peak hour in the 2025 base year and the 2026 and 2040 horizon years. The AM and PM peak hours were selected as the traffic analysis periods that represent the highest potential traffic conditions on area roadways.

6.1 LEVEL OF SERVICE

The acknowledged source for determining operational performance for arterial segments and independent intersections is the current edition of the *Highway Capacity Manual* (HCM). Intersection analysis was performed using the Synchro software package (version 12). This software implements the methods of the 7th edition HCM. Since the HCM 7 methodology does not provide intersection v/c ratios and does not accurately account for U-turns, the HCM 2000 methodology was used when warranted.

Operations analysis results are described in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion).

The following operating standards apply to the study intersections:

ODOT Intersections:

- OR 214/219 is a district highway which has a v/c target of 0.95.

City of Woodburn Intersections:

- For a signalized and all-way stop-control intersection, the minimum LOS shall be either "E" or if pre-development already operating at lower LOS, then at no lower LOS.
- For a signalized intersection, the minimum V/C ratio shall be either less than 1.00 regardless of LOS or if pre-development already operating at 1.00 or higher V/C, then at no higher V/C.
- For an unsignalized intersection, the minimum V/C shall be 0.95 or lower for the major movement through the intersection, or, if pre-development already operating at higher V/C, then at no higher V/C.

6.2 INTERSECTION OPERATIONS

For signalized, all-way stop, and roundabout controlled intersections, the overall LOS grade represents the weighted average of all movements at the intersection. For intersections under minor street stop-sign control, the LOS of the most difficult movement (typically the minor street left turn) represents the intersection level of service. The LOS/delay criteria for stop sign-controlled intersections are different than for signalized intersections because driver expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay.

Table 5 shows the Level of Service criteria for stop-controlled intersections and signalized intersections.

TABLE 5. LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	Signalized/Roundabout Intersection Average Control Delay (seconds/vehicle)	Stop-Controlled Intersection Average Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

6.3 INTERSECTION ANALYSIS

The analysis was conducted during the AM peak hour and PM peak hour for the following scenarios:

ODOT intersections

- Existing 2025 traffic volumes
- Projected 2026 traffic volumes without and with the Project
- Projected 2040 traffic volumes without and with the Project

City of Woodburn intersections

- Existing 2025 traffic volumes
- Projected 2026 traffic volumes without and with the Project

The intersection control and channelization are documented earlier in this report in Figure 3. The LOS analysis worksheets are included in **Appendix C**.

6.3.1 ODOT INTERSECTION OPERATIONS ANALYSIS

2025 INTERSECTION OPERATIONS ANALYSIS

Table 6 presents a summary of traffic operations analysis results for the ODOT study intersections in the 2025 base year AM peak hour. As indicated in the table, all study area intersections are currently operating within their LOS standard.

TABLE 6. 2025 EXISTING AM PEAK HOUR INTERSECTION OPERATIONS – ODOT INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	V/C	Delay	LOS
1	I-5 SB Ramps at Highway 219	Signal	V/C 0.95	0.33	14.3	B
2	I-5 NB Ramps at Highway 219	Signal	V/C 0.95	0.34	18.5	B
3	Highway 214 at Evergreen Road	Signal	V/C 0.95	0.56	30.7	C
4	Highway 214 at Oregon Way	Signal	V/C 0.95	0.32	11.4	B
5	Highway 214 at Boones Ferry Road	Signal	V/C 0.95	0.67	20.2	C

Table 7 presents a summary of traffic operations analysis results for the ODOT study intersections in the 2025 base year PM peak hour. As indicated in the table, all study area intersections are currently operating within their LOS standard.

TABLE 7. 2025 EXISTING PM PEAK HOUR INTERSECTION OPERATIONS – ODOT INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	V/C	Delay	LOS
1	I-5 SB Ramps at Highway 219	Signal	V/C 0.95	0.51	15.3	B
2	I-5 NB Ramps at Highway 219	Signal	V/C 0.95	0.57	17.5	B
3	Highway 214 at Evergreen Road	Signal	V/C 0.95	0.75	33.7	C
4	Highway 214 at Oregon Way	Signal	V/C 0.95	0.51	17.9	B
5	Highway 214 at Boones Ferry Road	Signal	V/C 0.95	0.84	34.5	C

2026 INTERSECTION OPERATIONS ANALYSIS

For the future conditions analysis, based on the amount of background growth forecasted along Highway 214/Highway 219, select locations were optimized for the 2026 baseline and with project conditions.

Table 8 presents a summary of traffic operations analysis results for the ODOT study intersections for the AM peak in the 2026 horizon year without and with project traffic. Based on the amount of background growth forecasted along Highway 214/Highway 219, select locations were optimized to the 2026 baseline and with project conditions. As indicated in the table, all study area intersections are projected to operate within their LOS standard.

TABLE 8. 2026 AM PEAK HOUR INTERSECTION OPERATIONS – ODOT INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	Without Project			With Project		
				V/C	Delay	LOS	V/C	Delay	LOS
1	I-5 SB Ramps at Highway 219	Signal	V/C 0.95	0.41	17.1	B	0.42	17.3	B
2	I-5 NB Ramps at Highway 219	Signal	V/C 0.95	0.37	18.6	B	0.38	18.6	B
3	Highway 214 at Evergreen Road	Signal	V/C 0.95	0.71	32.1	C	0.75	33.1	C
4	Highway 214 at Oregon Way	Signal	V/C 0.95	0.44	22.7	C	0.45	22.7	C
5	Highway 214 at Boones Ferry Road	Signal	V/C 0.95	0.75	26.5	C	0.77	28.6	C

Table 9 presents a summary of traffic operations analysis results for the ODOT study intersections for the PM peak in the 2026 horizon year without and with project traffic. As indicated in the table, all study area intersections are projected to operate within their LOS standard.

TABLE 9. 2026 PM PEAK HOUR INTERSECTION OPERATIONS – ODOT INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	Without Project			With Project		
				V/C	Delay	LOS	V/C	Delay	LOS
1	I-5 SB Ramps at Highway 219	Signal	V/C 0.95	0.58	18.8	B	0.59	19.0	B
2	I-5 NB Ramps at Highway 219	Signal	V/C 0.95	0.71	22.1	C	0.74	22.7	C
3	Highway 214 at Evergreen Road	Signal	V/C 0.95	0.85	56.9	E	0.94	77.3	E
4	Highway 214 at Oregon Way	Signal	V/C 0.95	0.58	22.3	C	0.59	24.3	C
5	Highway 214 at Boones Ferry Road	Signal	V/C 0.95	0.94	49.3	D	0.94	54.9	D

2040 INTERSECTION OPERATIONS ANALYSIS

For the future conditions analysis, based on the amount of background growth forecasted along Highway 214/Highway 219, select locations were optimized for the 2040 baseline and with project conditions.

Table 10 presents a summary of traffic operations analysis results for the ODOT study intersections for the AM peak in the 2040 horizon year without and with project traffic. As indicated in the table, all study area intersections are projected to operate within their LOS standard.

TABLE 10. 2040 AM PEAK HOUR INTERSECTION OPERATIONS – ODOT INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	Without Project			With Project		
				V/C	Delay	LOS	V/C	Delay	LOS
1	I-5 SB Ramps at Highway 219	Signal	V/C 0.95	0.44	16.9	B	0.45	17.0	B
2	I-5 NB Ramps at Highway 219	Signal	V/C 0.95	0.40	18.8	B	0.41	18.8	B
3	Highway 214 at Evergreen Road	Signal	V/C 0.95	0.75	33.7	C	0.78	35.1	D
4	Highway 214 at Oregon Way	Signal	V/C 0.95	0.46	22.8	C	0.47	22.7	C
5	Highway 214 at Boones Ferry Road	Signal	V/C 0.95	0.79	30.5	C	0.81	32.4	C

Table 11 presents a summary of traffic operations analysis results for the ODOT study intersections for the PM peak in the 2040 horizon year without and with project traffic. As indicated in the table, one intersection is projected to exceed its operating standard in the 2040 horizon with the addition of project traffic. This intersection, Highway 214 at Evergreen Road, is currently identified as R10 in the City’s Transportation System Plan, which states: “Investigate corridor signal timing and coordination adjustments in coordination with ODOT”.

TABLE 11. 2040 PM PEAK HOUR INTERSECTION OPERATIONS – ODOT INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	Without Project			With Project		
				V/C	Delay	LOS	V/C	Delay	LOS
1	I-5 SB Ramps at Highway 219	Signal	V/C 0.95	0.61	18.9	B	0.63	19.3	B
2	I-5 NB Ramps at Highway 219	Signal	V/C 0.95	0.75	23.3	C	0.78	24.1	C
3	Highway 214 at Evergreen Road	Signal	V/C 0.95	0.91	69.0	E	1.00	89.2	F
4	Highway 214 at Oregon Way	Signal	V/C 0.95	0.62	23.1	C	0.63	25.4	C
5	Highway 214 at Boones Ferry Road	Signal	V/C 0.95	0.92	52.6	D	0.95	60.5	E

6.3.2 CITY OF WOODBURN INTERSECTION OPERATIONS ANALYSIS

2025 INTERSECTION OPERATIONS ANALYSIS

Table 12 presents a summary of traffic operations analysis results for the City of Woodburn study intersections in the 2025 base year AM peak hour. As indicated in the table, all study area intersections are currently operating within their LOS standard.

TABLE 12. 2025 EXISTING AM PEAK HOUR INTERSECTION OPERATIONS –WOODBURN INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	V/C	Delay	LOS
6	Stacy Allison Way at Evergreen Road	TWSC ¹	V/C 0.95	0.40	18.1	C
7	Hayes Street at Evergreen Road	AWSC ²	LOS E	0.66	15.3	C
8	Harvard Drive at Evergreen Road	TWSC ¹	V/C 0.95	0.36	13.2	B
9	Hayes Street at Settlemier Avenue	Signal	LOS E V/C 1.00	0.79	10.4	B
10	Hooper Street at Evergreen Road	TWSC ¹	V/C 0.95	0.08	9.4	A
11	Parr Road at Evergreen Road	AWSC ²	LOS E	0.24	8.2	A
12	Parr Road at Settlemier Avenue	AWSC ²	LOS E	0.61	14.8	B
13	Parr Road at Butteville Road	TWSC ¹	V/C 0.95	0.36	15.1	C

1. Two-way-stop-control
2. All-way-stop-control

Table 13 presents a summary of traffic operations analysis results for the City of Woodburn study intersections in the 2025 base year PM peak hour. As indicated in the table, all study area intersections are currently operating within their LOS standard.

TABLE 13. 2025 EXISTING PM PEAK HOUR INTERSECTION OPERATIONS –WOODBURN INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	V/C	Delay	LOS
6	Stacy Allison Way at Evergreen Road	TWSC ¹	V/C 0.95	0.58	23.7	C
7	Hayes Street at Evergreen Road	AWSC ²	LOS E	0.61	15.9	C
8	Harvard Drive at Evergreen Road	TWSC ¹	V/C 0.95	0.34	24.7	C
9	Hayes Street at Settlemier Avenue	Signal	LOS E V/C 1.00	0.84	16.1	B
10	Hooper Street at Evergreen Road	TWSC ¹	V/C 0.95	0.05	9.4	A
11	Parr Road at Evergreen Road	AWSC ²	LOS E	0.17	7.8	A
12	Evergreen Road at Settlemier Avenue	AWSC ²	LOS E	0.39	11.0	B
13	Parr Road at Butteville Road	TWSC ¹	V/C 0.95	0.25	14.6	B

1. Two-way-stop-control
2. All-way-stop-control

2026 INTERSECTION OPERATIONS ANALYSIS

Table 14 presents a summary of traffic operations analysis results for the City of Woodburn study intersections for the AM peak hour in the 2026 horizon year without and with project traffic. As indicated in the table, all study area intersections are projected to operate within their LOS standard, except for the intersection of Hayes Street with Evergreen Road which operates below its standard without and with project traffic. This intersection has been identified by the City of Woodburn as needing intersection capacity improvements such as traffic a signal.

TABLE 14. 2026 AM PEAK HOUR INTERSECTION OPERATIONS – WOODBURN INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	Without Project			With Project		
				V/C	Delay	LOS	V/C	Delay	LOS
6	Stacy Allison Way at Evergreen Road	TWSC ¹	V/C 0.95	0.69	38.2	E	0.85	58.3	F
7	Hayes Street at Evergreen Road	AWSC ²	LOS E	1.24	79.7	F	1.33	103.6	F
8	Harvard Drive at Evergreen Road	TWSC ¹	V/C 0.95	0.50	15.3	C	0.83	34.1	D
9	Hayes Street at Settlemier Avenue	Signal	LOS E V/C 1.00	0.79	10.8	B	0.79	11.3	B
10	Hooper Street at Evergreen Road	TWSC ¹	V/C 0.95	0.26	11.5	B	0.28	12.1	B
11	Parr Road at Evergreen Road	AWSC ²	LOS E	0.32	10.0	A	0.36	10.5	B
12	Evergreen Road at Settlemier Avenue	AWSC ²	LOS E	0.87	24.5	C	0.93	28.8	D
13	Parr Road at Butteville Road	TWSC ¹	V/C 0.95	0.60	21.8	C	0.65	24.7	C
14	North Site Driveway at Stacy Allison Way	TWSC ¹	V/C 0.95	-	-	-	0.03	8.6	A
15	South Site Driveway at Stacy Allison Way	TWSC ¹	V/C 0.95	-	-	-	0.01	8.6	A
16	Site Driveway at Evergreen Road	TWSC ¹	V/C 0.95	-	-	-	0.10	10.5	B

1. Two-way-stop-control
2. All-way-stop-control

Table 15 presents a summary of traffic operations analysis results for the City of Woodburn study intersections for the PM peak hour in the 2026 horizon year without and with project traffic. As indicated in the table, three intersections are projected to exceed their operating standard in the 2026 horizon. Two of these intersections, Stacy Allison Way at Evergreen Road and Hayes Street at Evergreen Road, exceed their standard without and with project while the Harvard Drive at Evergreen Road intersection exceeds its standard with the addition of project traffic. These three intersections have been identified by the City of Woodburn as needing intersection capacity improvements such as traffic signals.

TABLE 15. 2026 PM PEAK HOUR INTERSECTION OPERATIONS – WOODBURN INTERSECTIONS

No	Intersection	Traffic Control	Mobility Standard	Without Project			With Project		
				V/C	Delay	LOS	V/C	Delay	LOS
6	Stacy Allison Way at Evergreen Road	TWSC ¹	V/C 0.95	1.10	121.1	F	1.93	400+	F
7	Hayes Street at Evergreen Road	AWSC ²	LOS E	1.09	60.1	F	1.25	98.5	F
8	Harvard Drive at Evergreen Road	TWSC ¹	V/C 0.95	0.94	79.1	F	1.34	230.3	F
9	Hayes Street at Settlemier Avenue	Signal	LOS E V/C 1.00	0.92	24.4	C	1.00	31.8	C
10	Hooper Street at Evergreen Road	TWSC ¹	V/C 0.95	0.17	11.3	B	0.20	12.3	B
11	Parr Road at Evergreen Road	AWSC ²	LOS E	0.28	9.2	A	0.33	9.8	A
12	Evergreen Road at Settlemier Avenue	AWSC ²	LOS E	0.56	14.4	B	0.65	16.3	C
13	Parr Road at Butteville Road	TWSC ¹	V/C 0.95	0.42	17.7	C	0.54	22.7	C
14	North Site Driveway at Stacy Allison Way	TWSC ¹	V/C 0.95	-	-	-	0.16	9.1	A
15	South Site Driveway at Stacy Allison Way	TWSC ¹	V/C 0.95	-	-	-	0.01	8.5	A
16	Site Driveway at Evergreen Road	TWSC ¹	V/C 0.95	-	-	-	0.06	13.3	B

1. Two-way-stop-control

2. All-way-stop-control

6.4 INTERSECTION ANALYSIS SUMMARY

ODOT INTERSECTIONS

Based on the AM and PM peak hour intersection analysis for the study area, all study intersections are projected to operate within the identified standard in the 2026 opening year and 2040 horizon year without project traffic. During the PM peak hour in the 2040 with project scenario one intersection is expected to exceed the LOS standard: Highway 214 at Evergreen Road. The City has identified in their Transportation System Plan the need to: “Investigate corridor signal timing and coordination adjustments in coordination with ODOT”. This action should provide benefit to the intersection.

CITY OF WOODBURN INTERSECTIONS

Based on the AM and PM peak hour intersection analysis for the study area, three intersections are projected to exceed their operating standard in the 2026 horizon: Stacy Allison Way at Evergreen Road, Hayes Street at Evergreen Road, and Harvard Drive at Evergreen Road. These three intersections have been identified by the City of Woodburn as needing intersection capacity improvements such as traffic signals. Analysis of traffic signal control was conducted at each location for the 2026 with project alternative and each location would improve to operate within the identified standards with traffic signal control added to the existing channelization.

6.5 SITE ACCESS

The Woodburn Development Ordinance (WDO), section 3.04 Table 3.04A summarizes access requirements by land use and roadway classification. The four proposed site driveways were reviewed for concurrency with the minimum spacing standards.

6.5.1 EVERGREEN ROAD SITE DRIVEWAY

According to the access requirements identified within the WDO Table 3.04A, Evergreen Road, which is a minor arterial, has a minimum driveway separation of 245 feet. The proposed driveway location provides more than 245 feet to the north (Stacy Allison Way). To the south, it provides approximately 162 feet measured from edge to edge. The project will work with city staff to provide the necessary variance documentation for the proposed driveway location.

6.5.2 CENTER STREET SITE DRIVEWAY

According to the access requirements identified within the WDO Table 3.04A, Center Street, which is a service collector, has a minimum driveway separation of 50 feet. The proposed driveway is located more than 50 feet from both Evergreen Road and Stacy Allison Way intersections. The minimum access spacing is met.

6.5.3 STACY ALLISON WAY SITE DRIVEWAYS

According to the access requirements identified within the WDO Table 3.04A, Stacy Allison Way, which is a service collector, has a minimum driveway separation of 50 feet. The two driveways proposed along Stacy Allison Way are both located more than 50 feet from existing intersections. The minimum access spacing is met.

6.6 TRANSPORTATION DEMAND MANAGEMENT

The City of Woodburn has identified the need for the proposed WinCo Foods project to prepare a transportation demand management plan. This plan would identify strategies for promoting people travelling to/from the project site to use transportation options other than single occupancy vehicles, such as walking, biking, and using transit. Below is a description of how the project will accommodate and/or encourage these different transportation options.

6.6.1 WALKING

The project site is bounded by Stacy Allison Way, Center Street, and Evergreen Road, which all currently provide sidewalks on both sides of the road. These provide safe walking routes to and from the existing neighborhoods located east and south of the project site. To accommodate these existing pedestrian routes, the project is proposing to provide three on-site pedestrian pathways:

- A pathway with crosswalk striping across drive aisles will be provided at the east driveway on Stacey Allison Way, connecting the road with the store entrance and travelling through a parking aisle, to minimize intersection with circulating vehicles.
- A sidewalk along the eastern side of the building that will extend to Evergreen Road and provide a striped crossing of the rear drive aisle. This path will connect Evergreen Road to the front of the store
- A sidewalk will be provided along the western edge of the property, connecting Stacey Allison Way with Evergreen Road.

With these on-site pedestrian pathways the project is fully supporting pedestrian access to the site.

6.6.2 BIKING

Currently Evergreen Road and Center Street provide on-street bicycle lanes in each direction. Additionally, each of the adjacent roadways have a posted travel speed of 25 mph, which can reasonably accommodate bicycles within the vehicle travel lane. As a grocery store, customers typically make purchases that would not be accommodated by bicycle travel, but employees and customers making small purchases could utilize this travel mode. To accommodate and promote bicycle travel the project proposes to provide 34 on-site bicycle parking stalls. This is below the code requirement of 51 stalls, but given the level of bicycle activity observed at other WinCo Foods stores in the region, should easily accommodate the expected bicycle usage. The bicycle parking area will also have a striped crossing for safe access to and from the store entrance.

6.6.3 TRANSIT

Woodburn Transit Systems currently provides one transit stop in the vicinity of the project site, located approximately 0.40 miles north, near the Walmart store. This stop is served by both the express route and fixed route buses. As growth continues to occur in the southern portion of Woodburn, consideration should be given to additional transit stops on Evergreen Road, nearer to the project site. With the existing and proposed pedestrian facilities a new transit stop on Stacey Allison Way or Evergreen Road should provide safe and convenient transit access to the project.

6.6.4 SUMMARY

As part of the proposed WinCo Foods project, multiple pedestrian pathways will be constructed on-site to provide safe access to the major frontage roads for pedestrians to reach the store entrance. 34 bike parking stalls are proposed, with a striped pedestrian path to the store entrance. With these improvements, the project is providing safe and reasonable accommodations for alternative travel modes. These improvements will also accommodate the use of transit if/when service is extended to this portion of Woodburn. Overall, these improvements will meaningfully support alternative travel modes to and from the project site.

7 SUMMARY AND MITIGATION

7.1 SUMMARY

WinCo Foods is proposing to construct a new approximately 86,600-sf building located on vacant land along Stacy Allison Way. The WinCo Foods project will be developed on two vacant lots, totaling approximately 14 acres. Access to the project will be provided by four full access driveways, two along Stacy Allison Way, one along Evergreen Road, and one along Center Street. It is expected that the proposed WinCo Foods project will be developed in a single phase to be opened in 2026.

Based on the analysis described in this report, the following key findings have been identified:

- There were no reported fatal injury crashes within the study area.
- The safety analysis identified three locations that exceed ODOT's crash rate threshold. In each instance there is already a plan to construct improvements that should reduce the observed crashes or the crash frequency is low, with no clear pattern amongst the reported crashes.
- All study locations will operate within the identified performance standard for the 2026 opening year, after completion of the project.
- One ODOT intersection is projected to operate below the LOS threshold during the 2040 PM peak hour: Highway 214 at Evergreen Road. The City has identified this location in their current Transportation System Plan as project R10, calling to "Investigate corridor signal timing and coordination adjustments in coordination with ODOT".
- Three City of Woodburn intersections are projected to operate below the LOS threshold during the 2026 opening year: Stacy Allison Way at Evergreen Road, Hayes Street at Evergreen Road, and Harvard Drive at Evergreen Road. The City has identified intersection capacity improvements such as traffic signals at these three locations. An analysis of traffic signal control at each location indicates that each will operate within the identified performance standard with the improvement.

7.2 MITIGATION

WinCo Foods will pay the city of Woodburn Transportation System Development Charge.

Appendix A

Traffic Volume Counts



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

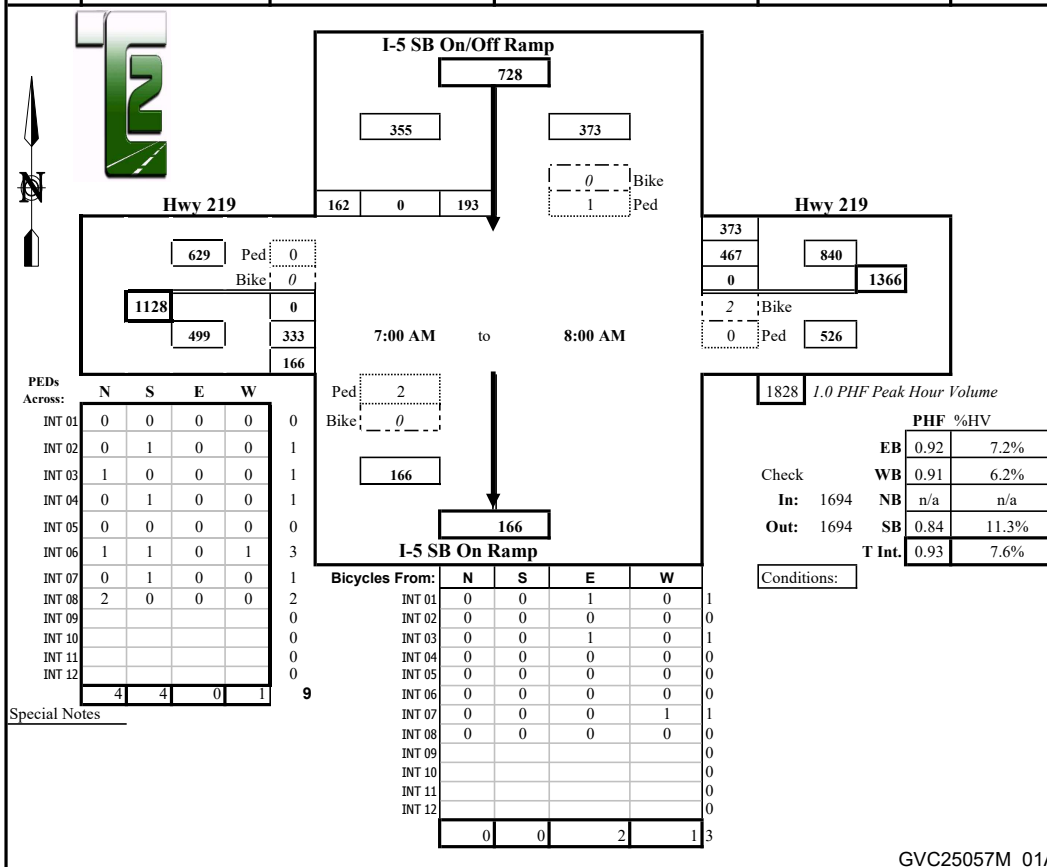
Intersection: I-5 SB Ramps & Highway 219

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) I-5 SB On/Off Ramp				From South on (NB) I-5 SB On Ramp				From East on (WB) Hwy 219				From West on (EB) Hwy 219				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	11	35	0	31	0	0	0	0	15	0	133	98	12	0	71	46	414
7:30 A	9	47	0	57	0	0	0	0	10	0	135	82	7	0	94	42	457
7:45 A	9	48	0	31	0	0	0	0	11	0	96	106	8	0	82	41	404
8:00 A	11	63	0	43	0	0	0	0	16	0	103	87	9	0	86	37	419
8:15 A	8	43	0	27	0	0	0	0	12	0	83	73	9	0	84	37	347
8:30 A	11	52	0	33	0	0	0	0	17	0	76	76	12	0	71	35	343
8:45 A	6	49	0	29	0	0	0	0	10	0	84	62	14	0	110	35	369
9:00 A	5	36	0	41	0	0	0	0	11	0	86	69	15	0	69	41	342
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	70	373	0	292	0	0	0	0	102	0	796	653	86	0	667	314	3095
Peak Hour: 7:00 AM to 8:00 AM																	
Total	40	193	0	162	0	0	0	0	52	0	467	373	36	0	333	166	1694
Approach	355				0				840				499				1694
%HV	11.3%				n/a				6.2%				7.2%				7.6%
PHF	0.84				n/a				0.91				0.92				0.93



GVC25057M_01A



Prepared for:

GVC Transportation Solutions Traffic Count Consultants, Inc.

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WBE/DBE

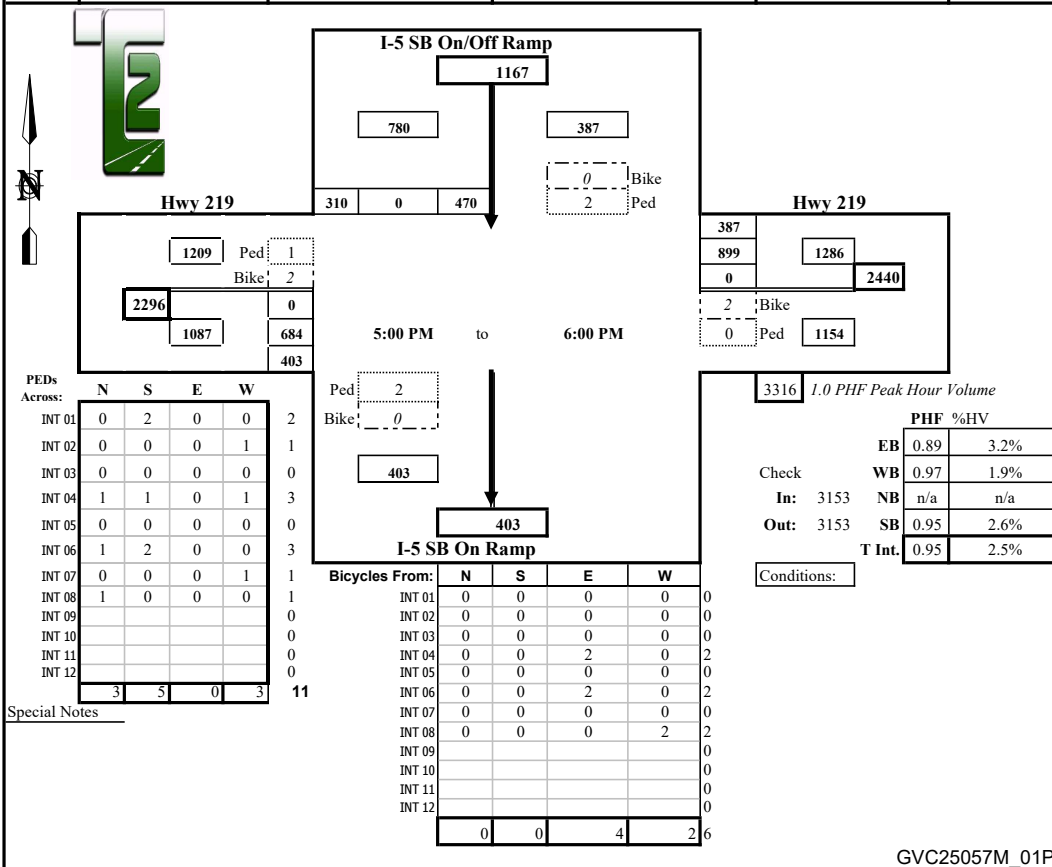
Intersection: I-5 SB Ramps & Highway 219

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) I-5 SB On/Off Ramp				From South on (NB) I-5 SB On/Off Ramp				From East on (WB) Hwy 219				From West on (EB) Hwy 219				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	3	140	0	84	0	0	0	0	8	0	173	102	6	0	191	126	816
4:30 P	6	96	0	67	0	0	0	0	6	0	171	107	7	0	177	92	710
4:45 P	5	134	0	80	0	0	0	0	8	0	163	127	5	0	164	96	764
5:00 P	2	128	0	76	0	0	0	0	8	0	168	109	6	0	169	101	751
5:15 P	5	109	0	72	0	0	0	0	8	0	192	133	7	0	163	113	782
5:30 P	5	126	0	79	0	0	0	0	7	0	214	112	13	0	156	85	772
5:45 P	5	117	0	73	0	0	0	0	5	0	253	79	6	0	188	119	829
6:00 P	5	118	0	86	0	0	0	0	5	0	240	63	9	0	177	86	770
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	36	968	0	617	0	0	0	0	55	0	1574	832	59	0	1385	818	6194
Peak Hour: 5:00 PM to 6:00 PM																	
Total	20	470	0	310	0	0	0	0	25	0	899	387	35	0	684	403	3153
Approach	780				0				1286				1087				3153
%HV	2.6%				n/a				1.9%				3.2%				2.5%
PHF	0.95				n/a				0.97				0.89				0.95



GVC25057M_01P



Prepared for:

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WBE/DBE

Intersection: I-5 NB Ramps & Highway 219

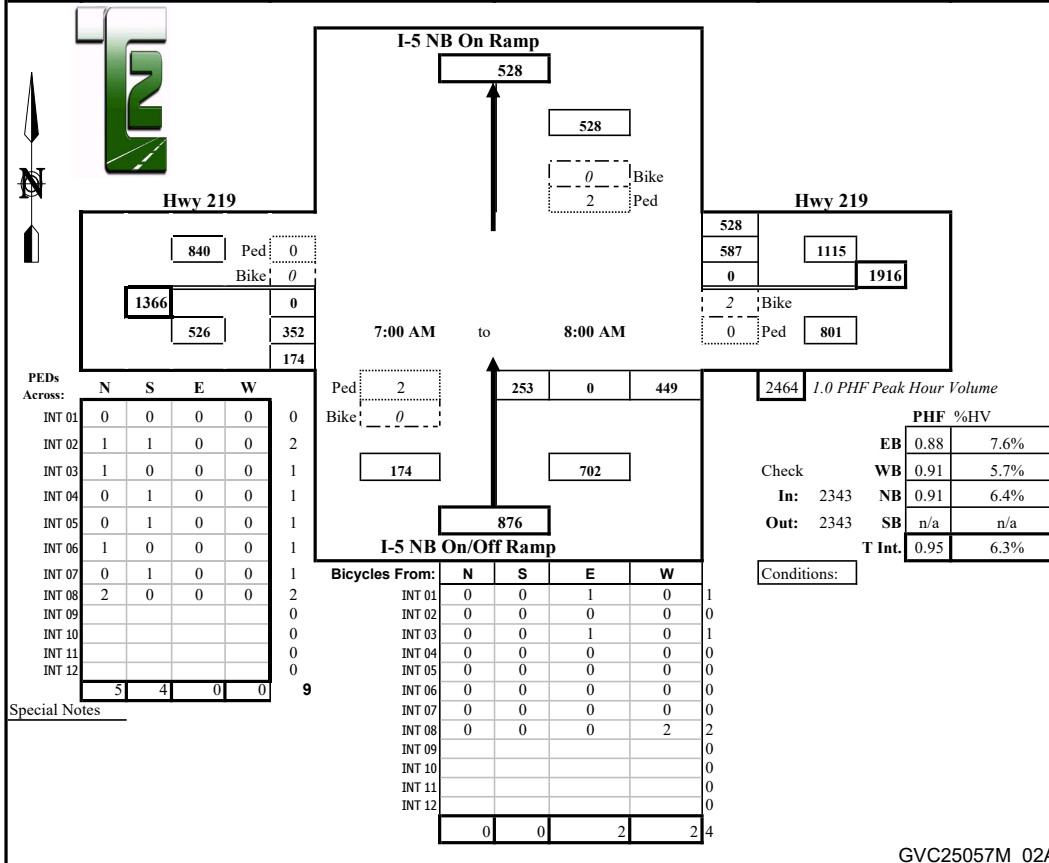
Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) I-5 NB On Ramp				From South on (NB) I-5 NB On/Off Ramp				From East on (WB) Hwy 219				From West on (EB) Hwy 219				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	0	0	0	7	77	0	85	22	0	154	152	9	0	63	43	574
7:30 A	0	0	0	0	10	82	0	107	13	0	135	151	8	0	82	59	616
7:45 A	0	0	0	0	11	47	0	112	12	0	155	118	14	0	96	34	562
8:00 A	0	0	0	0	17	47	0	145	16	0	143	107	9	0	111	38	591
8:15 A	0	0	0	0	11	31	0	101	16	0	125	101	10	0	99	28	485
8:30 A	0	0	0	0	11	35	0	91	16	0	117	101	10	0	87	36	467
8:45 A	0	0	0	0	7	38	0	75	19	0	108	95	15	0	113	46	475
9:00 A	0	0	0	0	11	36	0	95	15	0	119	79	4	0	85	20	434
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	0	0	0	0	85	393	0	811	129	0	1056	904	79	0	736	304	4204
Peak Hour: 7:00 AM to 8:00 AM																	
Total	0	0	0	0	45	253	0	449	63	0	587	528	40	0	352	174	2343
Approach	0				702				1115				526				2343
%HV	n/a				6.4%				5.7%				7.6%				6.3%
PHF	n/a				0.91				0.91				0.88				0.95



GVC25057M_02A



Prepared for:

GVC Transportation Solutions

Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

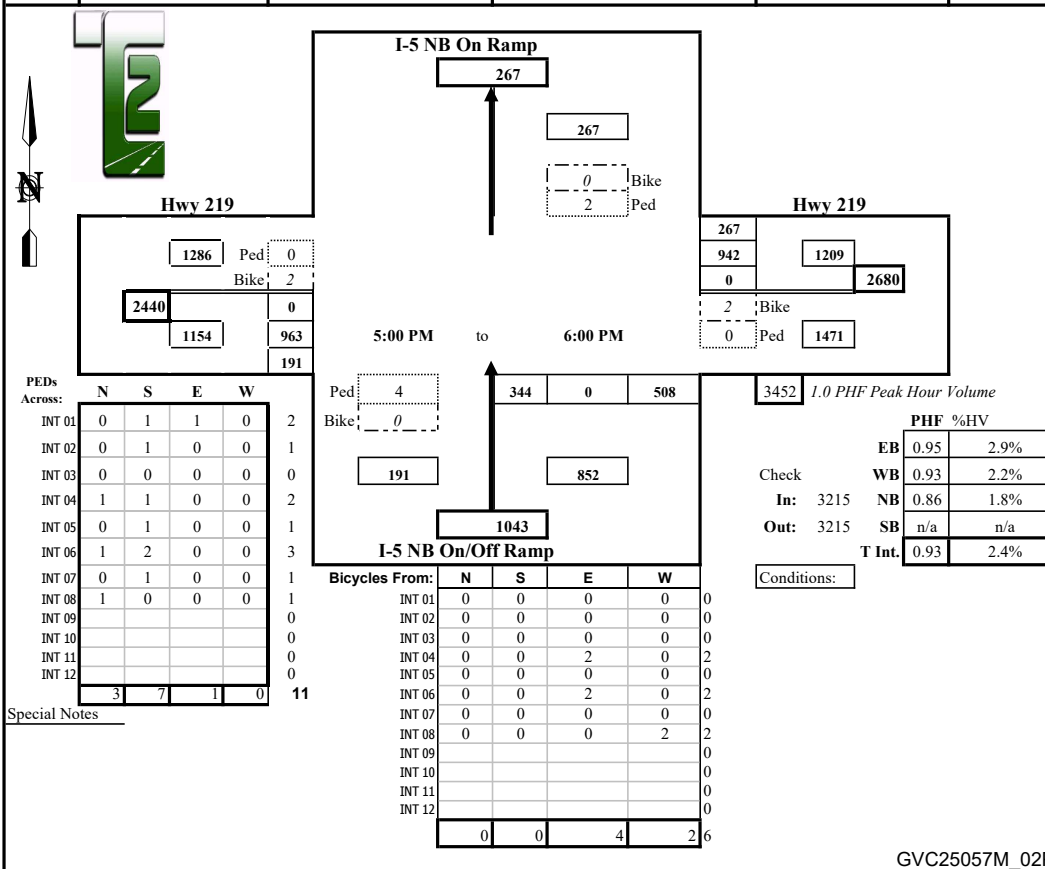
Intersection: I-5 NB Ramps & Highway 219

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) I-5 NB On Ramp				From South on (NB) I-5 NB On/Off Ramp				From East on (WB) Hwy 219				From West on (EB) Hwy 219				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	0	0	5	49	0	105	8	0	226	56	7	0	278	53	767
4:30 P	0	0	0	0	6	37	0	127	5	0	241	70	4	0	235	38	748
4:45 P	0	0	0	0	8	64	0	115	4	0	226	66	6	0	248	50	769
5:00 P	0	0	0	0	2	51	0	123	6	0	226	53	6	0	254	43	750
5:15 P	0	0	0	0	5	77	0	116	6	0	248	74	4	0	223	49	787
5:30 P	0	0	0	0	2	67	0	137	9	0	259	65	13	0	248	34	810
5:45 P	0	0	0	0	6	92	0	157	6	0	240	69	10	0	252	53	863
6:00 P	0	0	0	0	2	108	0	98	6	0	195	59	7	0	240	55	755
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	36	545	0	978	50	0	1861	512	57	0	1978	375	6249
Peak Hour: 5:00 PM to 6:00 PM																	
Total	0	0	0	0	15	344	0	508	27	0	942	267	34	0	963	191	3215
Approach	0				852				1209				1154				3215
%HV	n/a				1.8%				2.2%				2.9%				2.4%
PHF	n/a				0.86				0.93				0.95				0.93



GVC25057M_02P



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

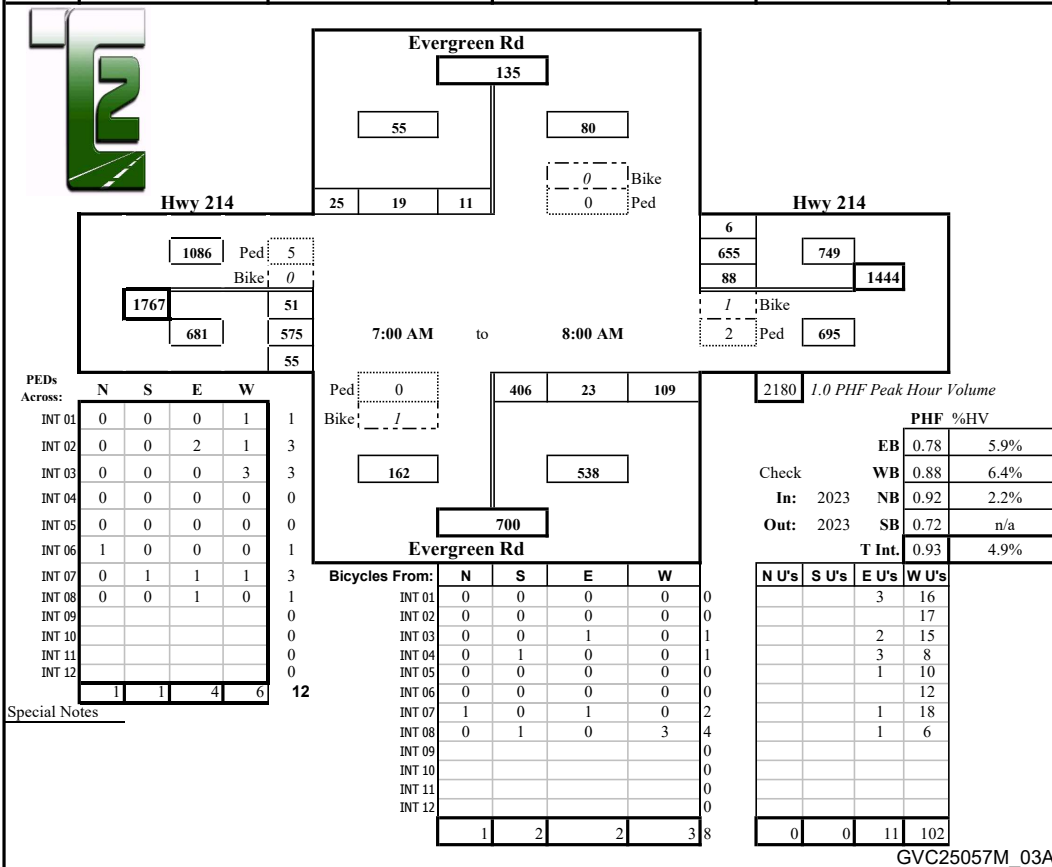
Intersection: Evergreen Rd & Highway 214

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) Hwy 214				From West on (EB) Hwy 214				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	4	5	10	5	98	5	24	15	28	184	1	8	13	103	7	482
7:30 A	0	2	4	4	2	110	2	24	13	24	177	0	8	5	141	9	502
7:45 A	0	2	5	2	2	101	6	22	9	15	156	1	15	10	159	15	494
8:00 A	0	3	5	9	3	97	10	39	11	21	138	4	9	23	172	24	545
8:15 A	2	3	3	8	4	77	5	22	13	19	142	1	12	16	141	18	455
8:30 A	0	2	7	11	4	83	7	22	11	36	129	3	11	13	124	10	447
8:45 A	0	1	5	8	2	56	6	24	14	24	127	7	10	9	141	13	421
9:00 A	2	5	6	9	3	75	4	27	14	29	108	4	9	13	127	18	425
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	4	22	40	61	25	697	45	204	100	196	1161	21	82	102	1108	114	3771
Peak Hour: 7:00 AM to 8:00 AM																	
Total	0	11	19	25	12	406	23	109	48	88	655	6	40	51	575	55	2023
Approach	55				538				749				681				2023
%HV	n/a				2.2%				6.4%				5.9%				4.9%
PHF	0.72				0.92				0.88				0.78				0.93



GVC25057M_03A



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

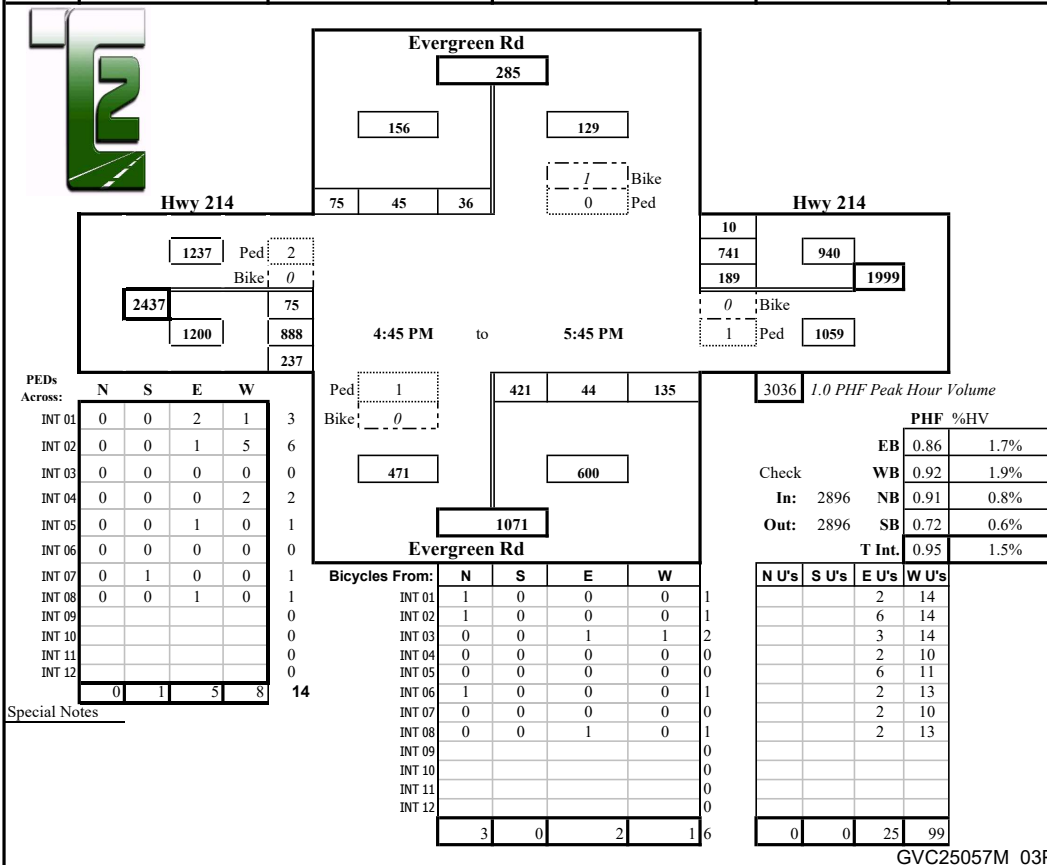
Intersection: Evergreen Rd & Highway 214

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) Hwy 214				From West on (EB) Hwy 214				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	8	9	20	1	91	11	56	6	42	173	4	4	22	192	67	695
4:30 P	0	11	11	13	0	112	8	50	3	53	169	4	7	33	194	52	710
4:45 P	0	8	7	17	0	103	10	50	5	54	181	0	8	24	223	52	729
5:00 P	0	6	14	14	1	92	12	32	4	48	174	6	6	23	203	53	677
5:15 P	0	16	12	26	1	111	15	37	3	48	204	3	2	17	213	51	753
5:30 P	0	7	13	24	1	94	11	32	7	41	193	0	9	18	209	65	707
5:45 P	1	7	6	11	2	124	6	34	4	52	170	1	3	17	263	68	759
6:00 P	0	7	5	16	1	92	11	40	5	33	148	5	0	8	202	47	614
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	70	77	141	7	819	84	331	37	371	1412	23	39	162	1699	455	5644
Peak Hour: 4:45 PM to 5:45 PM																	
Total	1	36	45	75	5	421	44	135	18	189	741	10	20	75	888	237	2896
Approach	156				600				940				1200				2896
%HV	0.6%				0.8%				1.9%				1.7%				1.5%
PHF	0.72				0.91				0.92				0.86				0.95





Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

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WBE/DBE

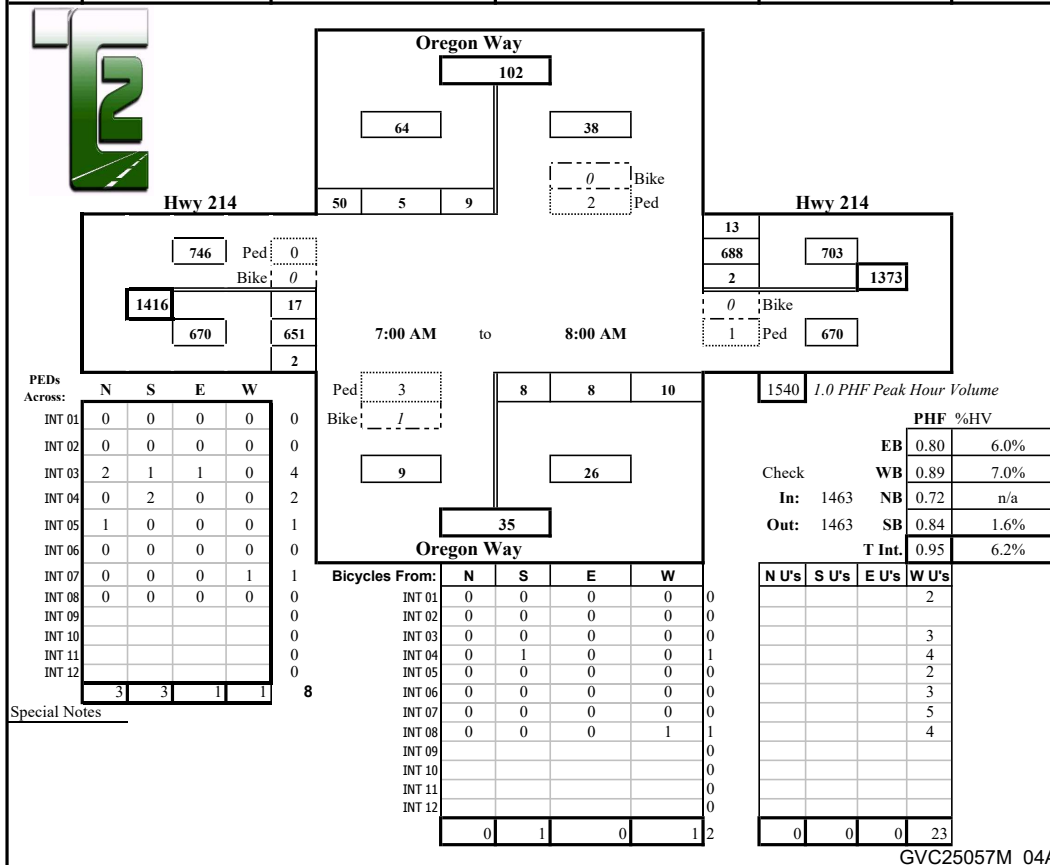
Intersection: Oregon Way & Highway 214

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Oregon Way				From South on (NB) Oregon Way				From East on (WB) Hwy 214				From West on (EB) Hwy 214				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	1	3	0	10	0	3	1	5	14	0	195	3	8	3	128	0	351
7:30 A	0	1	2	15	0	1	2	1	14	1	193	2	10	5	155	1	379
7:45 A	0	3	0	11	0	1	3	3	9	0	157	2	14	3	165	0	348
8:00 A	0	2	3	14	0	3	2	1	12	1	143	6	8	6	203	1	385
8:15 A	1	6	0	15	0	2	5	0	12	3	141	7	12	16	143	3	341
8:30 A	0	6	1	11	0	1	3	3	12	0	157	5	10	7	140	3	337
8:45 A	3	1	6	11	0	2	5	0	12	1	139	2	10	5	162	1	335
9:00 A	0	4	2	7	0	3	1	1	14	0	137	9	10	11	137	4	316
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	5	26	14	94	0	16	22	14	99	6	1262	36	82	56	1233	13	2792
Peak Hour: 7:00 AM to 8:00 AM																	
Total	1	9	5	50	0	8	8	10	49	2	688	13	40	17	651	2	1463
Approach	64				26				703				670				1463
%HV	1.6%				n/a				7.0%				6.0%				6.2%
PHF	0.84				0.72				0.89				0.80				0.95



GVC25057M_04A



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

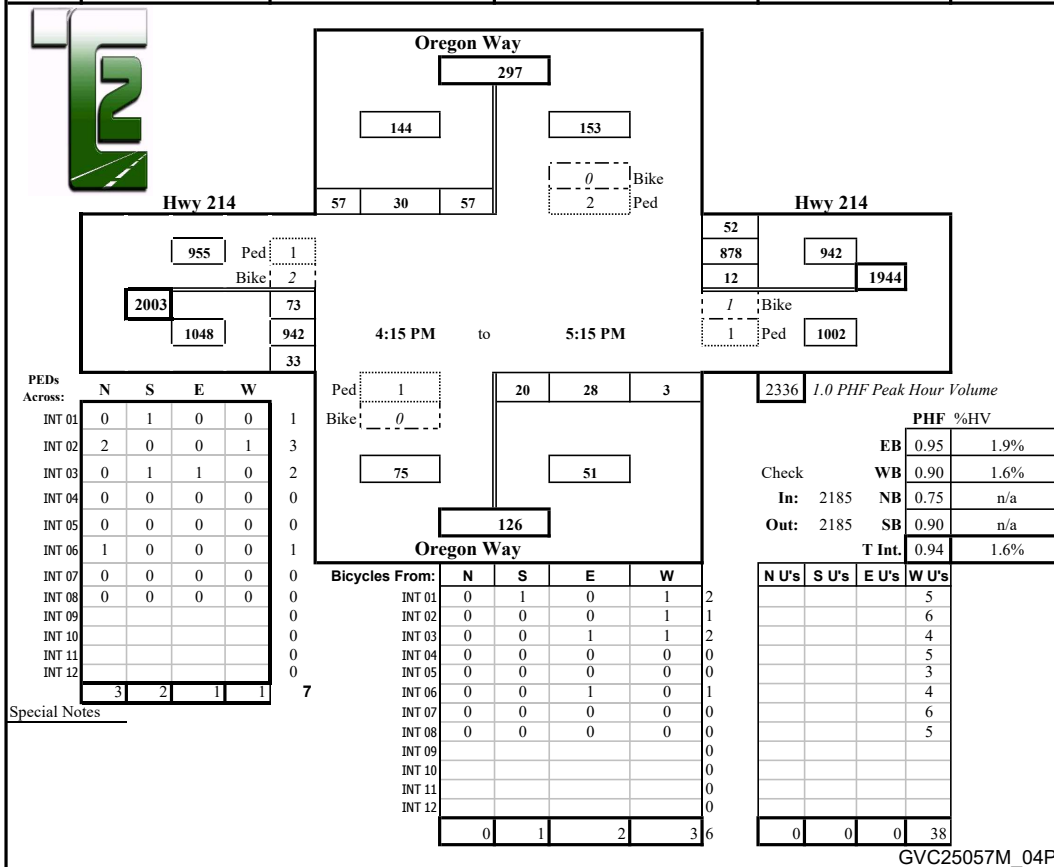
Intersection: Oregon Way & Highway 214

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Oregon Way				From South on (NB) Oregon Way				From East on (WB) Hwy 214				From West on (EB) Hwy 214				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	16	6	12	0	1	5	4	6	1	211	15	4	19	227	5	522
4:30 P	0	15	8	15	0	7	9	1	3	2	204	10	4	27	219	5	522
4:45 P	0	14	6	16	0	1	2	1	5	3	213	20	9	16	255	6	553
5:00 P	0	16	10	14	0	5	10	1	4	3	212	12	5	10	221	12	526
5:15 P	0	12	6	12	0	7	7	0	3	4	249	10	2	20	247	10	584
5:30 P	0	10	11	11	0	3	6	1	7	3	216	9	6	16	215	6	507
5:45 P	1	17	2	14	0	4	4	2	3	4	208	10	2	13	267	8	553
6:00 P	0	13	7	12	0	0	3	2	5	2	174	11	0	18	244	2	488
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	113	56	106	0	28	46	12	36	22	1687	97	32	139	1895	54	4255
Peak Hour: 4:15 PM to 5:15 PM																	
Total	0	57	30	57	0	20	28	3	15	12	878	52	20	73	942	33	2185
Approach	144				51				942				1048				2185
%HV	n/a				n/a				1.6%				1.9%				1.6%
PHF	0.90				0.75				0.90				0.95				0.94



GVC25057M_04P



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

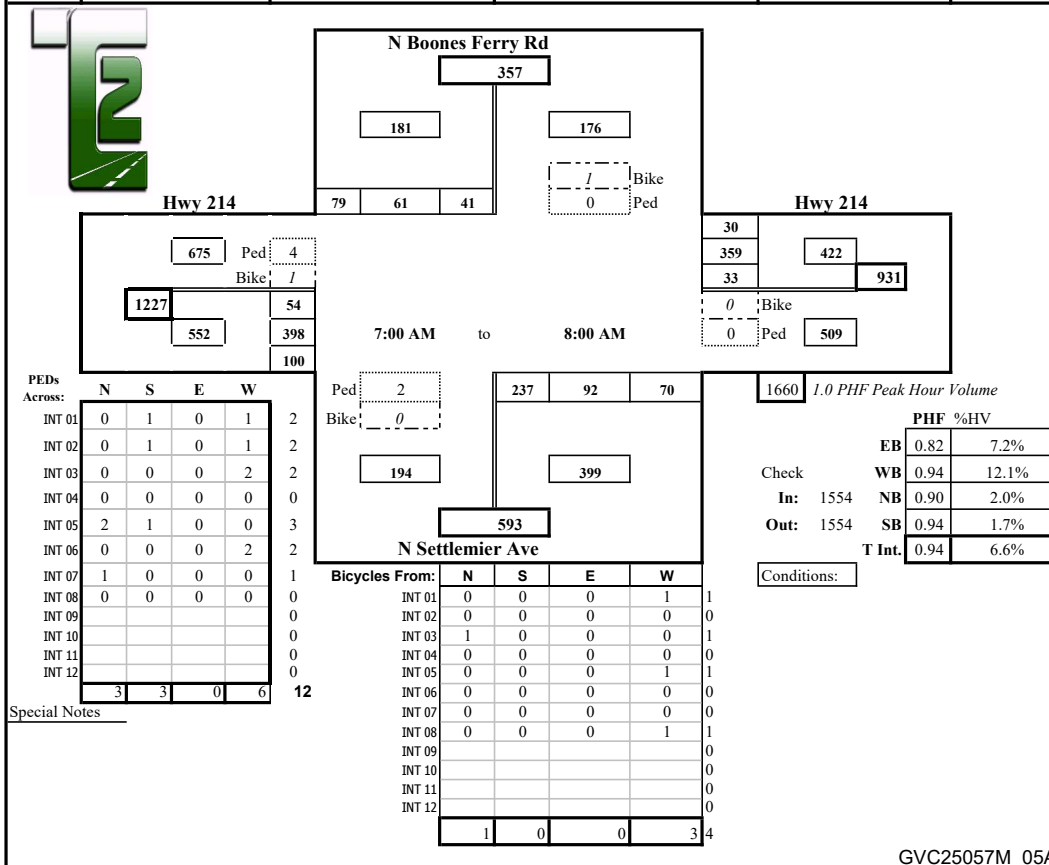
Intersection: N Boones Ferry Rd/N Settlemier Ave & Highway 214

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) N Boones Ferry Rd				From South on (NB) N Settlemier Ave				From East on (WB) Hwy 214				From West on (EB) Hwy 214				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	2	9	13	24	4	69	29	13	12	11	86	6	9	11	78	23	372
7:30 A	0	9	16	18	0	66	23	20	11	7	98	5	7	12	85	24	383
7:45 A	0	12	16	20	1	54	17	18	12	8	82	7	10	15	112	23	384
8:00 A	1	11	16	17	3	48	23	19	16	7	93	12	14	16	123	30	415
8:15 A	1	12	12	21	3	41	18	12	13	3	73	13	15	16	77	37	335
8:30 A	2	18	15	21	0	50	23	15	19	9	82	3	7	9	73	27	345
8:45 A	1	10	14	19	2	41	16	13	14	12	82	6	11	20	90	27	350
9:00 A	3	18	21	19	3	58	22	14	15	8	71	12	18	15	113	34	405
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	10	99	123	159	16	427	171	124	112	65	667	64	91	114	751	225	2989
Peak Hour: 7:00 AM to 8:00 AM																	
Total	3	41	61	79	8	237	92	70	51	33	359	30	40	54	398	100	1554
Approach	181				399				422				552				1554
%HV	1.7%				2.0%				12.1%				7.2%				6.6%
PHF	0.94				0.90				0.94				0.82				0.94



GVC25057M_05A



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

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WBE/DBE

Intersection: N Boones Ferry Rd/N Settlemier Ave & Highway 214

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

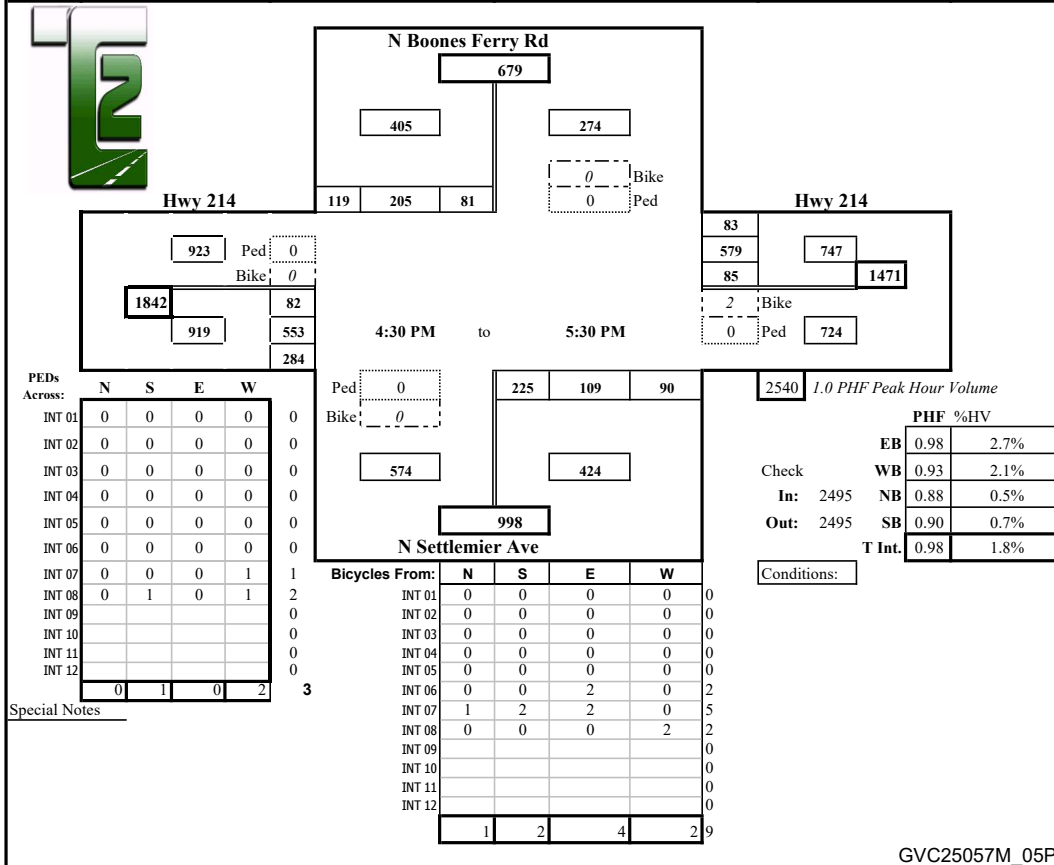
Checked By: Jen

Time Interval	From North on (SB) N Boones Ferry Rd				From South on (NB) N Settlemier Ave				From East on (WB) Hwy 214				From West on (EB) Hwy 214				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	26	44	30	1	59	26	12	4	30	137	16	6	28	132	72	612
4:30 P	3	29	47	28	0	58	41	29	8	28	119	16	11	14	119	55	583
4:45 P	1	24	38	41	0	60	19	29	7	25	148	20	6	25	143	63	635
5:00 P	2	18	52	24	0	47	27	15	5	14	166	20	6	18	139	75	615
5:15 P	0	18	51	26	2	66	31	24	2	28	137	25	5	20	127	74	627
5:30 P	0	21	64	28	0	52	32	22	2	18	128	18	8	19	144	72	618
5:45 P	0	17	38	23	0	55	40	26	2	29	137	21	4	26	129	65	606
6:00 P	0	29	39	17	0	67	32	17	1	11	118	18	0	26	130	79	583
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	7	182	373	217	3	464	248	174	31	183	1090	154	46	176	1063	555	4879
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	Peak Hour: 4:30 PM to 5:30 PM																
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Total	3	81	205	119	2	225	109	90	16	85	579	83	25	82	553	284	2495
Approach	405				424				747				919				2495
%HV	0.7%				0.5%				2.1%				2.7%				1.8%
PHF	0.90				0.88				0.93				0.98				0.98





Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

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WBE/DBE

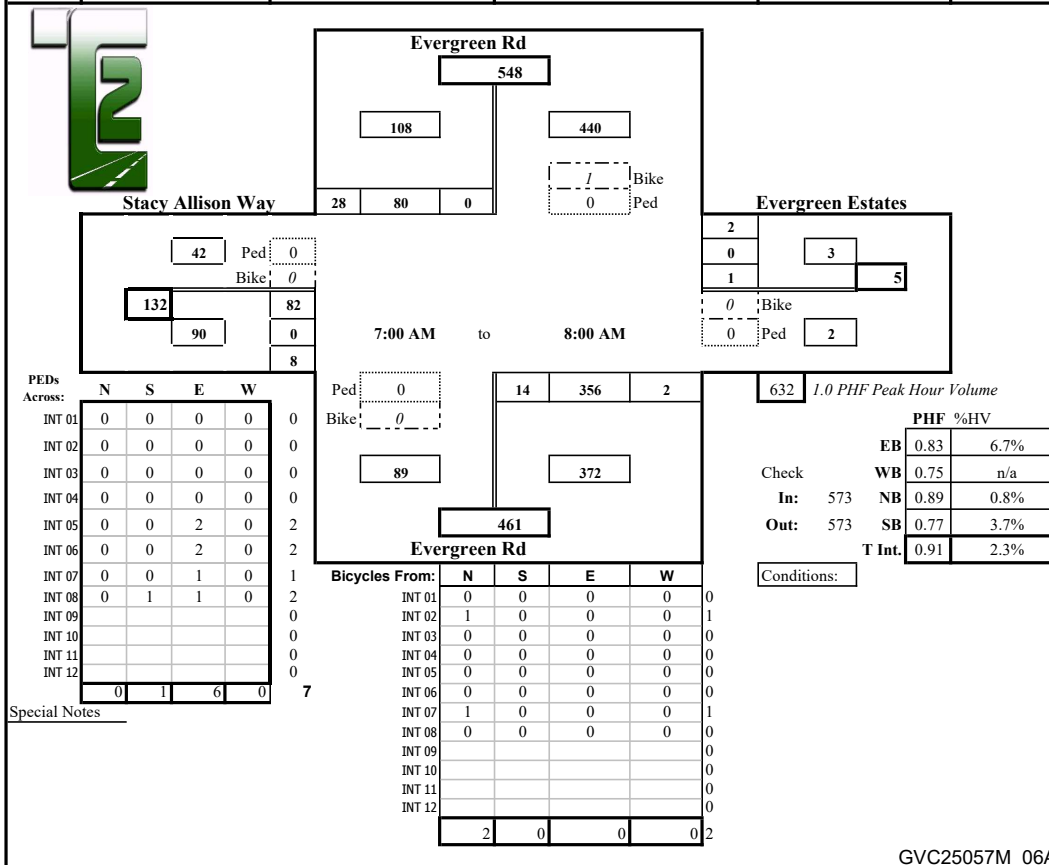
Intersection: Evergreen Rd & Evergreen Estates/Stacy Allison Way

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) Evergreen Estates				From West on (EB) Stacy Allison Way				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	2	0	10	11	1	4	84	0	0	0	0	1	2	23	0	3	136
7:30 A	1	0	18	7	0	3	81	0	0	0	0	0	2	19	0	2	130
7:45 A	1	0	21	6	1	5	100	0	0	1	0	0	1	15	0	1	149
8:00 A	0	0	31	4	1	2	91	2	0	0	0	1	1	25	0	2	158
8:15 A	3	0	28	8	1	4	66	0	1	0	0	1	1	18	0	4	129
8:30 A	3	1	19	11	1	4	67	1	0	0	0	1	1	22	0	2	128
8:45 A	0	0	16	9	0	8	53	0	0	0	0	0	2	24	0	2	112
9:00 A	0	0	29	15	1	7	67	0	0	0	0	0	1	19	0	7	144
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	10	1	172	71	6	37	609	3	1	1	0	4	11	165	0	23	1086
Peak Hour: 7:00 AM to 8:00 AM																	
Total	4	0	80	28	3	14	356	2	0	1	0	2	6	82	0	8	573
Approach	108				372				3				90				573
%HV	3.7%				0.8%				n/a				6.7%				2.3%
PHF	0.77				0.89				0.75				0.83				0.91



GVC25057M_06A



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

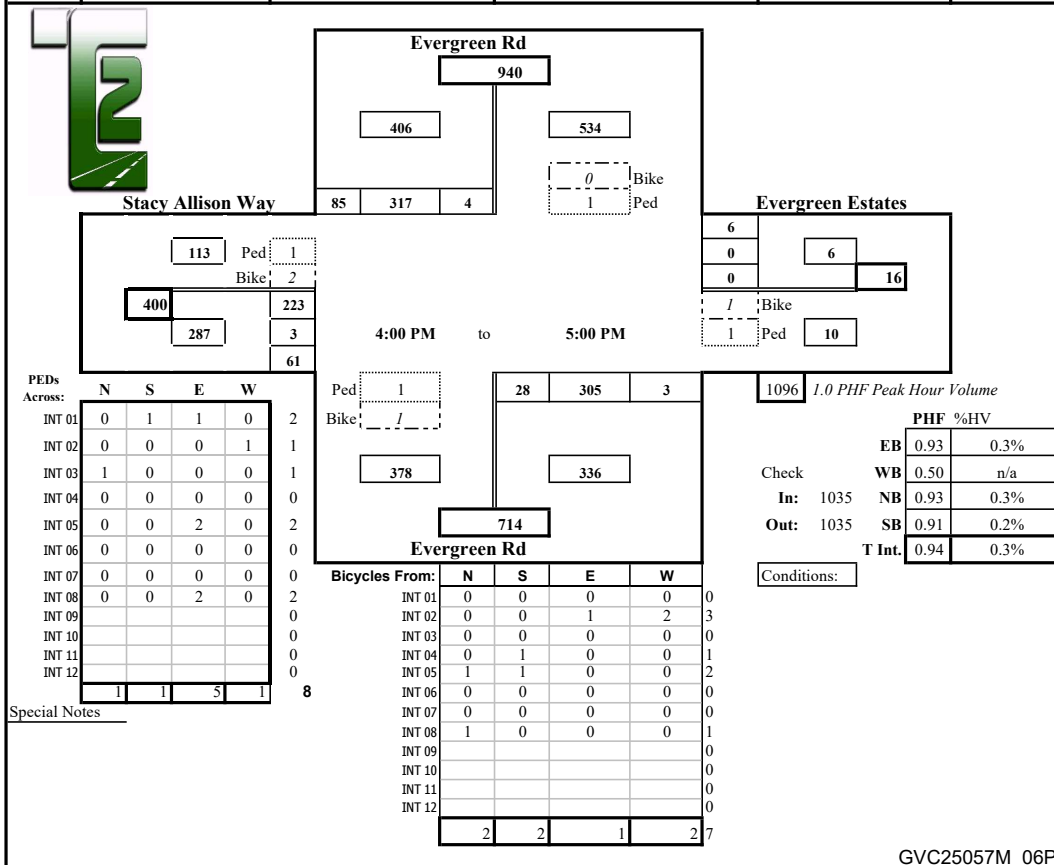
Intersection: Evergreen Rd & Evergreen Estates/Stacy Allison Way

Date of Count: Tue 07/22/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) Evergreen Estates				From West on (EB) Stacy Allison Way				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	1	95	16	0	8	75	2	0	0	0	0	1	57	0	20	274
4:30 P	0	0	72	21	0	14	76	0	0	0	0	3	0	61	1	10	258
4:45 P	1	3	72	26	0	1	83	1	0	0	0	1	0	54	2	14	257
5:00 P	0	0	78	22	1	5	71	0	0	0	0	2	0	51	0	17	246
5:15 P	0	1	67	24	0	8	73	3	0	1	0	0	0	67	0	9	253
5:30 P	1	1	81	26	1	8	77	1	0	0	0	0	0	43	1	16	254
5:45 P	0	0	81	25	0	8	84	0	0	0	0	0	2	55	0	9	262
6:00 P	0	0	57	19	1	15	60	1	0	0	0	3	0	48	1	10	214
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	2	6	603	179	3	67	599	8	0	1	0	9	3	436	5	105	2018
Peak Hour: 4:00 PM to 5:00 PM																	
Total	1	4	317	85	1	28	305	3	0	0	0	6	1	223	3	61	1035
Approach	406				336				6				287				1035
%HV	0.2%				0.3%				n/a				0.3%				0.3%
PHF	0.91				0.93				0.50				0.93				0.94



GVC25057M_06P



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Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

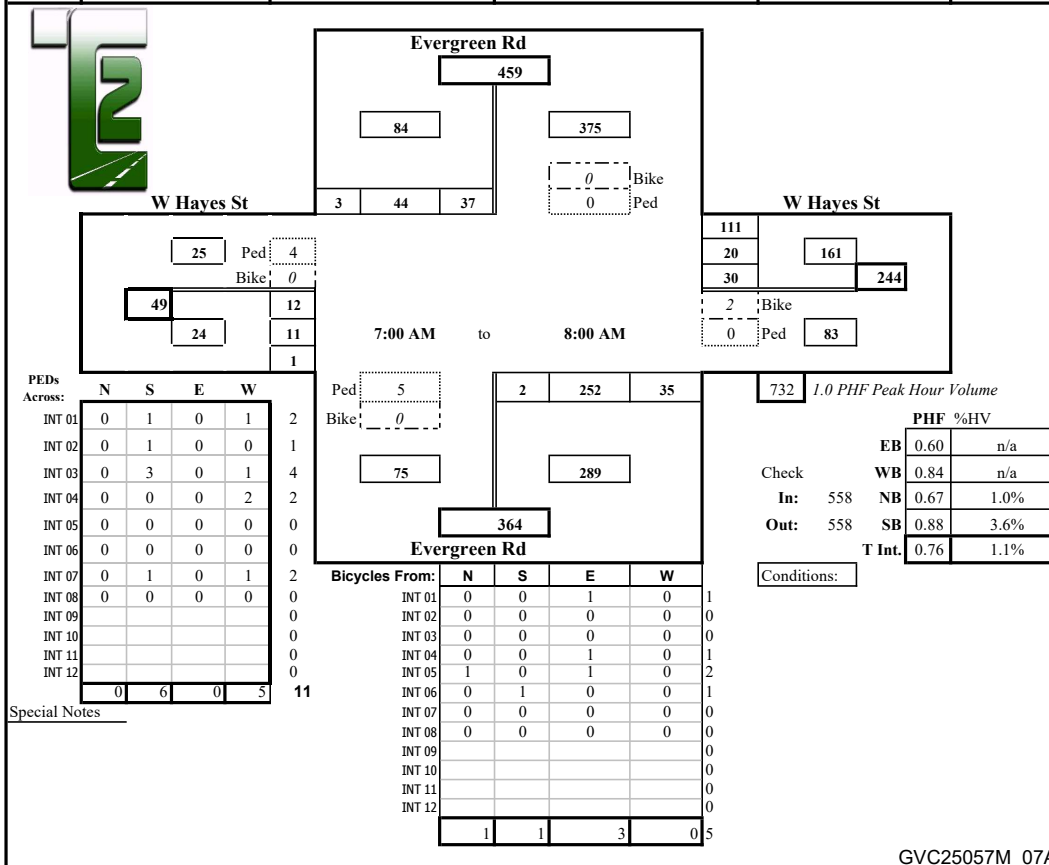
Intersection: Evergreen Rd & W Hayes St

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) W Hayes St				From West on (EB) W Hayes St				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	8	6	1	0	1	53	7	0	9	5	34	0	3	1	0	128
7:30 A	0	9	14	0	0	0	55	2	0	3	8	28	0	1	3	1	124
7:45 A	2	7	14	1	2	0	95	13	0	12	3	28	0	5	5	0	183
8:00 A	1	13	10	1	1	1	49	13	0	6	4	21	0	3	2	0	123
8:15 A	1	15	8	0	1	1	51	4	0	4	10	21	0	2	1	0	117
8:30 A	1	11	12	2	1	0	51	5	0	8	7	22	0	10	3	0	131
8:45 A	1	14	10	1	0	0	44	6	0	9	9	24	0	0	1	0	118
9:00 A	0	12	10	0	0	2	40	8	0	8	6	23	0	2	6	0	117
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	6	89	84	6	5	5	438	58	0	59	52	201	0	26	22	1	1041
Peak Hour: 7:00 AM to 8:00 AM																	
Total	3	37	44	3	3	2	252	35	0	30	20	111	0	12	11	1	558
Approach	84				289				161				24				558
%HV	3.6%				1.0%				n/a				n/a				1.1%
PHF	0.88				0.67				0.84				0.60				0.76



GVC25057M_07A



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

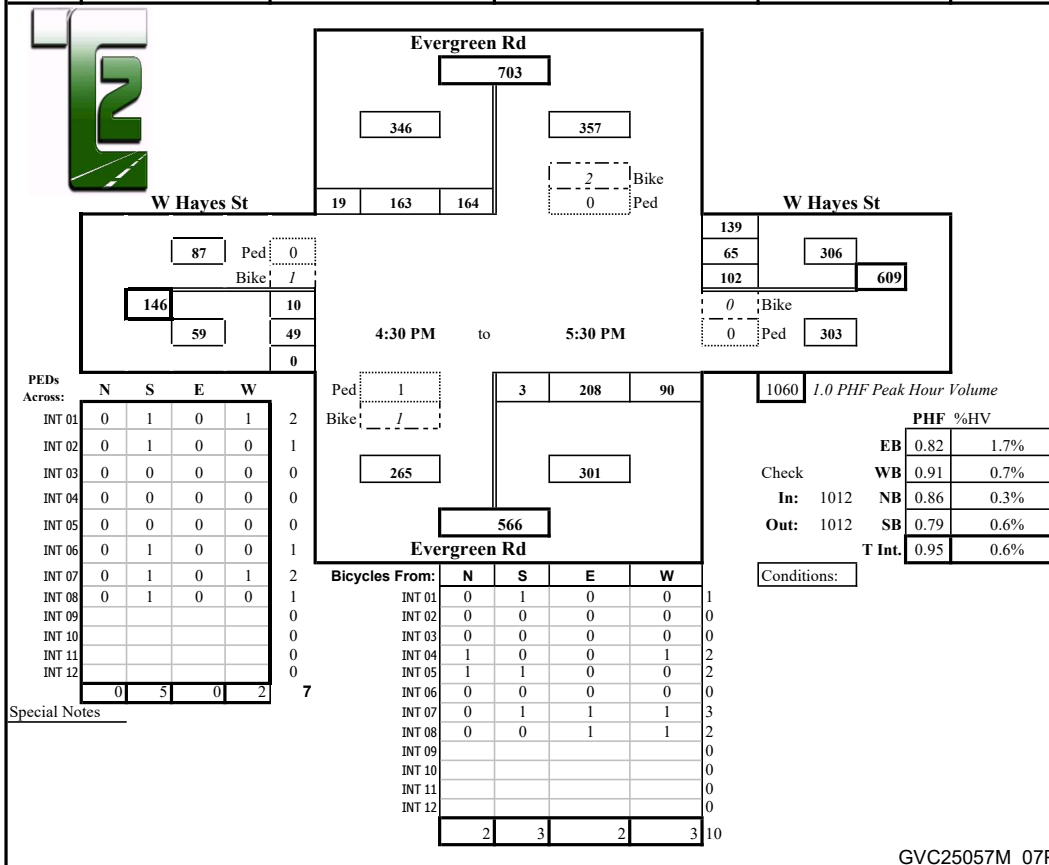
Intersection: Evergreen Rd & W Hayes St

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) W Hayes St				From West on (EB) W Hayes St				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	49	45	2	0	1	38	23	0	25	14	33	0	4	15	0	249
4:30 P	0	47	40	3	1	0	43	22	0	20	12	34	0	5	15	0	241
4:45 P	1	38	36	3	0	0	63	25	0	20	14	36	1	3	14	0	252
5:00 P	0	50	54	6	1	1	52	16	0	26	20	29	0	1	10	0	265
5:15 P	0	36	35	5	0	0	47	26	1	28	15	41	0	3	10	0	246
5:30 P	1	40	38	5	0	2	46	23	1	28	16	33	0	3	15	0	249
5:45 P	0	29	33	4	1	0	48	22	0	25	15	36	0	1	4	0	217
6:00 P	0	27	28	3	0	0	36	22	0	16	15	31	0	2	10	0	190
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	2	316	309	31	3	4	373	179	2	188	121	273	1	22	93	0	1909
Peak Hour: 4:30 PM to 5:30 PM																	
Total	2	164	163	19	1	3	208	90	2	102	65	139	1	10	49	0	1012
Approach	346				301				306				59				1012
%HV	0.6%				0.3%				0.7%				1.7%				0.6%
PHF	0.79				0.86				0.91				0.82				0.95



GVC25057M_07P



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Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

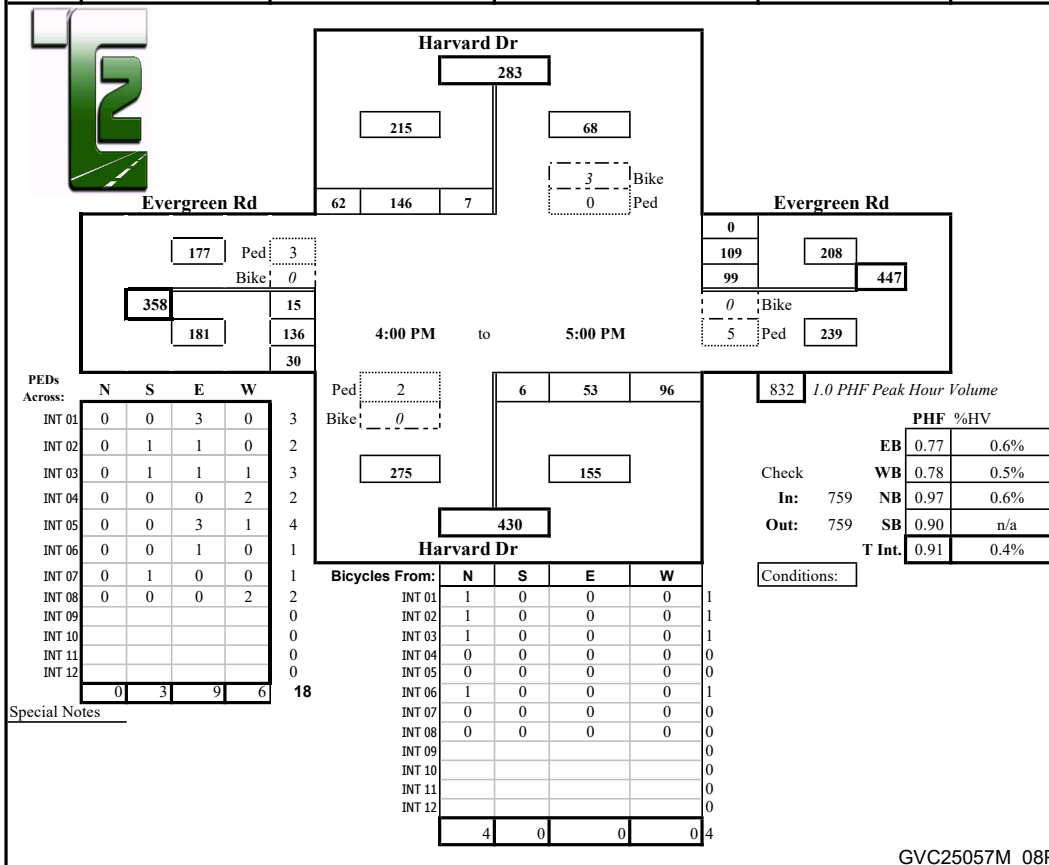
Intersection: Harvard Dr & Evergreen Rd

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Harvard Dr				From South on (NB) Harvard Dr				From East on (WB) Evergreen Rd				From West on (EB) Evergreen Rd				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	41	19	0	2	12	26	0	20	29	0	0	4	25	7	185
4:30 P	0	2	42	16	1	1	10	24	1	27	30	0	0	2	27	10	191
4:45 P	0	1	33	7	0	1	18	21	0	19	16	0	0	4	48	7	175
5:00 P	0	4	30	20	0	2	13	25	0	33	34	0	1	5	36	6	208
5:15 P	1	1	34	8	0	1	11	25	0	25	27	1	0	1	30	10	174
5:30 P	0	2	29	9	0	3	10	20	0	19	35	0	0	1	29	10	167
5:45 P	0	1	25	8	1	2	13	26	0	13	29	1	0	1	37	13	169
6:00 P	0	1	27	8	0	5	11	17	0	9	29	3	0	2	31	8	151
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	12	261	95	2	17	98	184	1	165	229	5	1	20	263	71	1420
Peak Hour: 4:00 PM to 5:00 PM																	
Total	0	7	146	62	1	6	53	96	1	99	109	0	1	15	136	30	759
Approach	215				155				208				181				759
%HV	n/a				0.6%				0.5%				0.6%				0.4%
PHF	0.90				0.97				0.78				0.77				0.91



GVC25057M_08P



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

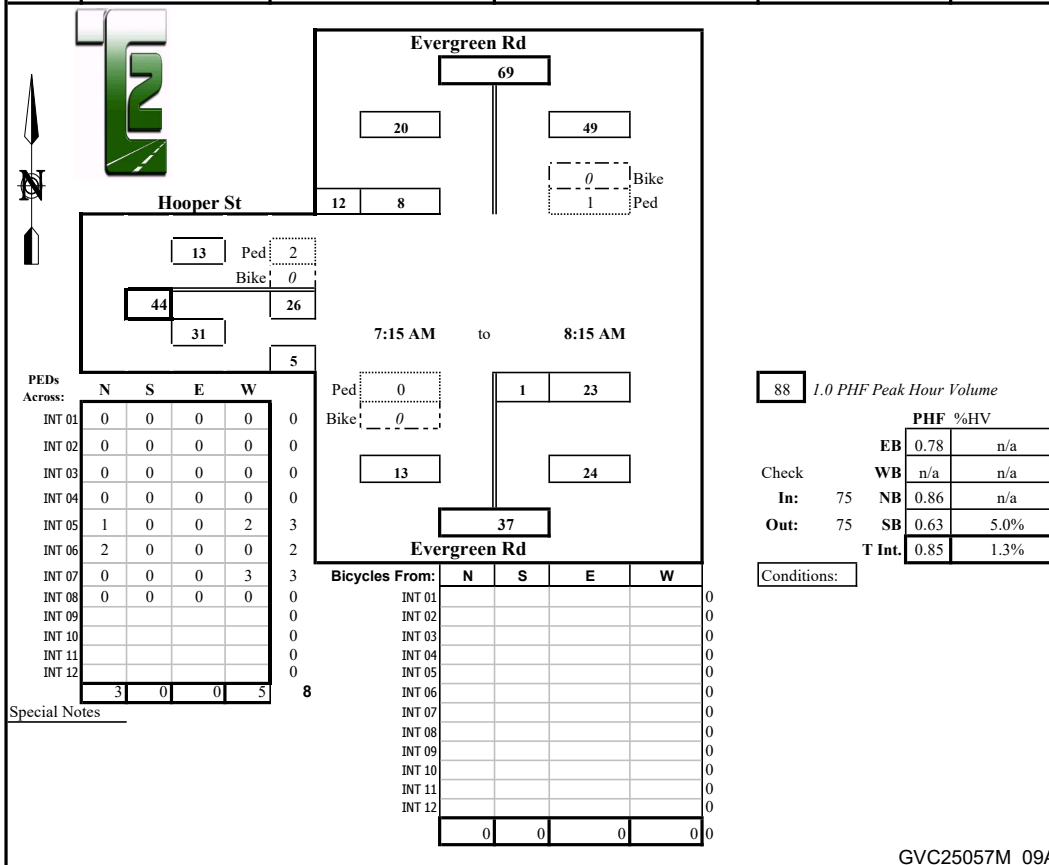
Intersection: Evergreen Rd & Hooper St

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) 0				From West on (EB) Hooper St				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	0	3	4	0	0	3	0	0	0	0	0	0	5	0	0	15
7:30 A	0	0	4	4	0	1	3	0	0	0	0	0	0	2	0	4	18
7:45 A	0	0	1	4	0	0	7	0	0	0	0	0	0	10	0	0	22
8:00 A	0	0	2	3	0	0	6	0	0	0	0	0	0	7	0	1	19
8:15 A	1	0	1	1	0	0	7	0	0	0	0	0	0	7	0	0	16
8:30 A	1	0	5	0	0	1	5	0	0	0	0	0	0	5	0	1	17
8:45 A	0	0	3	2	0	0	1	0	0	0	0	0	0	4	0	0	10
9:00 A	0	0	4	2	0	1	1	0	0	0	0	0	0	5	0	0	13
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	2	0	23	20	0	3	33	0	0	0	0	0	0	45	0	6	130
Peak Hour: 7:15 AM to 8:15 AM																	
Total	1	0	8	12	0	1	23	0	0	0	0	0	0	26	0	5	75
Approach	20				24				0				31				75
%HV	5.0%				n/a				n/a				n/a				1.3%
PHF	0.63				0.86				n/a				0.78				0.85



GVC25057M_09A



Prepared for: **GVC Transportation Solutions**
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Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

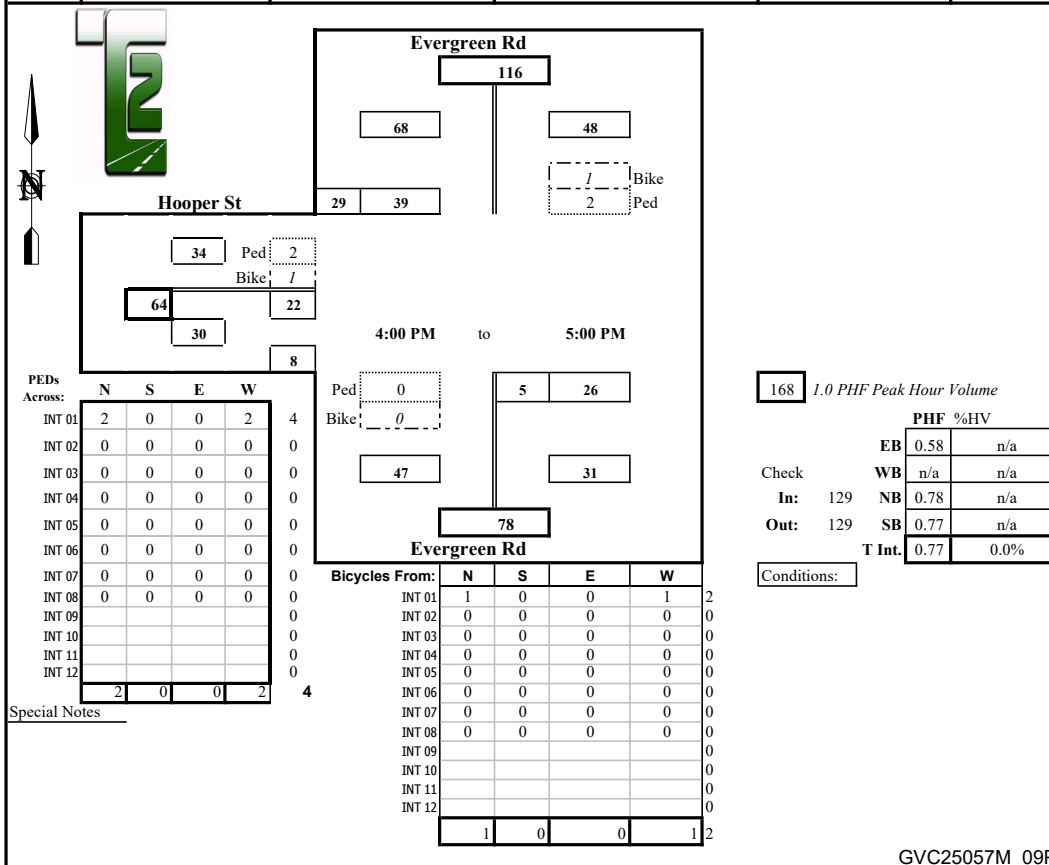
Intersection: Evergreen Rd & Hooper St

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) 0				From West on (EB) Hooper St				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	11	11	0	1	6	0	0	0	0	0	0	10	0	3	42
4:30 P	0	0	12	6	0	0	5	0	0	0	0	0	0	4	0	1	28
4:45 P	0	0	6	5	0	1	8	0	0	0	0	0	0	6	0	4	30
5:00 P	0	0	10	7	0	3	7	0	0	0	0	0	0	2	0	0	29
5:15 P	0	0	5	8	0	0	8	0	0	0	0	0	0	2	0	3	26
5:30 P	0	0	10	14	0	4	1	0	0	0	0	0	0	10	0	1	40
5:45 P	0	0	7	4	0	0	8	0	0	0	0	0	0	5	0	2	26
6:00 P	0	0	7	9	0	3	8	0	0	0	0	0	0	6	0	1	34
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	68	64	0	12	51	0	0	0	0	0	0	45	0	15	255
Peak Hour: 4:00 PM to 5:00 PM																	
Total	0	0	39	29	0	5	26	0	0	0	0	0	0	22	0	8	129
Approach	68				31				0				30				129
%HV	n/a				n/a				n/a				n/a				0.0%
PHF	0.77				0.78				n/a				0.58				0.77



GVC25057M_09P



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WBE/DBE

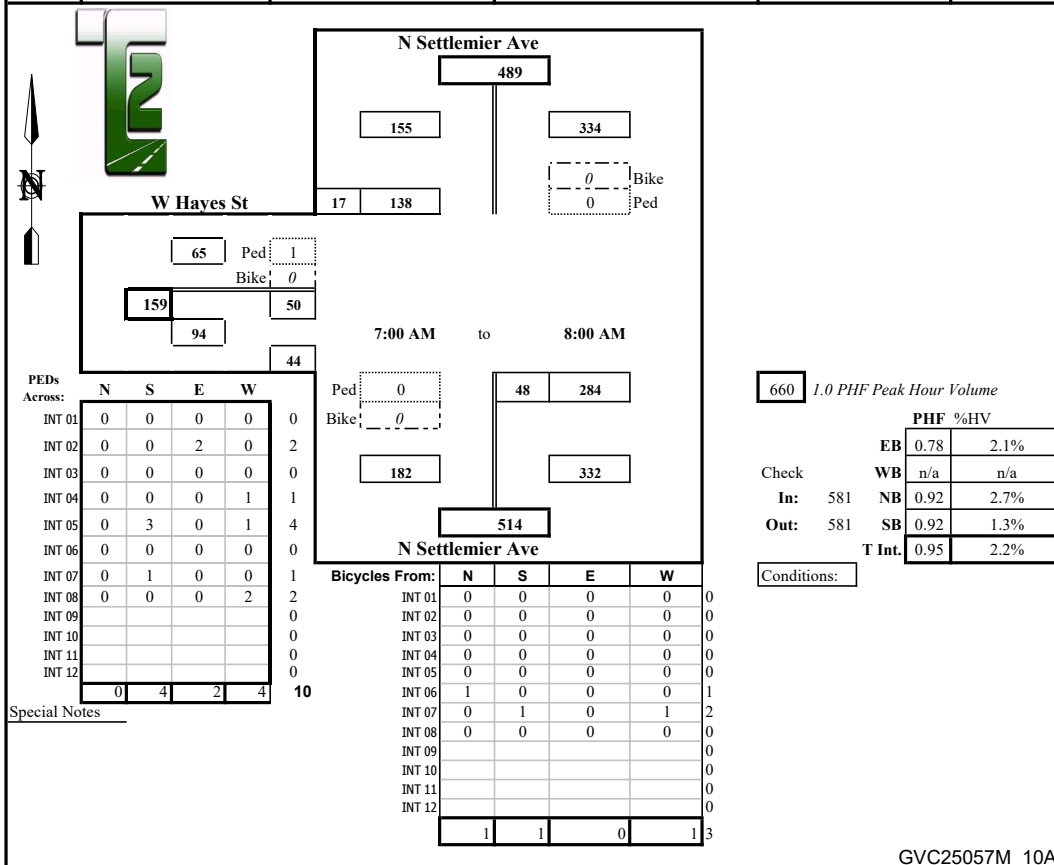
Intersection: N Settlemier Ave & W Hayes St

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) N Settlemier Ave				From South on (NB) N Settlemier Ave				From East on (WB) 0				From West on (EB) W Hayes St				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	0	37	4	3	18	66	0	0	0	0	0	0	8	0	11	144
7:30 A	0	0	32	4	1	13	77	0	0	0	0	0	0	10	0	13	149
7:45 A	1	0	38	4	3	8	73	0	0	0	0	0	0	17	0	13	153
8:00 A	1	0	31	5	2	9	68	0	0	0	0	0	2	15	0	7	135
8:15 A	0	0	38	3	3	13	52	0	0	0	0	0	0	7	0	10	123
8:30 A	1	0	26	5	0	13	62	0	0	0	0	0	0	6	0	15	127
8:45 A	0	0	29	6	0	10	53	0	0	0	0	0	0	14	0	10	122
9:00 A	1	0	45	4	3	19	72	0	0	0	0	0	1	11	0	14	165
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	4	0	276	35	15	103	523	0	0	0	0	0	3	88	0	93	1118
Peak Hour: 7:00 AM to 8:00 AM																	
Total	2	0	138	17	9	48	284	0	0	0	0	0	2	50	0	44	581
Approach	155				332				0				94				581
%HV	1.3%				2.7%				n/a				2.1%				2.2%
PHF	0.92				0.92				n/a				0.78				0.95



GVC25057M_10A



Prepared for: **GVC Transportation Solutions**
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WBE/DBE

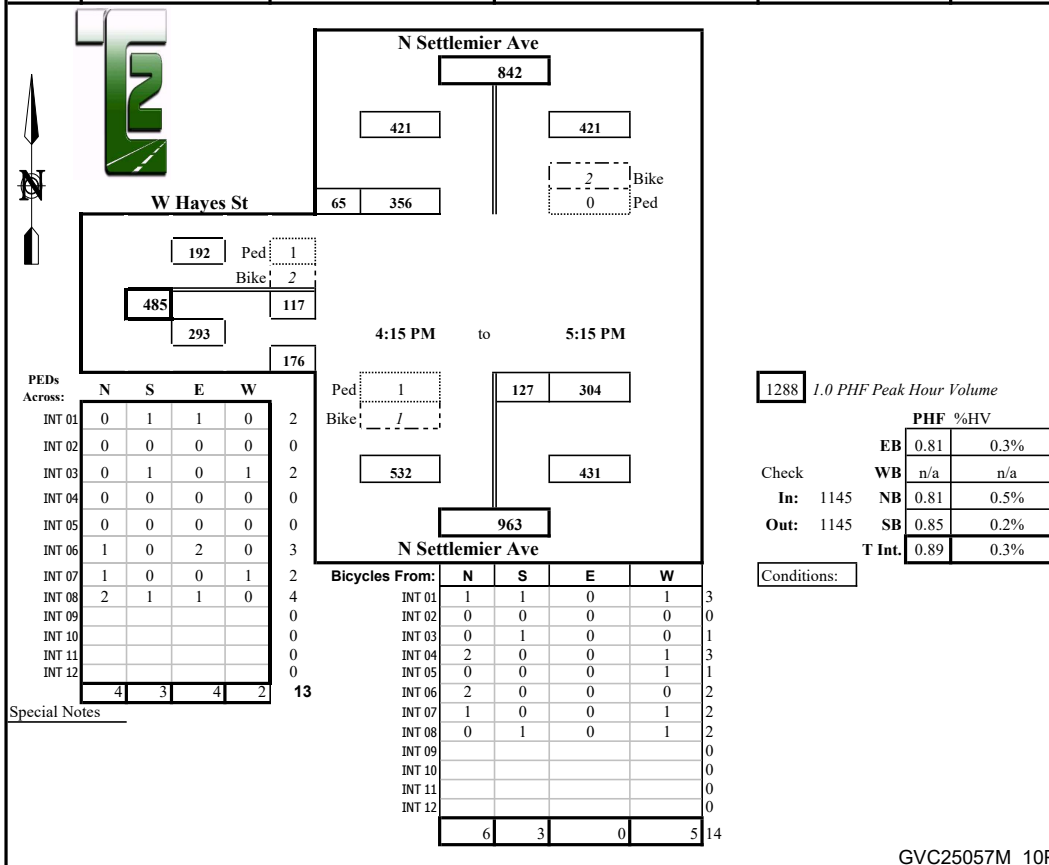
Intersection: N Settlemier Ave & W Hayes St

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) N Settlemier Ave				From South on (NB) N Settlemier Ave				From East on (WB) 0				From West on (EB) W Hayes St				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	90	21	2	37	74	0	0	0	0	0	1	31	0	32	285
4:30 P	0	0	89	15	0	27	83	0	0	0	0	0	0	35	0	55	304
4:45 P	1	0	77	13	0	29	70	0	0	0	0	0	0	36	0	39	264
5:00 P	0	0	88	15	0	30	59	0	0	0	0	0	1	26	0	37	255
5:15 P	0	0	102	22	2	41	92	0	0	0	0	0	0	20	0	45	322
5:30 P	1	0	89	18	0	26	73	0	0	0	0	0	1	22	0	41	269
5:45 P	0	0	83	16	0	30	76	0	0	0	0	0	0	28	0	28	261
6:00 P	0	0	73	11	0	32	77	0	0	0	0	0	1	25	0	34	252
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	691	131	4	252	604	0	0	0	0	0	4	223	0	311	2212
Peak Hour: 4:15 PM to 5:15 PM																	
Total	1	0	356	65	2	127	304	0	0	0	0	0	1	117	0	176	1145
Approach	421				431				0				293				1145
%HV	0.2%				0.5%				n/a				0.3%				0.3%
PHF	0.85				0.81				n/a				0.81				0.89



GVC25057M_10P



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

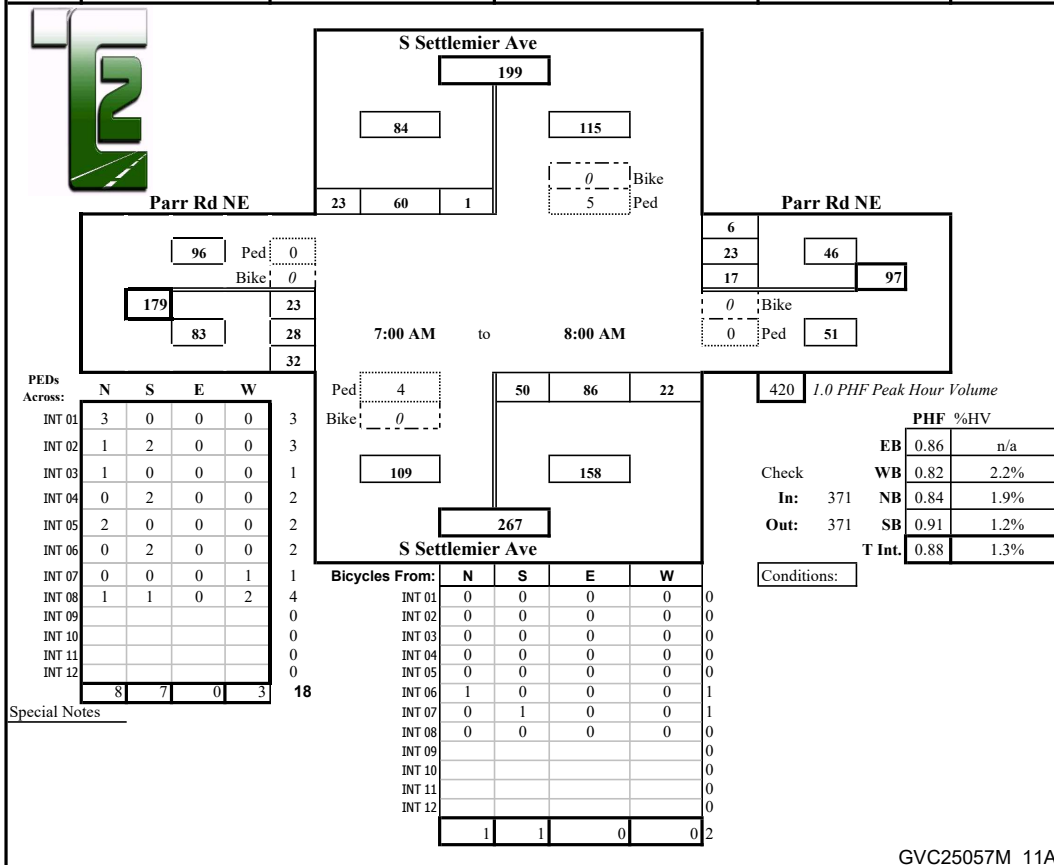
Intersection: S Settlemier Ave & Parr Rd NE

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) S Settlemier Ave				From South on (NB) S Settlemier Ave				From East on (WB) Parr Rd NE				From West on (EB) Parr Rd NE				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	0	15	8	1	12	23	3	0	4	9	1	0	6	4	6	91
7:30 A	0	0	16	6	0	21	24	2	0	4	6	2	0	5	9	10	105
7:45 A	1	0	17	4	0	8	20	7	0	7	5	1	0	3	8	11	91
8:00 A	0	1	12	5	2	9	19	10	1	2	3	2	0	9	7	5	84
8:15 A	0	0	12	2	1	10	23	4	0	3	2	1	0	4	7	7	75
8:30 A	0	0	11	4	0	9	22	3	0	1	12	0	1	8	3	10	83
8:45 A	0	0	16	1	0	10	20	5	1	6	6	0	0	7	6	7	84
9:00 A	0	1	16	5	1	4	25	7	0	2	8	0	1	2	7	5	82
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	2	115	35	5	83	176	41	2	29	51	7	2	44	51	61	695
Peak Hour: 7:00 AM to 8:00 AM																	
Total	1	1	60	23	3	50	86	22	1	17	23	6	0	23	28	32	371
Approach	84				158				46				83				371
%HV	1.2%				1.9%				2.2%				n/a				1.3%
PHF	0.91				0.84				0.82				0.86				0.88



GVC25057M_11A



Prepared for:

GVC Transportation Solutions

Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

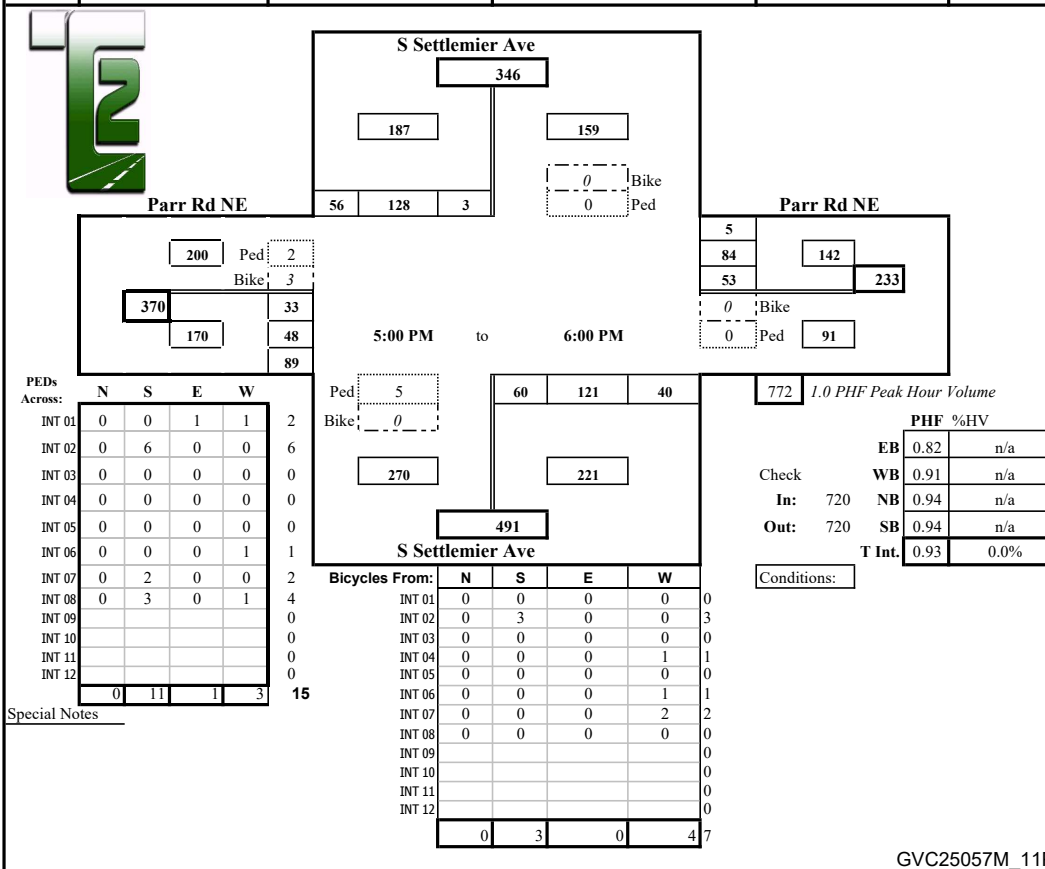
Intersection: S Settlemier Ave & Parr Rd NE

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) S Settlemier Ave				From South on (NB) S Settlemier Ave				From East on (WB) Parr Rd NE				From West on (EB) Parr Rd NE				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	2	31	12	0	11	23	7	0	19	12	2	0	7	16	23	165
4:30 P	0	2	33	8	1	20	32	9	0	9	17	2	0	8	15	22	177
4:45 P	0	3	34	6	0	13	26	5	0	17	16	2	0	13	11	17	163
5:00 P	0	2	41	7	0	11	26	12	0	13	23	0	0	11	9	18	173
5:15 P	0	0	34	10	0	9	30	10	0	14	24	1	0	8	5	20	165
5:30 P	0	2	30	13	0	17	26	13	0	15	20	2	0	11	12	22	183
5:45 P	0	1	33	14	0	19	30	8	0	11	21	2	0	6	11	23	179
6:00 P	0	0	31	19	0	15	35	9	0	13	19	0	0	8	20	24	193
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	12	267	89	1	115	228	73	0	111	152	11	0	72	99	169	1398
Peak Hour: 5:00 PM to 6:00 PM																	
Total	0	3	128	56	0	60	121	40	0	53	84	5	0	33	48	89	720
Approach	187				221				142				170				720
%HV	n/a				n/a				n/a				n/a				0.0%
PHF	0.94				0.94				0.91				0.82				0.93



GVC25057M_11P



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WBE/DBE

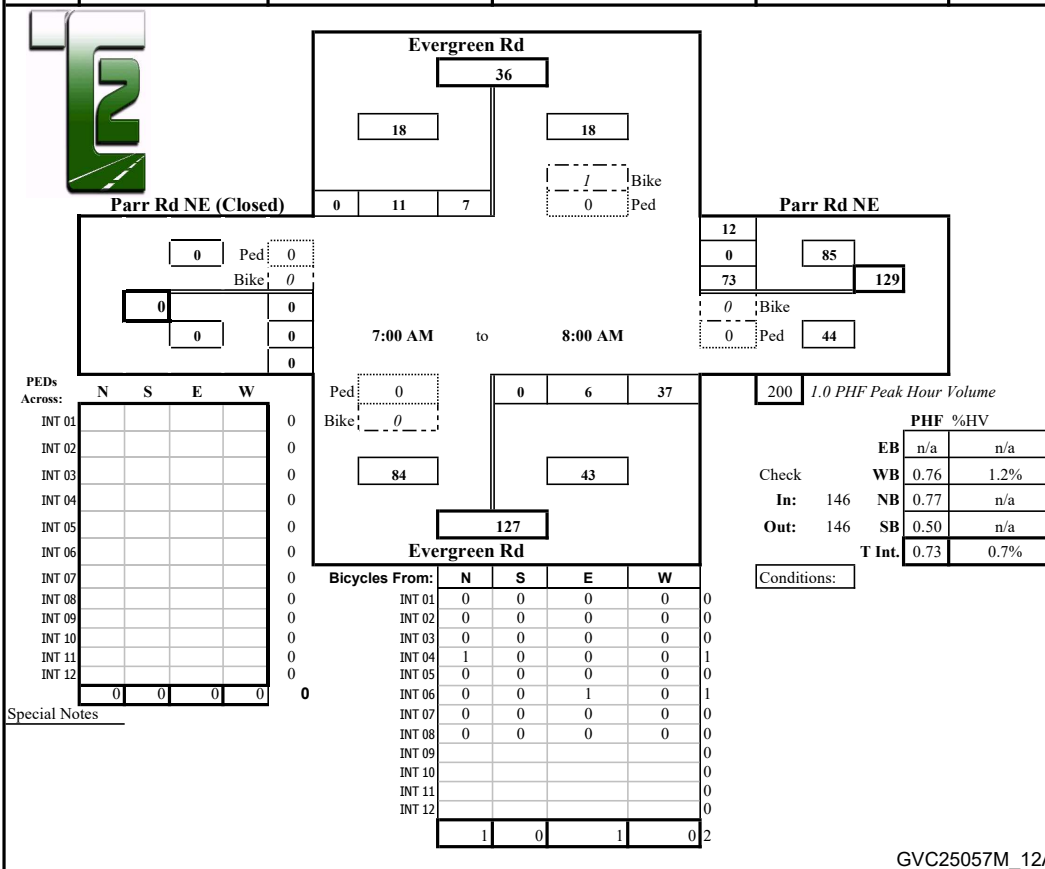
Intersection: Evergreen Rd & Parr Rd NE

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) Parr Rd NE				From West on (EB) Parr Rd NE (Closed)				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	1	2	0	0	0	0	8	0	24	0	1	0	0	0	0	36
7:30 A	0	4	5	0	0	0	2	11	0	26	0	2	0	0	0	0	50
7:45 A	0	1	2	0	0	0	1	13	0	13	0	4	0	0	0	0	34
8:00 A	0	1	2	0	0	0	3	5	1	10	0	5	0	0	0	0	26
8:15 A	0	0	1	0	0	0	1	3	2	9	0	0	0	0	0	0	14
8:30 A	1	4	1	0	0	0	0	5	1	2	0	2	0	0	0	0	14
8:45 A	0	0	2	0	0	0	0	4	0	6	0	0	0	0	0	0	12
9:00 A	0	0	2	0	0	0	1	5	0	12	0	0	0	0	0	0	20
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	11	17	0	0	0	8	54	4	102	0	14	0	0	0	0	206
Peak Hour: 7:00 AM to 8:00 AM																	
Total	0	7	11	0	0	0	6	37	1	73	0	12	0	0	0	0	146
Approach	18				43				85				0				146
%HV	n/a				n/a				1.2%				n/a				0.7%
PHF	0.50				0.77				0.76				n/a				0.73



GVC25057M_12A



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WBE/DBE

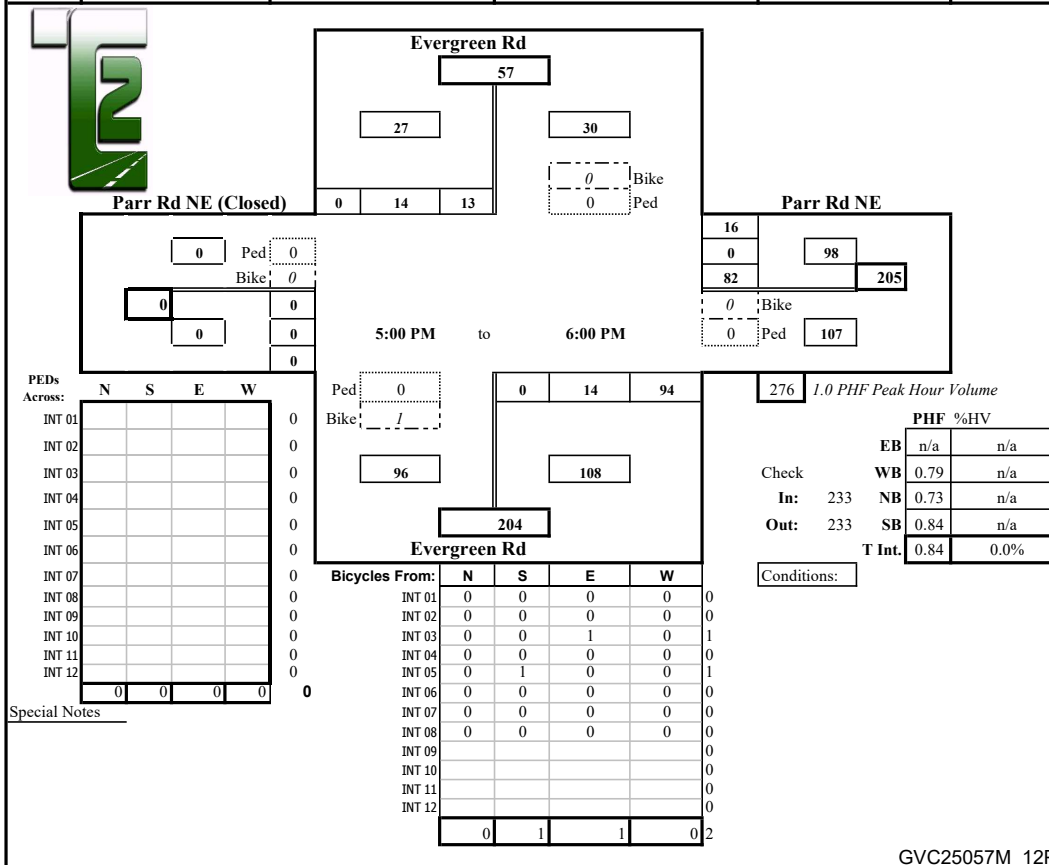
Intersection: Evergreen Rd & Parr Rd NE

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Evergreen Rd				From South on (NB) Evergreen Rd				From East on (WB) Parr Rd NE				From West on (EB) Parr Rd NE (Closed)				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	4	8	0	0	0	4	23	0	15	0	3	0	0	0	0	57
4:30 P	0	2	2	0	0	0	3	26	0	14	0	3	0	0	0	0	50
4:45 P	0	7	6	0	0	0	1	21	0	13	0	6	0	0	0	0	54
5:00 P	0	5	3	0	0	0	5	22	0	17	0	1	0	0	0	0	53
5:15 P	0	4	2	0	0	0	4	18	0	13	0	4	0	0	0	0	45
5:30 P	0	3	5	0	0	0	2	35	0	20	0	4	0	0	0	0	69
5:45 P	0	3	4	0	0	0	3	21	0	21	0	5	0	0	0	0	57
6:00 P	0	3	3	0	0	0	5	20	0	28	0	3	0	0	0	0	62
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	31	33	0	0	0	27	186	0	141	0	29	0	0	0	0	447
Peak Hour: 5:00 PM to 6:00 PM																	
Total	0	13	14	0	0	0	14	94	0	82	0	16	0	0	0	0	233
Approach	27				108				98				0				233
%HV	n/a				n/a				n/a				n/a				0.0%
PHF	0.84				0.73				0.79				n/a				0.84



GVC25057M_12P



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WBE/DBE

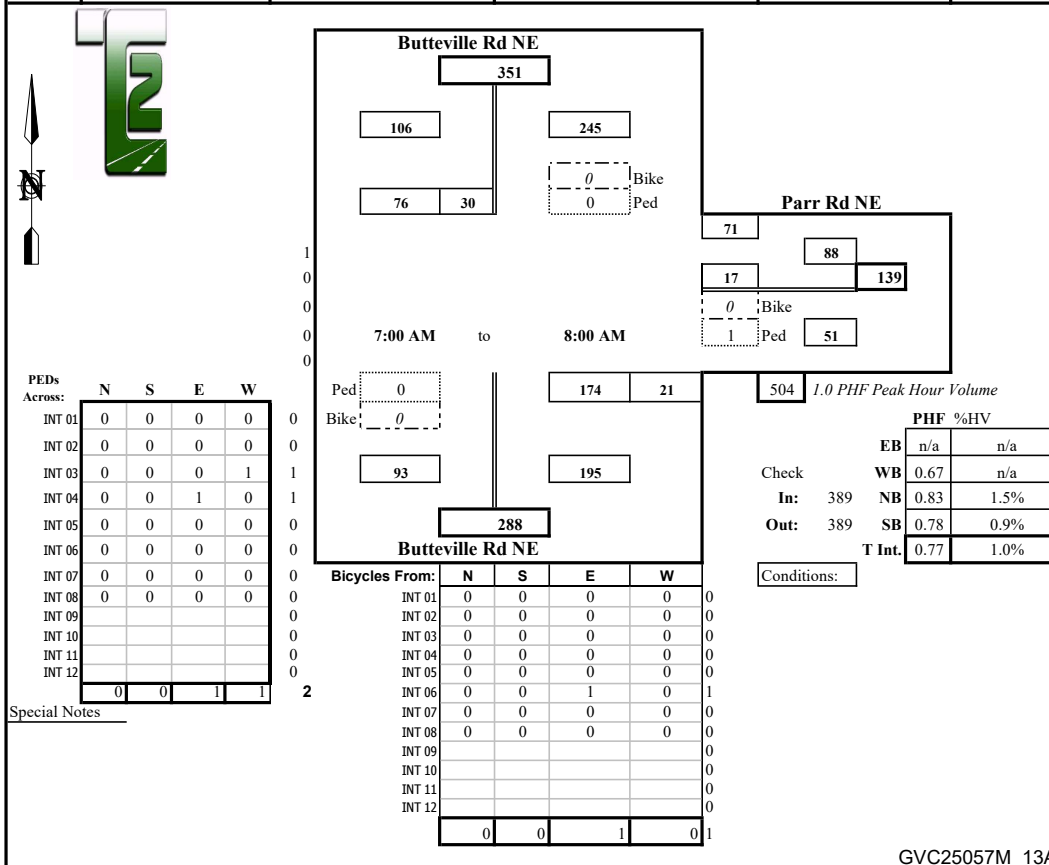
Intersection: Butteville Rd NE & Parr Rd NE

Date of Count: Wed 07/23/2025

Location: Woodburn, Oregon

Checked By: Jen

Time Interval	From North on (SB) Butteville Rd NE				From South on (NB) Butteville Rd NE				From East on (WB) Parr Rd NE				From West on (EB) 0				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	8	13	0	1	0	54	5	0	3	0	24	0	0	0	0	107
7:30 A	1	9	25	0	1	0	54	5	0	6	0	27	0	0	0	0	126
7:45 A	0	12	20	0	0	0	33	3	0	4	0	12	0	0	0	0	84
8:00 A	0	1	18	0	1	0	33	8	0	4	0	8	0	0	0	0	72
8:15 A	1	1	13	0	1	0	26	5	0	1	0	6	0	0	0	0	52
8:30 A	1	2	19	0	1	0	22	5	2	1	0	4	0	0	0	0	53
8:45 A	1	0	7	0	2	0	24	3	0	2	0	3	0	0	0	0	39
9:00 A	1	2	8	0	2	0	28	5	1	6	0	9	0	0	0	0	58
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	5	35	123	0	9	0	274	39	3	27	0	93	0	0	0	0	591
Peak Hour: 7:00 AM to 8:00 AM																	
Total	1	30	76	0	3	0	174	21	0	17	0	71	0	0	0	0	389
Approach	106				195				88				0				389
%HV	0.9%				1.5%				n/a				n/a				1.0%
PHF	0.78				0.83				0.67				n/a				0.77



Appendix B

Traffic Volume Calculation Worksheets

WinCo Foods Development - Woodburn
Trip Generation
Woodburn, OR

AM Peak Hour Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
WinCo Foods	850	Supermarket	ksqft	86.600	2.86	59%	41%	146	102	248	0%	0	0.0%	0	146	102	248
Total								146	102	248				0	146	102	248

PM Peak Hour Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
WinCo Foods	850	Supermarket	ksqft	86.600	7.94	50%	50%	344	344	688	0.0%	0	24.0%	165	262	261	523
Total								344	344	688				165	262	261	523

850 Fitted Curve Equation 7.94

Daily Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
WinCo Foods	850	Supermarket	ksqft	86.600	89.62	50%	50%	3,881	3,881	7,761	0.0%	0	2.0%	165	3,798	3,798	7,596
Total								3,881	3,881	7,761				165	3,798	3,798	7,596

850 Fitted Curve Equation 89.62

WinCo Foods - Woodburn, OR

AM Peak Hour Volumes

School Traffic Adjustment : 2.0 City
 ODOT 30th Hour Adjustment : 1.015 ODOT
 Annual Growth Rate: 0.50% City
 Annual Growth Rate: 0.50% ODOT
 Parr Connection Shift: 10.0%

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
ODOT 1 I-5 SB Ramps Highway 219 TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.93		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	EB	T	333	338	-	2	47	18	369	25	392	7	0	7	376	399
		R	166	168	-	1	77		246	12	257	0	0	0	246	257
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	WB	T	467	474	-	2	34	67	443	35	476	5	0	5	448	481
		R	373	379	-	2	81		462	28	488	10	0	10	472	498
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	NB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	0	0	-	0	0		0	0	0	0	0	0	0	0
		L	193	196	-	1	114		311	14	324	15	0	15	326	339
ODOT 2 I-5 NB Ramps Highway 219 TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.95	SB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	162	164	-	1	40		205	12	216	0	0	0	205	216
			1,694				392							37	2,072	2,190
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	EB	T	352	357	-	2	139	18	480	26	504	22	0	22	502	526
		R	174	177	-	1	26		204	13	216	0	0	0	204	216
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	WB	T	587	596	-	3	114	67	645	44	686	15	0	15	660	701
		R	528	536	-	3	242		780	40	817	10	0	10	790	827
		L	253	257	-	1	10		268	19	286	0	0	0	268	286
ODOT 3 Highway 214 Evergreen Rd TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.93	NB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	449	456	-	2	96		554	34	585	15	0	15	569	600
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	SB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	0	0	-	0	0		0	0	0	0	0	0	0	0
			2,343				625							62	2,993	3,157
		U	48	49	-	0	0		49	4	53	0	0	0	49	53
		L	51	52	-	0	0		52	4	56	0	0	0	52	56
	EB	T	575	584	-	3	120		707	43	747	0	0	0	707	747
		R	55	56	-	0	120	18	158	4	162	37	0	37	195	199
ODOT 3 Highway 214 Evergreen Rd TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.93		U	5	5	-	0	0		5	0	5	0	0	0	5	5
		L	88	89	-	0	21		110	7	116	30	0	30	140	146
	WB	T	655	665	-	3	113		781	49	827	0	0	0	781	827
		R	6	6	-	0	12		18	0	18	0	0	0	18	18
		L	406	412	-	2	257	67	604	30	632	25	0	25	629	657
	NB	T	23	23	-	0	0		23	2	25	0	0	0	23	25
		R	109	111	-	1	31		142	8	150	21	0	21	163	171
		L	11	11	-	0	5		16	1	17	0	0	0	16	17
	SB	T	19	19	-	0	0		19	1	20	0	0	0	19	20
		R	25	25	-	0	4		29	2	31	0	0	0	29	31
ODOT 3 Highway 214 Evergreen Rd TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.93			2,028				681							113	2,777	2,919

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
4 Highway 214 Oregon Way TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.95		U	9	9	-	0	0		9	1	10	0	0	0	9	10
		L	17	17	-	0	0		17	1	18	5	0	5	22	23
	EB	T	651	661	-	3	46		710	49	755	16	0	16	726	771
		R	2	2	-	0	4		6	0	6	0	0	0	6	6
		U	0	0	-	0	0		0	0	0	0	0	0	0	0
		L	2	2	-	0	72		74	0	74	0	0	0	74	74
	WB	T	688	698	-	3	27		728	52	776	23	0	23	751	799
		R	13	13	-	0	0		13	1	14	0	0	0	13	14
		L	8	8	-	0	92		100	1	100	0	0	0	100	100
	NB	T	8	8	-	0	2		10	1	11	0	0	0	10	11
		R	10	10	-	0	71		81	1	82	0	0	0	81	82
		L	9	9	-	0	0		9	1	10	0	0	0	9	10
	SB	T	5	5	-	0	2		7	0	7	0	0	0	7	7
		R	50	51	-	0	0		51	4	55	7	0	7	58	62
			1,463				315							51	1,857	1,959
5 Highway 214 Boones Ferry Rd TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.94		L	54	55	-	0	9		64	4	68	5	0	5	69	73
	EB	T	398	404	-	2	42		447	30	475	11	0	11	458	486
		R	100	102	-	1	31		134	8	141	0	0	0	134	141
		L	33	33	-	0	9		42	2	45	7	0	7	49	52
	WB	T	359	364	-	2	23		389	27	414	15	0	15	404	429
		R	30	30	-	0	12		42	2	44	0	0	0	42	44
		L	237	241	-	1	69		311	18	327	0	0	0	311	327
	NB	T	92	93	-	0	21		114	7	121	5	0	5	119	126
		R	70	71	-	0	14		86	5	91	5	0	5	91	96
		L	41	42	-	0	18		60	3	63	0	0	0	60	63
	SB	T	61	62	-	0	24		86	5	90	7	0	7	93	97
		R	79	80	-	0	24		104	6	109	8	0	8	112	117
			1,554				294							63	1,942	2,050
6 Stacy Allison Way Evergreen Rd TMC Date: 7/22/2025 7:00 - 8:00 PHF: 0.91		L	82	-	164	0	32		196	-	-	37	0	37	233	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	8	-	16	0	2		18	-	-	0	0	0	18	-
		L	1	-	2	0	0		2	-	-	0	0	0	2	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	2	-	4	0	0		4	-	-	0	0	0	4	-
		L	14	-	28	0	7		35	-	-	0	0	0	35	-
	NB	T	356	-	445	2	251		698	-	-	9	0	9	707	-
		R	2	-	4	0	0		4	-	-	0	0	0	4	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	80	-	160	0	128		289	-	-	13	0	13	302	-
		R	28	-	56	0	19		75	-	-	54	0	54	129	-
			573		879		440							113	1,434	0

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
7 Hayes St Evergreen Rd TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.76		L	12	-	24	0	20		44	-	-	0	0	0	44	-
	EB	T	11	-	22	0	0		22	-	-	0	0	0	22	-
		R	1	-	2	0	0		2	-	-	0	0	0	2	-
		L	30	-	60	0	3		63	-	-	35	0	35	98	-
	WB	T	20	-	40	0	0		40	-	-	0	0	0	40	-
		R	111	-	139	1	5		144	-	-	0	0	0	144	-
		L	2	-	4	0	0		4	-	-	0	0	0	4	-
	NB	T	252	-	315	1	231		547	-	-	9	0	9	556	-
		R	35	-	70	0	8		78	-	-	25	0	25	103	-
		L	37	-	74	0	2		76	-	-	0	0	0	76	-
	SB	T	44	-	88	0	122		210	-	-	13	0	13	223	-
		R	3	-	6	0	6		12	-	-	0	0	0	12	-
			558		844		396							82	1,324	0
8 Harvard Dr Evergreen Rd TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.76		L	4	-	8	0	1		9	-	-	0	0	0	9	-
	EB	T	107	-	134	1	38		172	-	-	34	0	34	206	-
		R	9	-	18	0	0		18	-	-	5	0	5	23	-
		L	27	-	54	0	27		81	-	-	0	0	0	81	-
	WB	T	30	-	60	0	14		74	-	-	48	0	48	122	-
		R	2	-	4	0	0		4	-	-	0	0	0	4	-
		L	3	-	6	0	0		6	-	-	7	0	7	13	-
	NB	T	31	-	62	0	0		62	-	-	0	0	0	62	-
		R	130	-	163	1	83		246	-	-	0	0	0	246	-
		L	3	-	6	0	0		6	-	-	0	0	0	6	-
	SB	T	36	-	72	0	0		72	-	-	0	0	0	72	-
		R	8	-	16	0	0		16	-	-	0	0	0	16	-
			390				162							94	861	0
9 W Hayes St Settlemier Ave TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.95		L	50	-	146	0	1		147	-	-	10	0	10	157	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	44	-	99	0	3		102	-	-	5	0	5	107	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	48	-	145	0	7		152	-	-	7	0	7	159	-
	NB	T	284	-	448	1	84		533	-	-	0	0	0	533	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	138	-	267	1	69		336	-	-	0	0	0	336	-
		R	17	-	51	0	0		51	-	-	14	0	14	65	-
			581		1,156		164							36	1,358	0
10 Hooper St Evergreen Rd TMC Date: 7/23/2025 7:15 - 8:15 PHF: 0.85		L	26	-	52	0	109		161	-	-	1	0	1	162	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	5	-	10	0	0		10	-	-	0	0	0	10	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	1	-	2	0	0		2	-	-	0	0	0	2	-
	NB	T	23	-	46	0	67		113	-	-	36	0	36	149	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	8	-	16	0	66		82	-	-	25	0	25	107	-
		R	12	-	24	0	39		63	-	-	1	0	1	64	-
			75				281							63	494	0

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
11 Evergreen Rd Parr Rd TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.73		L	0	-	0	0	9		9	-	-	0	0	0	9	-
	EB	T	0	-	0	0	8		8	-	-	0	0	0	8	-
		R	0	-	0	0	32		32	-	-	0	0	0	32	-
		L	73	-	146	0	9		155	-	-	0	0	0	155	-
	WB	T	0	-	0	0	12		12	-	-	0	0	0	12	-
		R	12	-	24	0	26		50	-	-	21	0	21	71	-
		L	0	-	0	0	28		28	-	-	0	0	0	28	-
	NB	T	6	-	12	0	52		64	-	-	15	0	15	79	-
		R	37	-	74	0	2		76	-	-	0	0	0	76	-
		L	7	-	14	0	17		31	-	-	15	0	15	46	-
	SB	T	11	-	22	0	33		55	-	-	10	0	10	65	-
		R	0	-	0	0	15		15	-	-	0	0	0	15	-
			146				243							61	597	0
12 Parr Rd Settlemier Ave TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.88		L	23	-	124	0	24		148	-	-	0	0	0	148	-
	EB	T	28	-	140	0	20		160	-	-	0	0	0	160	-
		R	32	-	101	0	11		112	-	-	15	0	15	127	-
		L	17	-	20	0	5		25	-	-	0	0	0	25	-
	WB	T	23	-	130	0	11		141	-	-	0	0	0	141	-
		R	6	-	1	0	0		1	-	-	0	0	0	1	-
		L	50	-	138	0	25		163	-	-	21	0	21	184	-
	NB	T	86	-	136	0	67		203	-	-	0	0	0	203	-
		R	22	-	29	0	14		43	-	-	0	0	0	43	-
		L	1	-	5	0	0		5	-	-	0	0	0	5	-
	SB	T	60	-	75	0	25		100	-	-	0	0	0	100	-
		R	23	-	77	0	17		94	-	-	0	0	0	94	-
			371				219							36	1,232	0
13 Parr Rd Butteville Rd TMC Date: 7/23/2025 7:00 - 8:00 PHF: 0.77		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	17	-	34	0	10		44	-	-	10	0	10	54	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	71	-	142	0	86		228	-	-	0	0	0	228	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	NB	T	174	-	348	1	0		349	-	-	0	0	0	349	-
		R	21	-	42	0	8		50	-	-	15	0	15	65	-
		L	30	-	60	0	64		124	-	-	0	0	0	124	-
	SB	T	76	-	152	0	0		152	-	-	0	0	0	152	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
			389				168							25	973	0
City 14 Stacy Allison Way North Site Drwy		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	32	0	32	32	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	NB	T	0	-	0	0	23		23	-	-	5	0	5	28	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	49	0	49	49	-
	SB	T	0	-	0	0	8		8	-	-	5	0	5	13	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
			0				39							91	122	0

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
City 15 Stacy Allison Way South Site Drwy		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	5	0	5	5	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	NB	T	0	-	0	0	23		23	-	-	0	0	0	23	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	5	0	5	5	-
City 16 Evergreen Rd Site Drwy	SB	T	0	-	0	0	8		8	-	-	0	0	0	8	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
			0				39							10	41	0
		L	0	-	0	0	0		0	-	-	39	0	39	39	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	26	0	26	26	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	37	0	37	37	-
	NB	T	49	-	98	0	67		165	-	-	0	0	0	165	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	20	-	40	0	66		106	-	-	0	0	0	106	-
		R	0	-	0	0	0		0	-	-	55	0	55	55	-
			69				148							157	428	0

WinCo Foods - Woodburn, OR

PM Peak Hour Volumes

School Traffic Adjustment : 1.1 City
 ODOT 30th Hour Adjustment : 1.015 ODOT
 Annual Growth Rate: 0.50% City
 Annual Growth Rate: 0.50% ODOT
 Parr Connection Shift: 10%

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
ODOT 1 I-5 SB Ramps Highway 219 TMC Date: 7/22/2025 5:00 - 6:00 PHF: 0.95		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	EB	T	684	694	-	3	50	51	696	51	744	13	0	13	709	757
		R	403	409	-	2	60		471	30	499	0	0	0	471	499
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	WB	T	899	912	-	4	42	63	895	67	958	13	0	13	908	971
		R	387	393	-	2	70		465	29	492	26	0	26	491	518
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	NB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	0	0	-	0	0		0	0	0	0	0	0	0	0
		L	470	477	-	2	230		709	35	742	26	0	26	735	768
ODOT 2 I-5 NB Ramps Highway 219 TMC Date: 7/22/2025 5:00 - 6:00 PHF: 0.93		T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	310	315	-	2	52		369	23	390	0	0	0	369	390
			3,153	3,200			503							78	3,683	3,903
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	EB	T	963	977	-	5	275	51	1,205	72	1,272	39	0	39	1,244	1,311
		R	191	194	-	1	19		214	14	227	0	0	0	214	227
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	WB	T	942	956	-	5	99	63	997	71	1,063	39	0	39	1,036	1,102
		R	267	271	-	1	194		467	20	485	26	0	26	493	511
		L	344	349	-	2	16		367	26	391	0	0	0	367	391
ODOT 3 Highway 214 Evergreen Rd TMC Date: 7/22/2025 4:45 - 5:45 PHF: 0.95	NB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	508	516	-	3	129		648	38	683	26	0	26	674	709
		L	0	0	-	0	0		0	0	0	0	0	0	0	0
	SB	T	0	0	-	0	0		0	0	0	0	0	0	0	0
		R	0	0	-	0	0		0	0	0	0	0	0	0	0
			3,215	3,263			732							130	4,027	4,252
		U	44	45	-	0	0		45	3	48	0	0	0	45	48
		L	75	76	-	0	0		76	6	82	0	0	0	76	82
	EB	T	888	901	-	4	159		1,064	67	1,127	0	-41	-41	1,023	1,086
		R	237	241	-	1	273	51	463	18	480	65	41	106	569	586
ODOT 3 Highway 214 Evergreen Rd TMC Date: 7/22/2025 4:45 - 5:45 PHF: 0.95		U	12	12	-	0	0		12	1	13	0	0	0	12	13
		L	189	192	-	1	27		220	14	233	53	41	94	314	327
	WB	T	741	752	-	4	105		861	56	913	0	-41	-41	820	872
		R	10	10	-	0	33		43	1	44	0	0	0	43	44
		L	421	427	-	2	198	63	565	32	594	65	42	107	672	701
	NB	T	44	45	-	0	0		45	3	48	0	0	0	45	48
		R	135	137	-	1	41		178	10	188	53	41	94	272	282
		L	36	37	-	0	0		37	3	40	0	0	0	37	40
	SB	T	45	46	-	0	0		46	3	49	0	0	0	46	49
		R	75	76	-	0	0		76	6	82	0	0	0	76	82
			2,908	2,997			836							319	4,007	4,211

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
ODOT 4 Highway 214 Oregon Way TMC Date: 7/22/2025 4:15 - 5:15 PHF: 0.94		U	15	15	-	0	0		15	1	16	0	0	0	15	16
		L	73	74	-	0	0		74	5	79	13	0	13	87	92
	EB	T	942	956	-	5	53		1,013	71	1,079	40	0	40	1,053	1,119
		R	33	33	-	0	4		37	2	40	0	0	0	37	40
		U	0	0	-	0	0		0	0	0	0	0	0	0	0
		L	12	12	-	0	51		63	1	64	0	0	0	63	64
	WB	T	878	891	-	4	62		957	66	1,018	40	0	40	997	1,058
		R	52	53	-	0	0		53	4	57	0	0	0	53	57
		L	20	20	-	0	83		103	2	104	0	0	0	103	104
	NB	T	28	28	-	0	3		31	2	33	0	0	0	31	33
		R	3	3	-	0	60		63	0	63	0	0	0	63	63
		L	57	58	-	0	0		58	4	62	0	0	0	58	62
	SB	T	30	30	-	0	2		32	2	34	0	0	0	32	34
		R	57	58	-	0	0		58	4	62	13	0	13	71	75
			2,185	2,231			317							106	2,650	2,803
ODOT 5 Highway 214 Boones Ferry Rd TMC Date: 7/23/2025 4:30 - 5:30 PHF: 0.98		L	82	83	-	0	27		110	6	116	13	0	13	123	129
	EB	T	553	561	-	3	26		589	41	628	27	0	27	616	655
		R	284	288	-	1	65		354	21	374	0	0	0	354	374
		L	85	86	-	0	17		104	6	110	13	0	13	117	123
	WB	T	579	588	-	3	41		632	43	672	27	0	27	659	699
		R	83	84	-	0	37		121	6	127	0	0	0	121	127
		L	225	228	-	1	53		282	17	297	0	0	0	282	297
	NB	T	109	111	-	1	27		138	8	146	13	0	13	151	159
		R	90	91	-	0	11		102	7	108	13	0	13	115	121
		L	81	82	-	0	12		94	6	100	0	0	0	94	100
	SB	T	205	208	-	1	26		235	15	249	13	0	13	248	262
		R	119	121	-	1	16		137	9	146	13	0	13	150	159
			2,495	2,531			355							132	3,030	3,205
City 6 Stacy Allison Way Evergreen Rd TMC Date: 7/22/2025 4:00 - 5:00 PHF: 0.94		L	223	-	245	1	59		305	-	-	94	66	160	465	-
	EB	T	3	-	3	0	0		3	-	-	0	0	0	3	-
		R	61	-	67	0	10		77	-	-	0	0	0	77	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	6	-	7	0	0		7	-	-	0	0	0	7	-
		L	28	-	31	0	6		37	-	-	0	0	0	37	-
	NB	T	305	-	336	2	171		508	-	-	24	16	40	548	-
		R	3	-	3	0	0		3	-	-	0	0	0	3	-
		L	4	-	4	0	0		4	-	-	0	0	0	4	-
	SB	T	317	-	349	2	285		635	-	-	24	16	40	675	-
		R	85	-	94	0	36		130	-	-	94	66	160	290	-
			1,035		1,139		567							400	2,111	0

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
City 7 Hayes St Evergreen Rd TMC Date: 7/23/2025 4:30 - 5:30 PHF: 0.95		L	10	-	11	0	12		23	-	-	0	0	0	23	-
	EB	T	49	-	54	0	0		54	-	-	0	0	0	54	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	102	-	112	1	8		121	-	-	65	0	65	186	-
	WB	T	65	-	72	0	0		72	-	-	0	0	0	72	-
		R	139	-	153	1	3		157	-	-	0	0	0	157	-
		L	3	-	3	0	0		3	-	-	0	0	0	3	-
	NB	T	208	-	229	1	160		390	-	-	24	16	40	430	-
		R	90	-	99	0	5		104	-	-	0	0	0	104	-
		L	164	-	180	1	5		186	-	-	0	0	0	186	-
	SB	T	163	-	179	1	265		445	-	-	24	16	40	485	-
		R	19	-	21	0	21		42	-	-	0	0	0	42	-
			1,012		1,113		479							145	1,742	0
City 8 Harvard Dr Evergreen Rd TMC Date: 7/23/2025 4:00 - 5:00 PHF: 0.91		L	15	-	17	0	1		18	-	-	0	0	0	18	-
	EB	T	136	-	150	1	28		178	-	-	89	16	105	283	-
		R	30	-	33	0	0		33	-	-	13	0	13	46	-
		L	99	-	109	0	90		199	-	-	0	0	0	199	-
	WB	T	109	-	120	1	43		164	-	-	89	16	105	269	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	6	-	7	0	0		7	-	-	13	0	13	20	-
	NB	T	53	-	58	0	0		58	-	-	0	0	0	58	-
		R	96	-	106	0	37		143	-	-	0	0	0	143	-
		L	7	-	8	0	0		8	-	-	0	0	0	8	-
	SB	T	146	-	161	1	0		162	-	-	0	0	0	162	-
		R	62	-	68	0	2		70	-	-	0	0	0	70	-
			759		837		200							236	1,277	0
City use 2024 counts 9 W Hayes St Settlemier Ave TMC Date: 7/23/2025 4:15 - 5:15 PHF: 0.89		L	117	-	87	1	1		88	-	-	26	0	26	114	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	176	-	169	1	9		179	-	-	13	0	13	192	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	127	-	165	1	6		171	-	-	13	0	13	184	-
	NB	T	304	-	372	2	73		447	-	-	0	0	0	447	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	356	-	401	2	114		516	-	-	0	0	0	516	-
		R	65	-	72	0	1		73	-	-	26	0	26	99	-
			1,145		1,266		202							78	1,552	0
City 10 Hooper St Evergreen Rd TMC Date: 7/23/2025 4:00 - 5:00 PHF: 0.77		L	22	-	24	0	71		95	-	-	3	0	3	98	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	8	-	9	0	0		9	-	-	0	0	0	9	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	5	-	6	0	0		6	-	-	0	0	0	6	-
	NB	T	26	-	29	0	54		83	-	-	63	0	63	146	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	39	-	43	0	94		137	-	-	62	0	62	199	-
		R	29	-	32	0	110		142	-	-	3	0	3	145	-
			129		143		329							131	603	0

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
	Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes		
City 11 Parr Rd Evergreen Rd TMC Date: 7/23/2025 5:00 - 6:00 PHF: 0.84		L	0	-	0	0	8		8	-	-	0	0	0	8	-
	EB	T	0	-	0	0	9		9	-	-	0	0	0	9	-
		R	0	-	0	0	28		28	-	-	0	0	0	28	-
		L	82	-	90	0	3		93	-	-	0	0	0	93	-
	WB	T	0	-	0	0	13		13	-	-	0	0	0	13	-
		R	16	-	18	0	25		43	-	-	37	0	37	80	-
		L	0	-	0	0	28		28	-	-	0	0	0	28	-
	NB	T	14	-	15	0	45		60	-	-	26	0	26	86	-
		R	94	-	103	0	5		108	-	-	0	0	0	108	-
		L	13	-	14	0	26		40	-	-	36	0	36	76	-
	SB	T	14	-	15	0	50		65	-	-	26	0	26	91	-
		R	0	-	0	0	13		13	-	-	0	0	0	13	-
			233		255		269							125	634	0
City use 2024 counts 12 Settlemier Ave Parr Rd TMC Date: 7/23/2025 5:00 - 6:00 PHF: 0.93		L	33	-	45	0	17		62	-	-	0	0	0	62	-
	EB	T	48	-	52	0	15		67	-	-	0	0	0	67	-
		R	89	-	90	0	26		116	-	-	36	0	36	152	-
		L	53	-	61	0	14		75	-	-	0	0	0	75	-
	WB	T	84	-	83	0	23		106	-	-	0	0	0	106	-
		R	5	-	7	0	0		7	-	-	0	0	0	7	-
		L	60	-	63	0	17		80	-	-	37	0	37	117	-
	NB	T	121	-	149	1	45		195	-	-	0	0	0	195	-
		R	40	-	44	0	8		52	-	-	0	0	0	52	-
		L	3	-	4	0	0		4	-	-	0	0	0	4	-
	SB	T	128	-	169	1	77		247	-	-	0	0	0	247	-
		R	56	-	44	0	28		72	-	-	0	0	0	72	-
			720		811		253						73	1,157	0	
City 13 Parr Rd Butterville Rd TMC Date: 7/23/2025 4:45 - 5:45 PHF: 0.84		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	48	-	53	0	7		60	-	-	26	0	26	86	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	46	-	51	0	70		121	-	-	0	0	0	121	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	NB	T	145	-	160	1	0		161	-	-	0	0	0	161	-
		R	48	-	53	0	11		64	-	-	26	0	26	90	-
		L	78	-	86	0	85		171	-	-	0	0	0	171	-
	SB	T	214	-	235	1	0		236	-	-	0	0	0	236	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
			579		638		173						52	866	0	
City 14 Stacy Allison Way North Site Drwy		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	89	66	155	155	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	NB	T	0	-	0	0	15		15	-	-	5	0	5	20	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	89	66	155	155	-
	SB	T	0	-	0	0	24		24	-	-	5	0	5	29	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
			0		0		39						320	359	0	

Intersection	Movement		Existing	Adjusted	Adjusted	Background	Total	Parr	Baseline	Background	Baseline	Primary	Pass-By	Site	Projected	Projected
			2025	ODOT	City	2026	Pipeline	Connection	2026	2040	2040	Car	Car	Generated	2026	2040
			Counts	Volumes	Volumes	Growth	Volumes	Shift	Volumes	Growth	Volumes	Trips	Trips	Volumes	Volumes	Volumes
City 15 Stacy Allison Way South Site Drwy		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	5	0	5	5	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	NB	T	0	-	0	0	15		15	-	-	0	0	0	15	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	5	0	5	5	-
	SB	T	0	-	0	0	24		24	-	-	0	0	0	24	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
			0		0		39							10	49	0
City 16 Evergreen Rd Site Drwy		L	0	-	0	0	0		0	-	-	102	16	118	118	-
	EB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	65	0	65	65	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	WB	T	0	-	0	0	0		0	-	-	0	0	0	0	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	66	0	66	66	-
	NB	T	48	-	53	0	54		107	-	-	0	0	0	107	-
		R	0	-	0	0	0		0	-	-	0	0	0	0	-
		L	0	-	0	0	0		0	-	-	0	0	0	0	-
	SB	T	68	-	75	0	94		169	-	-	0	0	0	169	-
		R	0	-	0	0	0		0	-	-	102	16	118	118	-
			116		128		148							367	643	0

Appendix C

Operations Analysis Worksheets

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Woodburn WinCo
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	170	0	475	380	0	0	0	195	0	165
Future Volume (vph)	0	340	170	0	475	380	0	0	0	195	0	165
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3107	1361		3137	1403				2906		1340
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3107	1361		3137	1403				2906		1340
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	366	183	0	511	409	0	0	0	210	0	177
RTOR Reduction (vph)	0	0	40	0	0	88	0	0	0	0	0	155
Lane Group Flow (vph)	0	366	143	0	511	321	0	0	0	210	0	22
Confl. Peds. (#/hr)			2									
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	0%	0%	0%	11%	11%	11%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		78.4	78.4		78.4	78.4				12.6		12.6
Effective Green, g (s)		78.4	78.4		78.4	78.4				12.6		12.6
Actuated g/C Ratio		0.78	0.78		0.78	0.78				0.13		0.13
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2435	1067		2459	1099				366		168
v/s Ratio Prot		0.12			0.16					c0.07		
v/s Ratio Perm			0.11			c0.23						0.02
v/c Ratio		0.15	0.13		0.21	0.29				0.57		0.13
Uniform Delay, d1		2.6	2.6		2.8	3.0				41.2		38.8
Progression Factor		1.00	1.00		0.67	1.29				1.00		1.00
Incremental Delay, d2		0.1	0.3		0.2	0.7				2.2		0.4
Delay (s)		2.8	2.9		2.1	4.6				43.3		39.2
Level of Service		A	A		A	A				D		D
Approach Delay (s/veh)		2.8			3.2			0.0			41.5	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			11.0									B
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			100.0							9.0		
Intersection Capacity Utilization			32.8%								A	
ICU Level of Service												
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Woodburn WinCo
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	340	170	0	475	380	0	0	0	195	0	165
Future Volume (veh/h)	0	340	170	0	475	380	0	0	0	195	0	165
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1654	1654	0	1668	1668				1600	0	1600
Adj Flow Rate, veh/h	0	366	0	0	511	0				210	0	177
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	7	7	0	6	6				11	0	11
Cap, veh/h	0	2359		0	2379					471	0	216
Arrive On Green	0.00	0.75	0.00	0.00	1.00	0.00				0.16	0.00	0.16
Sat Flow, veh/h	0	3226	1402	0	3253	1414				2956	0	1356
Grp Volume(v), veh/h	0	366	0	0	511	0				210	0	177
Grp Sat Flow(s),veh/h/ln	0	1572	1402	0	1585	1414				1478	0	1356
Q Serve(g_s), s	0.0	3.3	0.0	0.0	0.0	0.0				6.4	0.0	12.6
Cycle Q Clear(g_c), s	0.0	3.3	0.0	0.0	0.0	0.0				6.4	0.0	12.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2359		0	2379					471	0	216
V/C Ratio(X)	0.00	0.16		0.00	0.21					0.45	0.00	0.82
Avail Cap(c_a), veh/h	0	2359		0	2379					1049	0	481
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	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.5	0.0	0.0	0.0	0.0				38.0	0.0	40.6
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.2	0.0				0.7	0.0	7.5
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	0.9	0.0	0.0	0.1	0.0				2.4	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	3.7	0.0	0.0	0.2	0.0				38.7	0.0	48.1
LnGrp LOS		A			A					D		D
Approach Vol, veh/h		366			511						387	
Approach Delay, s/veh		3.7			0.2						43.0	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		79.6		20.4		79.6						
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		5.3		14.6		2.0						
Green Ext Time (p_c), s		2.7		1.3		4.0						
Intersection Summary												
HCM 7th Control Delay, s/veh			14.3									
HCM 7th LOS			B									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Woodburn WinCo
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	355	175	0	595	255	455
Future Volume (vph)	355	175	0	595	255	455
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.98		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.93	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3079	1344		3137	2865	1277
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3079	1344		3137	2865	1277
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	184	0	626	268	479
RTOR Reduction (vph)	0	47	0	0	203	202
Lane Group Flow (vph)	374	137	0	626	305	37
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	8%	8%	6%	6%	6%	6%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	74.5	74.5		74.5	15.6	15.6
Effective Green, g (s)	74.5	74.5		74.5	15.6	15.6
Actuated g/C Ratio	0.75	0.75		0.75	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2293	1001		2337	446	199
v/s Ratio Prot	0.12			c0.20	c0.11	0.03
v/s Ratio Perm		0.10				
v/c Ratio	0.16	0.14		0.27	0.68	0.19
Uniform Delay, d1	3.7	3.6		4.1	39.9	36.7
Progression Factor	0.95	1.65		0.66	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.2	4.3	0.5
Delay (s)	3.7	6.2		2.9	44.2	37.1
Level of Service	A	A		A	D	D
Approach Delay (s/veh)	4.5			2.9	41.9	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			18.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.34			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Woodburn WinCo
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	50	50	585	55	5	90	665	5	410	25	110	10
Future Volume (vph)	50	50	585	55	5	90	665	5	410	25	110	10
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3137	1368		1573	3134		1548	1561	1436	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1614	3137	1368		1573	3134		1548	1561	1436	1646
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	54	629	59	5	97	715	5	441	27	118	11
RTOR Reduction (vph)	0	0	0	32	0	0	1	0	0	0	95	0
Lane Group Flow (vph)	0	108	629	27	0	102	719	0	234	234	23	11
Confl. Peds. (#/hr)				2					5		2	2
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	6%	6%	6%	2%	2%	2%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		11.4	46.0	46.0		9.9	44.5		19.1	19.1	19.1	7.5
Effective Green, g (s)		11.4	46.0	46.0		9.9	44.5		19.1	19.1	19.1	7.5
Actuated g/C Ratio		0.11	0.46	0.46		0.10	0.45		0.19	0.19	0.19	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		183	1443	629		155	1394		295	298	274	123
v/s Ratio Prot		c0.07	0.20			0.06	c0.23		c0.15	0.15		0.01
v/s Ratio Perm				0.02							0.02	
v/c Ratio		0.59	0.44	0.04		0.66	0.52		0.79	0.79	0.08	0.09
Uniform Delay, d1		42.1	18.2	14.9		43.4	20.0		38.6	38.5	33.2	43.1
Progression Factor		1.07	0.71	1.52		0.86	1.21		1.00	1.00	1.00	1.00
Incremental Delay, d2		4.9	0.9	0.1		9.4	1.3		13.6	12.7	0.1	0.3
Delay (s)		50.0	13.9	22.7		46.8	25.5		52.2	51.2	33.4	43.4
Level of Service		D		C		D	C		D	D	C	D
Approach Delay (s/veh)			19.5				28.2			48.0		
Approach LOS			B				C			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			30.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			57.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Woodburn WinCo
AM Peak Hour



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	20	25
Future Volume (vph)	20	25
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.92	
Flt Protected	1.00	
Satd. Flow (prot)	1575	
Flt Permitted	1.00	
Satd. Flow (perm)	1575	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	27
RTOR Reduction (vph)	25	0
Lane Group Flow (vph)	24	0
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.5	
Effective Green, g (s)	7.5	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	118	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.20	
Uniform Delay, d1	43.4	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	44.3	
Level of Service	D	
Approach Delay (s/veh)	44.1	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Woodburn WinCo
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	10	15	660	5	1	5	700	15	10	10	10	10
Future Volume (vph)	10	15	660	5	1	5	700	15	10	10	10	10
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	1.00		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1605	3133			1571	3096		1646	1580		1630
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1605	3133			1571	3096		1646	1580		1630
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	16	695	5	1	5	737	16	11	11	11	11
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	10	0	0
Lane Group Flow (vph)	0	27	700	0	0	6	752	0	11	12	0	11
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	7%	7%	7%	1%	1%	1%	2%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		4.9	74.8			1.4	71.3		1.5	5.8		1.5
Effective Green, g (s)		4.9	74.8			1.4	71.3		1.5	5.8		1.5
Actuated g/C Ratio		0.05	0.75			0.01	0.71		0.02	0.06		0.02
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		78	2343			21	2207		24	91		24
v/s Ratio Prot		c0.02	c0.22			0.00	c0.24		0.01	c0.01		c0.01
v/s Ratio Perm												
v/c Ratio		0.35	0.30			0.29	0.34		0.46	0.13		0.46
Uniform Delay, d1		46.0	4.1			48.8	5.4		48.8	44.7		48.8
Progression Factor		0.56	2.56			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		2.5	0.3			7.4	0.4		13.2	0.6		13.2
Delay (s)		28.1	10.8			56.2	5.9		62.1	45.3		62.1
Level of Service		C	B			E	A		E	D		E
Approach Delay (s/veh)			11.4				6.3			50.9		
Approach LOS			B				A			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			11.4				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			37.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Woodburn WinCo
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	👉	
Traffic Volume (vph)	5	50
Future Volume (vph)	5	50
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.98	
Flpb, ped/bikes	1.00	
Frt	0.86	
Flt Protected	1.00	
Satd. Flow (prot)	1453	
Flt Permitted	1.00	
Satd. Flow (perm)	1453	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	5	53
RTOR Reduction (vph)	50	0
Lane Group Flow (vph)	8	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	2%	2%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	5.8	
Effective Green, g (s)	5.8	
Actuated g/C Ratio	0.06	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	84	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.10	
Uniform Delay, d1	44.6	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	45.1	
Level of Service	D	
Approach Delay (s/veh)	47.8	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Woodburn WinCo
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	405	100	35	365	30	240	95	70	40	60	80
Future Volume (vph)	55	405	100	35	365	30	240	95	70	40	60	80
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	59	431	106	37	388	32	255	101	74	43	64	85
RTOR Reduction (vph)	0	0	43	0	0	19	0	0	50	0	0	72
Lane Group Flow (vph)	59	431	63	37	388	13	255	101	24	43	64	13
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	7%	7%	7%	12%	12%	12%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	4.6	24.9	42.0	3.9	24.2	28.8	17.1	18.9	22.8	4.6	6.4	11.0
Effective Green, g (s)	4.6	24.9	42.0	3.9	24.2	28.8	17.1	18.9	22.8	4.6	6.4	11.0
Actuated g/C Ratio	0.07	0.35	0.60	0.06	0.34	0.41	0.24	0.27	0.32	0.07	0.09	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	579	919	82	537	629	396	461	555	106	156	321
v/s Ratio Prot	c0.04	c0.26	0.02	0.02	0.25	0.00	c0.16	0.06	0.00	0.03	c0.04	0.00
v/s Ratio Perm			0.03			0.01			0.01			0.01
v/c Ratio	0.58	0.74	0.07	0.45	0.72	0.02	0.64	0.22	0.04	0.41	0.41	0.04
Uniform Delay, d1	31.9	19.9	5.9	32.2	20.1	12.4	23.9	20.0	16.3	31.5	30.2	25.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	5.2	0.0	3.9	4.8	0.0	3.6	0.2	0.0	2.5	1.8	0.1
Delay (s)	40.3	25.1	6.0	36.1	24.9	12.4	27.4	20.2	16.3	34.1	31.9	25.2
Level of Service	D	C	A	D	C	B	C	C	B	C	C	C
Approach Delay (s/veh)		23.2			24.9			23.8			29.4	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			24.5									
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			70.3									
Intersection Capacity Utilization			59.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary 5: Settlemier St/Boones Ferry Rd & OR 214

Woodburn WinCo
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	405	100	35	365	30	240	95	70	40	60	80
Future Volume (veh/h)	55	405	100	35	365	30	240	95	70	40	60	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1654	1654	1654	1586	1586	1586	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	59	431	106	37	388	32	255	101	74	43	64	85
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	12	12	12	2	2	2	2	2	2
Cap, veh/h	86	543	729	60	497	481	314	425	410	73	172	226
Arrive On Green	0.05	0.33	0.33	0.04	0.31	0.31	0.19	0.25	0.25	0.04	0.10	0.10
Sat Flow, veh/h	1576	1654	1402	1511	1586	1344	1641	1723	1426	1641	1723	1460
Grp Volume(v), veh/h	59	431	106	37	388	32	255	101	74	43	64	85
Grp Sat Flow(s),veh/h/ln	1576	1654	1402	1511	1586	1344	1641	1723	1426	1641	1723	1460
Q Serve(g_s), s	1.9	12.5	2.1	1.3	11.7	0.8	7.9	2.5	2.1	1.4	1.8	2.8
Cycle Q Clear(g_c), s	1.9	12.5	2.1	1.3	11.7	0.8	7.9	2.5	2.1	1.4	1.8	2.8
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	86	543	729	60	497	481	314	425	410	73	172	226
V/C Ratio(X)	0.68	0.79	0.15	0.62	0.78	0.07	0.81	0.24	0.18	0.59	0.37	0.38
Avail Cap(c_a), veh/h	194	986	1104	157	916	835	574	1255	1097	202	864	812
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	24.5	16.1	6.6	25.0	16.5	11.2	20.5	15.9	14.2	24.8	22.2	20.0
Incr Delay (d2), s/veh	9.1	2.7	0.1	9.9	2.7	0.1	5.1	0.3	0.2	7.5	1.3	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.5	0.5	0.6	4.1	0.2	3.2	0.9	0.6	0.6	0.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.6	18.8	6.7	34.9	19.2	11.2	25.5	16.2	14.4	32.2	23.6	21.1
LnGrp LOS	C	B	A	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h	596			457			430			192		
Approach Delay, s/veh	18.1			19.9			21.4			24.4		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	21.9	14.6	9.8	7.4	21.1	6.8	17.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	31.5	18.5	26.5	6.5	30.5	6.5	38.5				
Max Q Clear Time (g_c+I1), s	3.3	14.5	9.9	4.8	3.9	13.7	3.4	4.5				
Green Ext Time (p_c), s	0.0	2.9	0.5	0.5	0.0	2.3	0.0	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.2											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved changes to right turn type.												

HCM 7th TWSC
6: Evergreen Rd & Stacy Allison Way

Woodburn WinCo
AM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	165	15	30	445	160	55
Future Vol, veh/h	165	15	30	445	160	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	1	1	4	4
Mvmt Flow	181	16	33	489	176	60

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	761	206	236	0	-	0
Stage 1	206	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.11	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.209	-	-	-
Pot Cap-1 Maneuver	366	822	1337	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	357	822	1337	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	565	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	17.35	0.49	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1337	-	455	822	-	-
HCM Lane V/C Ratio	0.025	-	0.399	0.02	-	-
HCM Ctrl Dly (s/v)	7.8	-	18.1	9.5	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	1.9	0.1	-	-

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	20	5	60	40	140	5	315	70	75	90	5
Future Vol, veh/h	25	20	5	60	40	140	5	315	70	75	90	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	4	4	4
Mvmt Flow	28	23	6	68	45	159	6	358	80	85	102	6
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	10.1	12.4	19.8	10.4
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	50%	25%	100%	0%
Vol Thru, %	0%	82%	40%	17%	0%	95%
Vol Right, %	0%	18%	10%	58%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	385	50	240	75	95
LT Vol	5	0	25	60	75	0
Through Vol	0	315	20	40	0	90
RT Vol	0	70	5	140	0	5
Lane Flow Rate	6	438	57	273	85	108
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.01	0.687	0.099	0.416	0.158	0.183
Departure Headway (Hd)	6.287	5.652	6.296	5.494	6.66	6.114
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	569	639	566	655	538	585
Service Time	4.026	3.39	4.366	3.545	4.412	3.865
HCM Lane V/C Ratio	0.011	0.685	0.101	0.417	0.158	0.185
HCM Control Delay, s/veh	9.1	19.9	10.1	12.4	10.7	10.2
HCM Lane LOS	A	C	B	B	B	B
HCM 95th-tile Q	0	5.4	0.3	2	0.6	0.7

HCM 7th TWSC
8: Harvard Dr & Evergreen Rd

Woodburn WinCo
AM Peak Hour

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	135	20	55	60	5	5	60	165	5	70	15
Future Vol, veh/h	10	135	20	55	60	5	5	60	165	5	70	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	5	5	5	1	1	1	4	4	4
Mvmt Flow	11	153	23	63	68	6	6	68	188	6	80	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	176	0	0	420	386	165	406	395	71
Stage 1	-	-	-	-	-	-	188	188	-	196	196	-
Stage 2	-	-	-	-	-	-	233	199	-	210	199	-
Critical Hdwy	4.13	-	-	4.15	-	-	7.11	6.51	6.21	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.509	4.009	3.309	3.536	4.036	3.336
Pot Cap-1 Maneuver	1519	-	-	1382	-	-	545	549	882	552	539	986
Stage 1	-	-	-	-	-	-	817	747	-	801	735	-
Stage 2	-	-	-	-	-	-	772	738	-	787	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1382	-	-	432	521	882	360	511	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	432	521	-	360	511	-
Stage 1	-	-	-	-	-	-	810	741	-	765	702	-
Stage 2	-	-	-	-	-	-	642	705	-	559	727	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.45	3.54	12.61	13.19
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	733	1519	-	-	1382	-	-	542
HCM Lane V/C Ratio	0.357	0.007	-	-	0.045	-	-	0.189
HCM Ctrl Dly (s/v)	12.6	7.4	-	-	7.7	-	-	13.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-	0.7

HCM 7th Signalized Intersection Summary 9: Settlemier St & Hayes St

Woodburn WinCo
AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	100	145	450	265	50
Future Volume (veh/h)	145	100	145	450	265	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1709	1709	1736	1736
Adj Flow Rate, veh/h	153	105	153	474	279	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	1	1
Cap, veh/h	252	224	193	946	409	78
Arrive On Green	0.15	0.15	0.12	0.55	0.29	0.29
Sat Flow, veh/h	1641	1460	1628	1709	1418	269
Grp Volume(v), veh/h	153	105	153	474	0	332
Grp Sat Flow(s),veh/h/ln	1641	1460	1628	1709	0	1688
Q Serve(g_s), s	2.7	2.0	2.8	5.3	0.0	5.4
Cycle Q Clear(g_c), s	2.7	2.0	2.8	5.3	0.0	5.4
Prop In Lane	1.00	1.00	1.00			0.16
Lane Grp Cap(c), veh/h	252	224	193	946	0	487
V/C Ratio(X)	0.61	0.47	0.79	0.50	0.00	0.68
Avail Cap(c_a), veh/h	961	855	503	1834	0	1043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	11.9	13.2	4.2	0.0	9.7
Incr Delay (d2), s/veh	2.4	1.5	7.1	0.4	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.1	1.2	0.7	0.0	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.5	13.4	20.3	4.7	0.0	11.4
LnGrp LOS	B	B	C	A		B
Approach Vol, veh/h	258			627	332	
Approach Delay, s/veh	14.0			8.5	11.4	
Approach LOS	B			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	21.5			9.2	8.1	13.4
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0			18.0	9.5	19.0
Max Q Clear Time (g_c+I1), s	7.3			4.7	4.8	7.4
Green Ext Time (p_c), s	3.2			0.6	0.2	1.5
Intersection Summary						
HCM 7th Control Delay, s/veh			10.4			
HCM 7th LOS			B			

HCM 7th TWSC
10: Evergreen Rd & Hopper St

Woodburn WinCo
AM Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	10	5	45	15	25
Future Vol, veh/h	50	10	5	45	15	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	550	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	5	5
Mvmt Flow	57	11	6	51	17	28

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	94	31	45
Stage 1	31	-	-
Stage 2	63	-	-
Critical Hdwy	6.41	6.21	4.11
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	2.209
Pot Cap-1 Maneuver	908	1046	1569
Stage 1	994	-	-
Stage 2	963	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	905	1046	1569
Mov Cap-2 Maneuver	858	-	-
Stage 1	990	-	-
Stage 2	963	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.41	0.73	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1569	-	884	-	-
HCM Lane V/C Ratio	0.004	-	0.077	-	-
HCM Ctrl Dly (s/v)	7.3	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	5	5	145	5	25	5	10	75	15	20	5
Future Vol, veh/h	5	5	5	145	5	25	5	10	75	15	20	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	6	6	6	165	6	28	6	11	85	17	23	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	8.7	7.5	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	33%	83%	38%
Vol Thru, %	11%	33%	3%	50%
Vol Right, %	83%	33%	14%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	15	175	40
LT Vol	5	5	145	15
Through Vol	10	5	5	20
RT Vol	75	5	25	5
Lane Flow Rate	102	17	199	45
Geometry Grp	1	1	1	1
Degree of Util (X)	0.113	0.02	0.236	0.057
Departure Headway (Hd)	3.976	4.315	4.265	4.519
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	906	832	831	797
Service Time	1.978	2.327	2.344	2.523
HCM Lane V/C Ratio	0.113	0.02	0.239	0.056
HCM Control Delay, s/veh	7.5	7.4	8.7	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.9	0.2

Intersection

Intersection Delay, s/veh 14.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	125	140	100	20	130	5	140	140	30	5	75	75
Future Vol, veh/h	125	140	100	20	130	5	140	140	30	5	75	75
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	1	1	1
Mvmt Flow	142	159	114	23	148	6	159	159	34	6	85	85
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay, s/veh	14	12.5	18.9	10.8
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	50%	0%	100%	0%	100%	0%	6%	0%
Vol Thru, %	50%	0%	0%	58%	0%	96%	94%	0%
Vol Right, %	0%	100%	0%	42%	0%	4%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	30	125	240	20	135	80	75
LT Vol	140	0	125	0	20	0	5	0
Through Vol	140	0	0	140	0	130	75	0
RT Vol	0	30	0	100	0	5	0	75
Lane Flow Rate	318	34	142	273	23	153	91	85
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.607	0.056	0.282	0.481	0.048	0.3	0.18	0.151
Departure Headway (Hd)	6.986	6.018	7.159	6.353	7.58	7.042	7.121	6.372
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	599	506	570	474	512	505	563
Service Time	4.686	3.718	4.859	4.053	5.302	4.764	4.849	4.1
HCM Lane V/C Ratio	0.613	0.057	0.281	0.479	0.049	0.299	0.18	0.151
HCM Control Delay, s/veh	19.9	9.1	12.6	14.8	10.7	12.8	11.4	10.2
HCM Lane LOS	C	A	B	B	B	B	B	B
HCM 95th-tile Q	4	0.2	1.1	2.6	0.2	1.3	0.7	0.5

HCM 7th TWSC
13: Butteville Rd & Parr Rd

Woodburn WinCo
AM Peak Hour

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	140	350	40	60	150
Future Vol, veh/h	35	140	350	40	60	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	40	159	398	45	68	170
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	727	420	0	0	443	0
Stage 1	420	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	392	635	-	-	1122	-
Stage 1	665	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	366	635	-	-	1122	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	15.1	0		2.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	554	514	-	
HCM Lane V/C Ratio	-	-	0.359	0.061	-	
HCM Ctrl Dly (s/v)	-	-	15.1	8.4	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	1.6	0.2	-	

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Existing 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	695	410	0	910	395	0	0	0	475	0	315
Future Volume (vph)	0	695	410	0	910	395	0	0	0	475	0	315
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3228	1413		3260	1458				3131		1422
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3228	1413		3260	1458				3131		1422
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	732	432	0	958	416	0	0	0	500	0	332
RTOR Reduction (vph)	0	0	140	0	0	135	0	0	0	0	0	85
Lane Group Flow (vph)	0	732	292	0	958	281	0	0	0	500	0	247
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		67.6	67.6		67.6	67.6				23.4		23.4
Effective Green, g (s)		67.6	67.6		67.6	67.6				23.4		23.4
Actuated g/C Ratio		0.68	0.68		0.68	0.68				0.23		0.23
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2182	955		2203	985				732		332
v/s Ratio Prot		0.23			0.29					0.16		
v/s Ratio Perm			0.21			0.19						0.17
v/c Ratio		0.34	0.31		0.43	0.29				0.68		0.74
Uniform Delay, d1		6.8	6.6		7.4	6.5				34.9		35.5
Progression Factor		1.00	1.00		0.68	0.99				1.00		1.00
Incremental Delay, d2		0.4	0.8		0.5	0.6				2.6		8.7
Delay (s)		7.2	7.4		5.6	7.1				37.6		44.2
Level of Service		A	A		A	A				D		D
Approach Delay (s/veh)		7.3			6.1			0.0			40.2	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.9									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			100.0							9.0		
Intersection Capacity Utilization			56.1%									ICU Level of Service B
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Existing 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	695	410	0	910	395	0	0	0	475	0	315
Future Volume (veh/h)	0	695	410	0	910	395	0	0	0	475	0	315
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1709	1709	0	1723	1723				1709	0	1709
Adj Flow Rate, veh/h	0	732	0	0	958	0				500	0	332
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	0	2	2				3	0	3
Cap, veh/h	0	2096		0	2113					835	0	383
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	3333	1448	0	3359	1460				3158	0	1448
Grp Volume(v), veh/h	0	732	0	0	958	0				500	0	332
Grp Sat Flow(s),veh/h/ln	0	1624	1448	0	1637	1460				1579	0	1448
Q Serve(g_s), s	0.0	10.3	0.0	0.0	0.0	0.0				13.8	0.0	21.9
Cycle Q Clear(g_c), s	0.0	10.3	0.0	0.0	0.0	0.0				13.8	0.0	21.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2096		0	2113					835	0	383
V/C Ratio(X)	0.00	0.35		0.00	0.45					0.60	0.00	0.87
Avail Cap(c_a), veh/h	0	2096		0	2113					1121	0	514
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	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.1	0.0	0.0	0.0	0.0				32.1	0.0	35.1
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.5	0.0				0.7	0.0	11.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.0	0.0	0.2	0.0				5.3	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	8.6	0.0	0.0	0.5	0.0				32.8	0.0	46.5
LnGrp LOS		A			A					C		D
Approach Vol, veh/h		732			958						832	
Approach Delay, s/veh		8.6			0.5						38.3	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		69.0		31.0		69.0						
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		12.3		23.9		2.0						
Green Ext Time (p_c), s		6.1		2.6		8.9						
Intersection Summary												
HCM 7th Control Delay, s/veh			15.3									
HCM 7th LOS			B									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Existing 2025
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	975	195	0	955	350	515
Future Volume (vph)	975	195	0	955	350	515
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.97		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.94	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3228	1403		3260	3008	1327
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3228	1403		3260	3008	1327
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1048	210	0	1027	376	554
RTOR Reduction (vph)	0	72	0	0	66	66
Lane Group Flow (vph)	1048	138	0	1027	565	233
Confl. Peds. (#/hr)		4				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	65.5	65.5		65.5	24.6	24.6
Effective Green, g (s)	65.5	65.5		65.5	24.6	24.6
Actuated g/C Ratio	0.66	0.66		0.66	0.25	0.25
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2114	918		2135	739	326
v/s Ratio Prot	c0.32			0.32	c0.19	0.18
v/s Ratio Perm		0.10				
v/c Ratio	0.50	0.15		0.48	0.77	0.72
Uniform Delay, d1	8.8	6.6		8.7	35.0	34.5
Progression Factor	0.99	1.54		0.67	1.00	1.00
Incremental Delay, d2	0.8	0.3		0.6	4.7	7.3
Delay (s)	9.5	10.5		6.5	39.8	41.8
Level of Service	A	B		A	D	D
Approach Delay (s/veh)	9.7			6.5	40.4	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			17.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			60.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Existing 2025
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	45	75	900	240	10	190	750	10	425	45	135	35
Future Volume (vph)	45	75	900	240	10	190	750	10	425	45	135	35
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	3260	1426		1630	3252		1564	1582	1454	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1630	3260	1426		1630	3252		1564	1582	1454	1646
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	79	947	253	11	200	789	11	447	47	142	37
RTOR Reduction (vph)	0	0	0	160	0	0	1	0	0	0	114	0
Lane Group Flow (vph)	0	126	947	93	0	211	799	0	246	248	28	37
Confl. Peds. (#/hr)				1		1			2		1	1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		11.9	36.6	36.6		16.1	40.8		20.0	20.0	20.0	9.8
Effective Green, g (s)		11.9	36.6	36.6		16.1	40.8		20.0	20.0	20.0	9.8
Actuated g/C Ratio		0.12	0.37	0.37		0.16	0.41		0.20	0.20	0.20	0.10
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		193	1193	521		262	1326		312	316	290	161
v/s Ratio Prot		0.08	c0.29			c0.13	0.25		c0.16	0.16		0.02
v/s Ratio Perm				0.06							0.02	
v/c Ratio		0.65	0.79	0.18		0.81	0.60		0.79	0.78	0.10	0.23
Uniform Delay, d1		42.1	28.3	21.5		40.4	23.2		38.0	38.0	32.6	41.6
Progression Factor		1.12	0.77	1.35		0.76	1.01		1.00	1.00	1.00	1.00
Incremental Delay, d2		6.7	4.8	0.6		14.9	1.8		12.4	12.0	0.1	0.7
Delay (s)		53.8	26.5	29.7		45.8	25.2		50.4	50.0	32.8	42.3
Level of Service		D	C	C		D	C		D	D	C	D
Approach Delay (s/veh)			29.7				29.5			46.3		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			33.7									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			72.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Existing 2025
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	➡	➡
Traffic Volume (vph)	45	75
Future Volume (vph)	45	75
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1556	
Flt Permitted	1.00	
Satd. Flow (perm)	1556	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	47	79
RTOR Reduction (vph)	65	0
Lane Group Flow (vph)	61	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.8	
Effective Green, g (s)	9.8	
Actuated g/C Ratio	0.10	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	152	
v/s Ratio Prot	c0.04	
v/s Ratio Perm		
v/c Ratio	0.40	
Uniform Delay, d1	42.3	
Progression Factor	1.00	
Incremental Delay, d2	1.7	
Delay (s)	44.1	
Level of Service	D	
Approach Delay (s/veh)	43.7	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Existing 2025
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	75	955	35	1	10	890	55	20	30	5	60
Future Volume (vph)	15	75	955	35	1	10	890	55	20	30	5	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.98		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1630	3240			1630	3227		1646	1691		1646
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1630	3240			1630	3227		1646	1691		1646
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	80	1016	37	1	11	947	59	21	32	5	64
RTOR Reduction (vph)	0	0	1	0	0	0	3	0	0	5	0	0
Lane Group Flow (vph)	0	96	1052	0	0	12	1003	0	21	32	0	64
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		9.8	67.8			1.6	59.6		3.3	6.0		8.1
Effective Green, g (s)		9.8	67.8			1.6	59.6		3.3	6.0		8.1
Actuated g/C Ratio		0.10	0.68			0.02	0.60		0.03	0.06		0.08
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		159	2196			26	1923		54	101		133
v/s Ratio Prot		c0.06	0.32			0.01	c0.31		0.01	0.02		c0.04
v/s Ratio Perm												
v/c Ratio		0.60	0.48			0.46	0.52		0.39	0.32		0.48
Uniform Delay, d1		43.2	7.7			48.8	11.8		47.4	45.0		43.9
Progression Factor		0.55	1.96			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		4.5	0.5			12.4	1.0		4.6	1.8		2.7
Delay (s)		28.3	15.6			61.2	12.9		52.0	46.9		46.7
Level of Service		C	B			E	B		D	D		D
Approach Delay (s/veh)			16.6				13.4			48.7		
Approach LOS			B				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			55.3%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Existing 2025
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	➡	➡
Traffic Volume (vph)	30	60
Future Volume (vph)	30	60
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	1542	
Flt Permitted	1.00	
Satd. Flow (perm)	1542	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	32	64
RTOR Reduction (vph)	57	0
Lane Group Flow (vph)	39	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	10.8	
Effective Green, g (s)	10.8	
Actuated g/C Ratio	0.11	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	166	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.23	
Uniform Delay, d1	40.8	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	41.5	
Level of Service	D	
Approach Delay (s/veh)	43.6	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Existing 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	560	290	85	590	85	230	110	90	80	210	120
Future Volume (vph)	85	560	290	85	590	85	230	110	90	80	210	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1699	1444	1630	1716	1458	1646	1733	1446	1646	1733	1473
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1699	1444	1630	1716	1458	1646	1733	1446	1646	1733	1473
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	87	571	296	87	602	87	235	112	92	82	214	122
RTOR Reduction (vph)	0	0	133	0	0	39	0	0	62	0	0	89
Lane Group Flow (vph)	87	571	163	87	602	48	235	112	30	82	214	33
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	35.3	49.8	5.5	35.3	42.9	14.5	24.1	29.6	7.6	17.2	22.7
Effective Green, g (s)	5.5	35.3	49.8	5.5	35.3	42.9	14.5	24.1	29.6	7.6	17.2	22.7
Actuated g/C Ratio	0.06	0.39	0.55	0.06	0.39	0.47	0.16	0.27	0.33	0.08	0.19	0.25
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	98	662	866	99	669	763	263	461	544	138	329	442
v/s Ratio Prot	c0.05	0.34	0.03	0.05	c0.35	0.01	c0.14	0.06	0.00	0.05	c0.12	0.00
v/s Ratio Perm			0.08			0.03			0.02			0.02
v/c Ratio	0.89	0.86	0.19	0.88	0.90	0.06	0.89	0.24	0.06	0.59	0.65	0.07
Uniform Delay, d1	42.2	25.4	10.2	42.2	25.9	12.9	37.2	26.0	20.9	40.0	33.9	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.8	11.2	0.1	53.0	15.0	0.0	29.4	0.3	0.0	6.7	4.6	0.1
Delay (s)	98.0	36.6	10.3	95.1	40.9	12.9	66.6	26.3	20.9	46.7	38.4	26.0
Level of Service	F	D	B	F	D	B	E	C	C	D	D	C
Approach Delay (s/veh)		34.0			43.8			46.7			36.4	
Approach LOS		C			D			D			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			39.5				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			90.5				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary 5: Settlemier St/Boones Ferry Rd & OR 214

Existing 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	560	290	85	590	85	230	110	90	80	210	120
Future Volume (veh/h)	85	560	290	85	590	85	230	110	90	80	210	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1723	1723	1723	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	87	571	296	87	602	87	235	112	92	82	214	122
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	108	659	796	108	664	654	271	454	473	103	278	334
Arrive On Green	0.07	0.39	0.39	0.07	0.39	0.39	0.16	0.26	0.26	0.06	0.16	0.16
Sat Flow, veh/h	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Grp Volume(v), veh/h	87	571	296	87	602	87	235	112	92	82	214	122
Grp Sat Flow(s),veh/h/ln	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Q Serve(g_s), s	4.2	24.8	9.3	4.2	26.5	2.8	11.1	4.1	3.7	3.9	9.5	5.6
Cycle Q Clear(g_c), s	4.2	24.8	9.3	4.2	26.5	2.8	11.1	4.1	3.7	3.9	9.5	5.6
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	108	659	796	108	664	654	271	454	473	103	278	334
V/C Ratio(X)	0.80	0.87	0.37	0.80	0.91	0.13	0.87	0.25	0.19	0.79	0.77	0.37
Avail Cap(c_a), veh/h	111	755	877	112	761	736	298	659	643	216	573	583
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	37.0	22.8	10.2	37.0	23.3	13.0	32.8	23.4	19.4	37.2	32.3	26.2
Incr Delay (d2), s/veh	32.7	9.4	0.3	32.0	13.4	0.1	21.4	0.3	0.2	12.6	4.5	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	11.0	2.7	2.6	12.5	0.9	5.9	1.7	1.2	1.9	4.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.7	32.2	10.5	69.0	36.7	13.1	54.1	23.7	19.6	49.8	36.8	26.9
LnGrp LOS	E	C	B	E	D	B	D	C	B	D	D	C
Approach Vol, veh/h	954			776			439			418		
Approach Delay, s/veh	28.9			37.7			39.1			36.4		
Approach LOS	C			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	35.5	17.7	17.4	9.8	35.5	9.5	25.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	35.5	14.5	26.5	5.5	35.5	10.5	30.5				
Max Q Clear Time (g_c+I1), s	6.2	26.8	13.1	11.5	6.2	28.5	5.9	6.1				
Green Ext Time (p_c), s	0.0	3.3	0.1	1.4	0.0	2.4	0.1	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	34.5											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved changes to right turn type.												

HCM 7th TWSC
6: Evergreen Rd & Stacy Allison Way

Existing 2025
PM Peak Hour

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	245	65	30	335	350	95
Future Vol, veh/h	245	65	30	335	350	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	261	69	32	356	372	101
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	843	423	473	0	-	0
Stage 1	423	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	335	633	1094	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	326	633	1094	-	-	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	21.12	0.69		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1094	-	447	633	-	-
HCM Lane V/C Ratio	0.029	-	0.583	0.109	-	-
HCM Ctrl Dly (s/v)	8.4	-	23.7	11.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	3.6	0.4	-	-

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	55	1	110	70	155	5	230	100	180	180	20
Future Vol, veh/h	10	55	1	110	70	155	5	230	100	180	180	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	58	1	116	74	163	5	242	105	189	189	21
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	11.2	17.1	18.4	13.5
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	15%	33%	100%	0%
Vol Thru, %	0%	70%	83%	21%	0%	90%
Vol Right, %	0%	30%	2%	46%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	330	66	335	180	200
LT Vol	5	0	10	110	180	0
Through Vol	0	230	55	70	0	180
RT Vol	0	100	1	155	0	20
Lane Flow Rate	5	347	69	353	189	211
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.01	0.608	0.136	0.582	0.372	0.379
Departure Headway (Hd)	7.134	6.406	7.067	6.047	7.063	6.48
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	505	566	509	599	513	558
Service Time	4.834	4.106	5.083	4.047	4.763	4.18
HCM Lane V/C Ratio	0.01	0.613	0.136	0.589	0.368	0.378
HCM Control Delay, s/veh	9.9	18.5	11.2	17.1	13.9	13.1
HCM Lane LOS	A	C	B	C	B	B
HCM 95th-tile Q	0	4.1	0.5	3.7	1.7	1.8

HCM 7th TWSC
8: Harvard Dr & Evergreen Rd

Existing 2025
PM Peak Hour

Intersection												
Int Delay, s/veh	11.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	150	35	110	120	1	5	60	105	10	160	70
Future Vol, veh/h	15	150	35	110	120	1	5	60	105	10	160	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	16	165	38	121	132	1	5	66	115	11	176	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	203	0	0	679	592	184	605	610	132
Stage 1	-	-	-	-	-	-	217	217	-	374	374	-
Stage 2	-	-	-	-	-	-	462	375	-	231	236	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1458	-	-	1374	-	-	367	421	861	411	410	920
Stage 1	-	-	-	-	-	-	788	725	-	649	619	-
Stage 2	-	-	-	-	-	-	582	619	-	774	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1458	-	-	1374	-	-	167	379	861	270	370	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	379	-	270	370	-
Stage 1	-	-	-	-	-	-	779	717	-	592	565	-
Stage 2	-	-	-	-	-	-	335	565	-	602	703	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.56			3.75			14.92			24.7		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	548	1458	-	-	1374	-	-	440
HCM Lane V/C Ratio	0.341	0.011	-	-	0.088	-	-	0.6
HCM Ctrl Dly (s/v)	14.9	7.5	-	-	7.9	-	-	24.7
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.5	0	-	-	0.3	-	-	3.8

HCM 7th Signalized Intersection Summary 9: Settlemier St & Hayes St

Existing 2025
PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	85	170	165	370	400	70
Future Volume (veh/h)	85	170	165	370	400	70
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	96	191	185	416	449	79
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	295	262	230	1067	535	94
Arrive On Green	0.18	0.18	0.14	0.61	0.37	0.37
Sat Flow, veh/h	1654	1471	1654	1736	1438	253
Grp Volume(v), veh/h	96	191	185	416	0	528
Grp Sat Flow(s),veh/h/ln	1654	1471	1654	1736	0	1691
Q Serve(g_s), s	2.2	5.3	4.7	5.3	0.0	12.4
Cycle Q Clear(g_c), s	2.2	5.3	4.7	5.3	0.0	12.4
Prop In Lane	1.00	1.00	1.00			0.15
Lane Grp Cap(c), veh/h	295	262	230	1067	0	629
V/C Ratio(X)	0.33	0.73	0.80	0.39	0.00	0.84
Avail Cap(c_a), veh/h	684	609	300	1317	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	16.9	18.2	4.2	0.0	12.5
Incr Delay (d2), s/veh	0.6	3.8	11.3	0.2	0.0	6.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.3	2.3	1.0	0.0	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.2	20.7	29.5	4.5	0.0	18.8
LnGrp LOS	B	C	C	A		B
Approach Vol, veh/h	287			601	528	
Approach Delay, s/veh	19.2			12.2	18.8	
Approach LOS	B			B	B	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	31.2		12.3		10.6	20.7
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	33.0		18.0		7.9	20.6
Max Q Clear Time (g_c+l1), s	7.3		7.3		6.7	14.4
Green Ext Time (p_c), s	2.7		0.7		0.1	1.8
Intersection Summary						
HCM 7th Control Delay, s/veh			16.1			
HCM 7th LOS			B			

HCM 7th TWSC
10: Evergreen Rd & Hopper St

Existing 2025
PM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	10	5	30	45	30
Future Vol, veh/h	25	10	5	30	45	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	550	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	32	13	6	39	58	39

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	130	78	97	0	-	0
Stage 1	78	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	867	986	1502	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	863	986	1502	-	-	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	973	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.37	1.06	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1502	-	869	-	-
HCM Lane V/C Ratio	0.004	-	0.052	-	-
HCM Ctrl Dly (s/v)	7.4	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	5	5	90	5	20	5	15	105	15	15	5
Future Vol, veh/h	5	5	5	90	5	20	5	15	105	15	15	5
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	6	6	6	107	6	24	6	18	125	18	18	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	8.3	7.5	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	33%	78%	43%
Vol Thru, %	12%	33%	4%	43%
Vol Right, %	84%	33%	17%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	15	115	35
LT Vol	5	5	90	15
Through Vol	15	5	5	15
RT Vol	105	5	20	5
Lane Flow Rate	149	18	137	42
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.021	0.164	0.051
Departure Headway (Hd)	3.825	4.33	4.312	4.418
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	943	830	821	815
Service Time	1.826	2.34	2.393	2.422
HCM Lane V/C Ratio	0.158	0.022	0.167	0.052
HCM Control Delay, s/veh	7.5	7.4	8.3	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.6	0.2

Intersection

Intersection Delay, s/veh 11

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	50	90	60	85	5	65	150	45	5	170	45
Future Vol, veh/h	45	50	90	60	85	5	65	150	45	5	170	45
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	48	54	97	65	91	5	70	161	48	5	183	48
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay, s/veh	10.4	10.4	12	10.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	30%	0%	100%	0%	100%	0%	3%	0%
Vol Thru, %	70%	0%	0%	36%	0%	94%	97%	0%
Vol Right, %	0%	100%	0%	64%	0%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	45	45	140	60	90	175	45
LT Vol	65	0	45	0	60	0	5	0
Through Vol	150	0	0	50	0	85	170	0
RT Vol	0	45	0	90	0	5	0	45
Lane Flow Rate	231	48	48	151	65	97	188	48
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.391	0.07	0.091	0.243	0.122	0.168	0.315	0.071
Departure Headway (Hd)	6.093	5.232	6.766	5.802	6.813	6.266	6.024	5.301
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	590	684	529	619	526	572	597	675
Service Time	3.831	2.97	4.509	3.545	4.559	4.012	3.764	3.04
HCM Lane V/C Ratio	0.392	0.07	0.091	0.244	0.124	0.17	0.315	0.071
HCM Control Delay, s/veh	12.7	8.4	10.2	10.4	10.5	10.3	11.5	8.4
HCM Lane LOS	B	A	B	B	B	B	B	A
HCM 95th-tile Q	1.8	0.2	0.3	0.9	0.4	0.6	1.3	0.2

HCM 7th TWSC
13: Butteville Rd & Parr Rd

Existing 2025
PM Peak Hour

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	50	160	55	85	235
Future Vol, veh/h	55	50	160	55	85	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	1	1	3	3	1	1
Mvmt Flow	65	60	190	65	101	280

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	705	223	0
Stage 1	223	-	-
Stage 2	482	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	404	819	-
Stage 1	816	-	-
Stage 2	623	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	367	819	-
Mov Cap-2 Maneuver	367	-	-
Stage 1	816	-	-
Stage 2	566	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.63	0	2.12
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	498	478
HCM Lane V/C Ratio	-	-	0.251	0.077
HCM Ctrl Dly (s/v)	-	-	14.6	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1	0.2

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Baseline 2026
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	370	245	0	445	460	0	0	0	310	0	205
Future Volume (vph)	0	370	245	0	445	460	0	0	0	310	0	205
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3107	1361		3137	1403				2906		1340
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3107	1361		3137	1403				2906		1340
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	398	263	0	478	495	0	0	0	333	0	220
RTOR Reduction (vph)	0	0	68	0	0	128	0	0	0	0	0	183
Lane Group Flow (vph)	0	398	195	0	478	367	0	0	0	333	0	37
Confl. Peds. (#/hr)			2									
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	0%	0%	0%	11%	11%	11%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		74.1	74.1		74.1	74.1				16.9		16.9
Effective Green, g (s)		74.1	74.1		74.1	74.1				16.9		16.9
Actuated g/C Ratio		0.74	0.74		0.74	0.74				0.17		0.17
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2302	1008		2324	1039				491		226
v/s Ratio Prot		0.13			0.15					c0.11		
v/s Ratio Perm			0.14			c0.26						0.03
v/c Ratio		0.17	0.19		0.21	0.35				0.68		0.16
Uniform Delay, d1		3.8	3.9		4.0	4.5				39.0		35.5
Progression Factor		1.00	1.00		0.92	1.88				1.00		1.00
Incremental Delay, d2		0.2	0.4		0.2	0.9				3.7		0.3
Delay (s)		4.0	4.3		3.8	9.4				42.7		35.9
Level of Service		A	A		A	A				D		D
Approach Delay (s/veh)		4.1			6.7			0.0			40.0	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.3									B
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			100.0							9.0		
Intersection Capacity Utilization			34.7%							A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Baseline 2026
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	370	245	0	445	460	0	0	0	310	0	205
Future Volume (veh/h)	0	370	245	0	445	460	0	0	0	310	0	205
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1654	1654	0	1668	1668				1600	0	1600
Adj Flow Rate, veh/h	0	398	0	0	478	0				333	0	220
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	7	7	0	6	6				11	0	11
Cap, veh/h	0	2248		0	2266					576	0	264
Arrive On Green	0.00	0.72	0.00	0.00	1.00	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	3226	1402	0	3253	1414				2956	0	1356
Grp Volume(v), veh/h	0	398	0	0	478	0				333	0	220
Grp Sat Flow(s),veh/h/ln	0	1572	1402	0	1585	1414				1478	0	1356
Q Serve(g_s), s	0.0	4.1	0.0	0.0	0.0	0.0				10.2	0.0	15.6
Cycle Q Clear(g_c), s	0.0	4.1	0.0	0.0	0.0	0.0				10.2	0.0	15.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2248		0	2266					576	0	264
V/C Ratio(X)	0.00	0.18		0.00	0.21					0.58	0.00	0.83
Avail Cap(c_a), veh/h	0	2248		0	2266					1049	0	481
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	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.6	0.0	0.0	0.0	0.0				36.5	0.0	38.7
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				0.9	0.0	6.7
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	1.2	0.0	0.0	0.1	0.0				3.7	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	4.8	0.0	0.0	0.2	0.0				37.4	0.0	45.4
LnGrp LOS		A			A					D		D
Approach Vol, veh/h		398			478						553	
Approach Delay, s/veh		4.8			0.2						40.6	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		76.0		24.0		76.0						
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		6.1		17.6		2.0						
Green Ext Time (p_c), s		3.0		1.9		3.7						

Intersection Summary

HCM 7th Control Delay, s/veh 17.1
HCM 7th LOS B

Notes

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

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Baseline 2026
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	480	205	0	645	270	555
Future Volume (vph)	480	205	0	645	270	555
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.98		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92	0.85
Flt Protected	1.00	1.00		1.00	0.98	1.00
Satd. Flow (prot)	3079	1344		3137	2852	1277
Flt Permitted	1.00	1.00		1.00	0.98	1.00
Satd. Flow (perm)	3079	1344		3137	2852	1277
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	505	216	0	679	284	584
RTOR Reduction (vph)	0	57	0	0	239	243
Lane Group Flow (vph)	505	159	0	679	337	49
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	8%	8%	6%	6%	6%	6%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	73.4	73.4		73.4	16.7	16.7
Effective Green, g (s)	73.4	73.4		73.4	16.7	16.7
Actuated g/C Ratio	0.73	0.73		0.73	0.17	0.17
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2259	986		2302	476	213
v/s Ratio Prot	0.16			c0.22	c0.12	0.04
v/s Ratio Perm		0.12				
v/c Ratio	0.22	0.16		0.29	0.71	0.23
Uniform Delay, d1	4.2	4.0		4.5	39.3	36.1
Progression Factor	0.95	1.95		0.64	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.2	4.8	0.6
Delay (s)	4.3	8.2		3.1	44.1	36.6
Level of Service	A	A		A	D	D
Approach Delay (s/veh)	5.4			3.1	41.6	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			18.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.37			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			53.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Baseline 2026
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	50	50	705	160	5	110	780	20	605	25	140	15
Future Volume (vph)	50	50	705	160	5	110	780	20	605	25	140	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3137	1368		1572	3125		1548	1558	1437	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1614	3137	1368		1572	3125		1548	1558	1437	1646
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	54	758	172	5	118	839	22	651	27	151	16
RTOR Reduction (vph)	0	0	0	111	0	0	2	0	0	0	109	0
Lane Group Flow (vph)	0	108	758	61	0	123	859	0	339	339	42	16
Confl. Peds. (#/hr)				2					5		2	2
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	6%	6%	6%	2%	2%	2%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		11.4	35.3	35.3		11.9	35.8		27.7	27.7	27.7	7.6
Effective Green, g (s)		11.4	35.3	35.3		11.9	35.8		27.7	27.7	27.7	7.6
Actuated g/C Ratio		0.11	0.35	0.35		0.12	0.36		0.28	0.28	0.28	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		183	1107	482		187	1118		428	431	398	125
v/s Ratio Prot		0.07	0.24			c0.08	c0.27		c0.22	0.22		0.01
v/s Ratio Perm				0.04							0.03	
v/c Ratio		0.59	0.68	0.13		0.66	0.77		0.79	0.79	0.11	0.13
Uniform Delay, d1		42.1	27.6	21.9		42.1	28.4		33.5	33.4	26.9	43.1
Progression Factor		1.09	0.70	0.33		0.81	0.99		1.00	1.00	1.00	1.00
Incremental Delay, d2		4.8	3.3	0.5		7.7	4.9		9.7	9.2	0.1	0.5
Delay (s)		50.6	22.6	7.7		41.8	33.1		43.2	42.6	27.0	43.6
Level of Service		D	C	A		D	C		D	D	C	D
Approach Delay (s/veh)			23.0				34.2			40.0		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			32.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			66.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Baseline 2026
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗➡️	
Traffic Volume (vph)	20	30
Future Volume (vph)	20	30
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1563	
Flt Permitted	1.00	
Satd. Flow (perm)	1563	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	32
RTOR Reduction (vph)	30	0
Lane Group Flow (vph)	24	0
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	7.6	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	118	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.21	
Uniform Delay, d1	43.4	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	44.2	
Level of Service	D	
Approach Delay (s/veh)	44.1	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Baseline 2026
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	10	15	710	5	1	75	730	15	100	10	80	10
Future Volume (vph)	10	15	710	5	1	75	730	15	100	10	80	10
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	1.00		1.00	0.87		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1605	3133			1555	3096		1646	1471		1630
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1605	3133			1555	3096		1646	1471		1630
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	16	747	5	1	79	768	16	105	11	84	11
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	70	0	0
Lane Group Flow (vph)	0	27	752	0	0	80	783	0	105	25	0	11
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	7%	7%	7%	1%	1%	1%	2%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		4.9	56.0			9.2	60.3		10.2	16.8		1.5
Effective Green, g (s)		4.9	56.0			9.2	60.3		10.2	16.8		1.5
Actuated g/C Ratio		0.05	0.56			0.09	0.60		0.10	0.17		0.02
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		78	1754			143	1866		167	247		24
v/s Ratio Prot		0.02	0.24			c0.05	c0.25		c0.06	c0.02		0.01
v/s Ratio Perm												
v/c Ratio		0.35	0.43			0.56	0.42		0.63	0.10		0.46
Uniform Delay, d1		46.0	12.7			43.5	10.6		43.1	35.2		48.8
Progression Factor		0.44	1.87			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		2.2	0.6			4.7	0.7		7.2	0.2		13.2
Delay (s)		22.5	24.5			48.1	11.2		50.3	35.4		62.1
Level of Service		C	C			D	B		D	D		E
Approach Delay (s/veh)			24.4				14.7			43.2		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			22.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			49.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Baseline 2026
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚦	
Traffic Volume (vph)	5	50
Future Volume (vph)	5	50
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.98	
Flpb, ped/bikes	1.00	
Frt	0.86	
Flt Protected	1.00	
Satd. Flow (prot)	1456	
Flt Permitted	1.00	
Satd. Flow (perm)	1456	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	5	53
RTOR Reduction (vph)	49	0
Lane Group Flow (vph)	9	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	2%	2%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.1	
Effective Green, g (s)	8.1	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	117	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.08	
Uniform Delay, d1	42.5	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	42.8	
Level of Service	D	
Approach Delay (s/veh)	45.9	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Baseline 2026
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	445	135	40	390	40	310	115	85	60	85	105
Future Volume (vph)	65	445	135	40	390	40	310	115	85	60	85	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	69	473	144	43	415	43	330	122	90	64	90	112
RTOR Reduction (vph)	0	0	57	0	0	25	0	0	59	0	0	90
Lane Group Flow (vph)	69	473	87	43	415	18	330	122	31	64	90	22
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	7%	7%	7%	12%	12%	12%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	29.6	50.2	4.2	28.3	35.0	20.6	24.6	28.8	6.7	10.7	16.2
Effective Green, g (s)	5.5	29.6	50.2	4.2	28.3	35.0	20.6	24.6	28.8	6.7	10.7	16.2
Actuated g/C Ratio	0.07	0.36	0.60	0.05	0.34	0.42	0.25	0.30	0.35	0.08	0.13	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	102	582	914	75	531	631	404	507	573	131	220	363
v/s Ratio Prot	c0.04	c0.29	0.02	0.03	0.27	0.00	c0.20	0.07	0.00	0.04	c0.05	0.00
v/s Ratio Perm			0.04			0.01			0.02			0.01
v/c Ratio	0.68	0.81	0.10	0.57	0.78	0.03	0.82	0.24	0.05	0.49	0.41	0.06
Uniform Delay, d1	37.9	24.2	6.9	38.6	24.6	14.1	29.5	22.2	18.1	36.6	33.3	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.3	8.5	0.0	10.2	7.4	0.0	12.1	0.2	0.0	2.9	1.2	0.1
Delay (s)	54.3	32.7	7.0	48.7	32.0	14.1	41.5	22.4	18.1	39.4	34.5	27.3
Level of Service	D	C	A	D	C	B	D	C	B	D	C	C
Approach Delay (s/veh)		29.5			31.9			33.3			32.7	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			31.6				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			83.1				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			66.2%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

5: Settlemier St/Boones Ferry Rd & OR 214

Baseline 2026
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	445	135	40	390	40	310	115	85	60	85	105
Future Volume (veh/h)	65	445	135	40	390	40	310	115	85	60	85	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1654	1654	1654	1586	1586	1586	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	69	473	144	43	415	43	330	122	90	64	90	112
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	12	12	12	2	2	2	2	2	2
Cap, veh/h	86	557	797	63	513	506	381	502	476	87	193	244
Arrive On Green	0.05	0.34	0.34	0.04	0.32	0.32	0.23	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Grp Volume(v), veh/h	69	473	144	43	415	43	330	122	90	64	90	112
Grp Sat Flow(s),veh/h/ln	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Q Serve(g_s), s	2.8	17.2	3.2	1.8	15.5	1.3	12.5	3.5	2.9	2.5	3.2	4.5
Cycle Q Clear(g_c), s	2.8	17.2	3.2	1.8	15.5	1.3	12.5	3.5	2.9	2.5	3.2	4.5
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	86	557	797	63	513	506	381	502	476	87	193	244
V/C Ratio(X)	0.80	0.85	0.18	0.68	0.81	0.09	0.87	0.24	0.19	0.74	0.47	0.46
Avail Cap(c_a), veh/h	134	753	964	128	722	683	519	997	887	241	705	677
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	30.3	20.0	6.7	30.6	20.1	13.0	23.9	17.5	15.4	30.2	27.0	24.4
Incr Delay (d2), s/veh	16.7	6.9	0.1	12.4	4.7	0.1	11.1	0.2	0.2	11.6	1.8	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.1	0.8	0.9	5.9	0.4	5.7	1.3	0.9	1.2	1.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.0	26.9	6.8	43.0	24.8	13.1	35.1	17.8	15.6	41.8	28.7	25.7
LnGrp LOS	D	C	A	D	C	B	D	B	B	D	C	C
Approach Vol, veh/h	686			501			542			266		
Approach Delay, s/veh	24.7			25.3			27.9			30.6		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	26.3	19.5	11.8	8.1	25.4	7.9	23.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	29.5	20.5	26.5	5.5	29.5	9.5	37.5				
Max Q Clear Time (g_c+I1), s	3.8	19.2	14.5	6.5	4.8	17.5	4.5	5.5				
Green Ext Time (p_c), s	0.0	2.6	0.5	0.8	0.0	2.2	0.0	1.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	26.5											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved changes to right turn type.												

HCM 7th TWSC
6: Evergreen Rd & Stacy Allison Way

Baseline 2026
AM Peak Hour

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	195	20	35	700	290	75
Future Vol, veh/h	195	20	35	700	290	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	1	1	4	4
Mvmt Flow	214	22	38	769	319	82

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1206	360	401	0	-	0
Stage 1	360	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.11	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.209	-	-	-
Pot Cap-1 Maneuver	~ 198	673	1163	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 192	673	1163	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	35.6	0.39	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1163	-	313	673	-	-
HCM Lane V/C Ratio	0.033	-	0.685	0.033	-	-
HCM Ctrl Dly (s/v)	8.2	-	38.2	10.5	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.7	0.1	-	-

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

Intersection	
Intersection Delay, s/veh	79.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	20	5	65	40	145	5	545	80	75	210	10
Future Vol, veh/h	45	20	5	65	40	145	5	545	80	75	210	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	4	4	4
Mvmt Flow	51	23	6	74	45	165	6	619	91	85	239	11
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	12.8	17.1	142.3	14.9
HCM LOS	B	C	F	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	64%	26%	100%	0%
Vol Thru, %	0%	87%	29%	16%	0%	95%
Vol Right, %	0%	13%	7%	58%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	625	70	250	75	220
LT Vol	5	0	45	65	75	0
Through Vol	0	545	20	40	0	210
RT Vol	0	80	5	145	0	10
Lane Flow Rate	6	710	80	284	85	250
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.011	1.24	0.166	0.51	0.172	0.467
Departure Headway (Hd)	6.887	6.285	8.197	7.008	7.673	7.126
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	575	441	517	470	510
Service Time	4.644	4.042	6.197	5.008	5.373	4.826
HCM Lane V/C Ratio	0.012	1.235	0.181	0.549	0.181	0.49
HCM Control Delay, s/veh	9.7	143.4	12.8	17.1	12	15.9
HCM Lane LOS	A	F	B	C	B	C
HCM 95th-tile Q	0	26.9	0.6	2.9	0.6	2.5

HCM 7th TWSC
8: Harvard Dr & Evergreen Rd

Baseline 2026
AM Peak Hour

Intersection												
Int Delay, s/veh	9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	170	20	80	75	5	5	60	245	5	70	15
Future Vol, veh/h	10	170	20	80	75	5	5	60	245	5	70	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	5	5	5	1	1	1	4	4	4
Mvmt Flow	11	193	23	91	85	6	6	68	278	6	80	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	91	0	0	216	0	0	534	500	205	520	509	88
Stage 1	-	-	-	-	-	-	227	227	-	270	270	-
Stage 2	-	-	-	-	-	-	307	273	-	250	239	-
Critical Hdwy	4.13	-	-	4.15	-	-	7.11	6.51	6.21	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.509	4.009	3.309	3.536	4.036	3.336
Pot Cap-1 Maneuver	1498	-	-	1336	-	-	458	474	839	464	465	965
Stage 1	-	-	-	-	-	-	778	718	-	731	682	-
Stage 2	-	-	-	-	-	-	705	686	-	750	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1498	-	-	1336	-	-	344	439	839	245	430	965
Mov Cap-2 Maneuver	-	-	-	-	-	-	344	439	-	245	430	-
Stage 1	-	-	-	-	-	-	772	712	-	682	636	-
Stage 2	-	-	-	-	-	-	565	639	-	449	699	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.37			3.95			15.27			15.26		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	699	1498	-	-	1336	-	-	453
HCM Lane V/C Ratio	0.504	0.008	-	-	0.068	-	-	0.226
HCM Ctrl Dly (s/v)	15.3	7.4	-	-	7.9	-	-	15.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2.9	0	-	-	0.2	-	-	0.9

HCM 7th Signalized Intersection Summary
9: Settlemier St & Hayes St

Baseline 2026
AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	100	150	535	335	50
Future Volume (veh/h)	145	100	150	535	335	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1709	1709	1736	1736
Adj Flow Rate, veh/h	153	105	158	563	353	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	1	1
Cap, veh/h	247	220	199	993	479	72
Arrive On Green	0.15	0.15	0.12	0.58	0.32	0.32
Sat Flow, veh/h	1641	1460	1628	1709	1475	221
Grp Volume(v), veh/h	153	105	158	563	0	406
Grp Sat Flow(s),veh/h/ln	1641	1460	1628	1709	0	1696
Q Serve(g_s), s	2.9	2.2	3.2	6.9	0.0	7.1
Cycle Q Clear(g_c), s	2.9	2.2	3.2	6.9	0.0	7.1
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	247	220	199	993	0	551
V/C Ratio(X)	0.62	0.48	0.79	0.57	0.00	0.74
Avail Cap(c_a), veh/h	880	783	461	1681	0	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	13.0	14.3	4.4	0.0	10.1
Incr Delay (d2), s/veh	2.5	1.6	7.0	0.5	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.9	1.3	1.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.9	14.6	21.4	4.9	0.0	12.0
LnGrp LOS	B	B	C	A		B
Approach Vol, veh/h	258			721	406	
Approach Delay, s/veh	15.4			8.5	12.0	
Approach LOS	B			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	24.0			9.6	8.6	15.4
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0			18.0	9.5	19.0
Max Q Clear Time (g_c+l1), s	8.9			4.9	5.2	9.1
Green Ext Time (p_c), s	3.9			0.6	0.2	1.8
Intersection Summary						
HCM 7th Control Delay, s/veh			10.8			
HCM 7th LOS			B			

HCM 7th TWSC
10: Evergreen Rd & Hopper St

Baseline 2026
AM Peak Hour

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	10	5	115	80	65
Future Vol, veh/h	160	10	5	115	80	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	550	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	5	5
Mvmt Flow	182	11	6	131	91	74

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	270	128	165	0	-	0
Stage 1	128	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	722	925	1420	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	719	925	1420	-	-	-
Mov Cap-2 Maneuver	735	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	887	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.53	0.31	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1420	-	744	-	-
HCM Lane V/C Ratio	0.004	-	0.26	-	-
HCM Ctrl Dly (s/v)	7.5	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection												
Intersection Delay, s/veh	9.3											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	30	155	10	50	30	65	75	30	55	15
Future Vol, veh/h	10	10	30	155	10	50	30	65	75	30	55	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	11	34	176	11	57	34	74	85	34	63	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8	10	9.1	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	20%	72%	30%
Vol Thru, %	38%	20%	5%	55%
Vol Right, %	44%	60%	23%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	50	215	100
LT Vol	30	10	155	30
Through Vol	65	10	10	55
RT Vol	75	30	50	15
Lane Flow Rate	193	57	244	114
Geometry Grp	1	1	1	1
Degree of Util (X)	0.244	0.073	0.319	0.153
Departure Headway (Hd)	4.549	4.62	4.704	4.838
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	786	770	762	737
Service Time	2.595	2.679	2.75	2.889
HCM Lane V/C Ratio	0.246	0.074	0.32	0.155
HCM Control Delay, s/veh	9.1	8	10	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.2	1.4	0.5

Intersection

Intersection Delay, s/veh 24.5

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	150	160	110	25	140	5	165	205	45	5	100	95
Future Vol, veh/h	150	160	110	25	140	5	165	205	45	5	100	95
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	1	1	1
Mvmt Flow	170	182	125	28	159	6	188	233	51	6	114	108
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay, s/veh	18.7	14.9	40	12.7
HCM LOS	C	B	E	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	0%	100%	0%	100%	0%	5%	0%
Vol Thru, %	55%	0%	0%	59%	0%	97%	95%	0%
Vol Right, %	0%	100%	0%	41%	0%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	370	45	150	270	25	145	105	95
LT Vol	165	0	150	0	25	0	5	0
Through Vol	205	0	0	160	0	140	100	0
RT Vol	0	45	0	110	0	5	0	95
Lane Flow Rate	420	51	170	307	28	165	119	108
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.876	0.093	0.377	0.609	0.067	0.367	0.262	0.215
Departure Headway (Hd)	7.497	6.552	7.953	7.147	8.552	8.01	7.905	7.158
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	546	452	503	418	448	453	500
Service Time	5.254	4.309	5.717	4.911	6.329	5.787	5.679	4.931
HCM Lane V/C Ratio	0.868	0.093	0.376	0.61	0.067	0.368	0.263	0.216
HCM Control Delay, s/veh	43.6	10	15.5	20.5	11.9	15.4	13.5	11.9
HCM Lane LOS	E	A	C	C	B	C	B	B
HCM 95th-tile Q	9.4	0.3	1.7	4	0.2	1.7	1	0.8

Intersection						
Int Delay, s/veh	7.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	230	350	50	125	150
Future Vol, veh/h	45	230	350	50	125	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	51	261	398	57	142	170
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	881	426	0	0	455	0
Stage 1	426	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	319	630	-	-	1111	-
Stage 1	661	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	274	630	-	-	1111	-
Mov Cap-2 Maneuver	274	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	21.84	0		3.96		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	520	818	-	
HCM Lane V/C Ratio	-	-	0.601	0.128	-	
HCM Ctrl Dly (s/v)	-	-	21.8	8.7	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	3.9	0.4	-	

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Projected 2026 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	695	470	0	895	465	0	0	0	710	0	370
Future Volume (vph)	0	695	470	0	895	465	0	0	0	710	0	370
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3228	1413		3260	1458				3131		1423
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3228	1413		3260	1458				3131		1423
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	732	495	0	942	489	0	0	0	747	0	389
RTOR Reduction (vph)	0	0	190	0	0	187	0	0	0	0	0	82
Lane Group Flow (vph)	0	732	305	0	942	302	0	0	0	747	0	307
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		61.7	61.7		61.7	61.7				29.3		29.3
Effective Green, g (s)		61.7	61.7		61.7	61.7				29.3		29.3
Actuated g/C Ratio		0.62	0.62		0.62	0.62				0.29		0.29
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		1991	871		2011	899				917		416
v/s Ratio Prot		0.23			0.29					0.24		
v/s Ratio Perm			0.22			0.21						0.22
v/c Ratio		0.37	0.35		0.47	0.34				0.81		0.74
Uniform Delay, d1		9.5	9.4		10.3	9.2				32.8		31.9
Progression Factor		1.00	1.00		0.66	0.15				1.00		1.00
Incremental Delay, d2		0.5	1.1		0.6	0.8				5.6		6.7
Delay (s)		10.0	10.5		7.5	2.2				38.5		38.6
Level of Service		B	B		A	A				D		D
Approach Delay (s/veh)		10.2			5.7			0.0			38.5	
Approach LOS		B			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.0									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			100.0							9.0		
Intersection Capacity Utilization			59.3%									ICU Level of Service B
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Projected 2026 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	695	470	0	895	465	0	0	0	710	0	370
Future Volume (veh/h)	0	695	470	0	895	465	0	0	0	710	0	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1709	1709	0	1723	1723				1709	0	1709
Adj Flow Rate, veh/h	0	732	0	0	942	0				747	0	389
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	0	2	2				3	0	3
Cap, veh/h	0	1964		0	1980					963	0	442
Arrive On Green	0.00	0.60	0.00	0.00	1.00	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3333	1448	0	3359	1460				3158	0	1448
Grp Volume(v), veh/h	0	732	0	0	942	0				747	0	389
Grp Sat Flow(s),veh/h/ln	0	1624	1448	0	1637	1460				1579	0	1448
Q Serve(g_s), s	0.0	11.5	0.0	0.0	0.0	0.0				21.5	0.0	25.5
Cycle Q Clear(g_c), s	0.0	11.5	0.0	0.0	0.0	0.0				21.5	0.0	25.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1964		0	1980					963	0	442
V/C Ratio(X)	0.00	0.37		0.00	0.48					0.78	0.00	0.88
Avail Cap(c_a), veh/h	0	1964		0	1980					1121	0	514
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	0.71	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.1	0.0	0.0	0.0	0.0				31.6	0.0	33.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.6	0.0				3.0	0.0	14.6
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	4.0	0.0	0.0	0.2	0.0				8.4	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	10.6	0.0	0.0	0.6	0.0				34.6	0.0	47.6
LnGrp LOS	B			A			C			D		
Approach Vol, veh/h	732			942						1136		
Approach Delay, s/veh	10.6			0.6						39.1		
Approach LOS	B			A						D		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	65.0			35.0			65.0					
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	13.5			27.5			2.0					
Green Ext Time (p_c), s	6.0			3.0			8.7					
Intersection Summary												
HCM 7th Control Delay, s/veh	18.8											
HCM 7th LOS	B											
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Projected 2026 without Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	1205	215	0	995	365	650
Future Volume (vph)	1205	215	0	995	365	650
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.97		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.93	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3228	1403		3260	2981	1327
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3228	1403		3260	2981	1327
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1296	231	0	1070	392	699
RTOR Reduction (vph)	0	90	0	0	33	33
Lane Group Flow (vph)	1296	141	0	1070	709	316
Confl. Peds. (#/hr)		4				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	61.1	61.1		61.1	29.0	29.0
Effective Green, g (s)	61.1	61.1		61.1	29.0	29.0
Actuated g/C Ratio	0.61	0.61		0.61	0.29	0.29
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1972	857		1991	864	384
v/s Ratio Prot	c0.40			0.33	0.24	c0.24
v/s Ratio Perm		0.10				
v/c Ratio	0.66	0.16		0.54	0.82	0.82
Uniform Delay, d1	12.6	8.4		11.3	33.1	33.1
Progression Factor	1.07	1.73		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.4		1.0	6.3	13.4
Delay (s)	15.0	14.9		12.3	39.4	46.5
Level of Service	B	B		B	D	D
Approach Delay (s/veh)	15.0			12.3	41.7	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)		22.1		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.71				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		9.9
Intersection Capacity Utilization		73.5%		ICU Level of Service		D
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2026 without Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	45	75	1065	465	10	220	860	45	565	45	180	35
Future Volume (vph)	45	75	1065	465	10	220	860	45	565	45	180	35
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	3260	1425		1630	3232		1564	1579	1453	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1630	3260	1425		1630	3232		1564	1579	1453	1646
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	79	1121	489	11	232	905	47	595	47	189	37
RTOR Reduction (vph)	0	0	0	217	0	0	2	0	0	0	137	0
Lane Group Flow (vph)	0	126	1121	272	0	243	950	0	321	321	52	37
Confl. Peds. (#/hr)				1		1			2		1	1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		15.0	52.7	52.7		25.8	63.5		40.9	40.9	40.9	13.1
Effective Green, g (s)		15.0	52.7	52.7		25.8	63.5		40.9	40.9	40.9	13.1
Actuated g/C Ratio		0.10	0.35	0.35		0.17	0.42		0.27	0.27	0.27	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		163	1145	500		280	1368		426	430	396	143
v/s Ratio Prot		0.08	c0.34			c0.15	0.29		c0.21	0.20		0.02
v/s Ratio Perm				0.19							0.04	
v/c Ratio		0.77	0.98	0.54		0.87	0.69		0.75	0.75	0.13	0.26
Uniform Delay, d1		65.8	48.1	39.0		60.4	35.3		49.9	49.8	41.1	63.9
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		20.1	22.0	4.2		23.5	2.9		7.4	6.9	0.1	1.0
Delay (s)		85.9	70.1	43.2		83.9	38.2		57.3	56.7	41.3	64.9
Level of Service		F	E	D		F	D		E	E	D	E
Approach Delay (s/veh)			63.7				47.5			53.5		
Approach LOS			E				D			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			56.9									
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			150.0									
Intersection Capacity Utilization			81.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2026 without Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗	
Traffic Volume (vph)	45	75
Future Volume (vph)	45	75
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1555	
Flt Permitted	1.00	
Satd. Flow (perm)	1555	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	47	79
RTOR Reduction (vph)	46	0
Lane Group Flow (vph)	80	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	13.1	
Effective Green, g (s)	13.1	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	135	
v/s Ratio Prot	c0.05	
v/s Ratio Perm		
v/c Ratio	0.60	
Uniform Delay, d1	65.9	
Progression Factor	1.00	
Incremental Delay, d2	6.9	
Delay (s)	72.8	
Level of Service	E	
Approach Delay (s/veh)	71.0	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2026 without Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	75	1015	35	1	65	955	55	105	30	65	60
Future Volume (vph)	15	75	1015	35	1	65	955	55	105	30	65	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	0.99		1.00	0.90		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1630	3241			1630	3229		1646	1529		1646
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1630	3241			1630	3229		1646	1529		1646
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	80	1080	37	1	69	1016	59	112	32	69	64
RTOR Reduction (vph)	0	0	2	0	0	0	3	0	0	62	0	0
Lane Group Flow (vph)	0	96	1115	0	0	70	1072	0	112	39	0	64
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		9.6	56.1			8.5	55.0		11.9	10.8		8.1
Effective Green, g (s)		9.6	56.1			8.5	55.0		11.9	10.8		8.1
Actuated g/C Ratio		0.10	0.56			0.09	0.55		0.12	0.11		0.08
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		156	1818			138	1775		195	165		133
v/s Ratio Prot		c0.06	c0.34			0.04	0.33		c0.07	c0.03		0.04
v/s Ratio Perm												
v/c Ratio		0.62	0.61			0.51	0.60		0.57	0.24		0.48
Uniform Delay, d1		43.4	14.7			43.7	15.2		41.7	40.8		43.9
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		7.0	1.6			2.9	1.5		4.0	0.8		2.7
Delay (s)		50.5	16.2			46.7	16.7		45.7	41.6		46.7
Level of Service		D	B			D	B		D	D		D
Approach Delay (s/veh)			19.0				18.5			43.8		
Approach LOS			B				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			22.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			59.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2026 without Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗	
Traffic Volume (vph)	30	60
Future Volume (vph)	30	60
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	1539	
Flt Permitted	1.00	
Satd. Flow (perm)	1539	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	32	64
RTOR Reduction (vph)	60	0
Lane Group Flow (vph)	36	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.0	
Effective Green, g (s)	7.0	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	107	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.34	
Uniform Delay, d1	44.3	
Progression Factor	1.00	
Incremental Delay, d2	1.9	
Delay (s)	46.2	
Level of Service	D	
Approach Delay (s/veh)	46.4	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2026 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	590	355	105	630	120	280	140	100	95	235	135
Future Volume (vph)	110	590	355	105	630	120	280	140	100	95	235	135
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1699	1444	1630	1716	1458	1646	1733	1447	1646	1733	1473
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1699	1444	1630	1716	1458	1646	1733	1447	1646	1733	1473
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	112	602	362	107	643	122	286	143	102	97	240	138
RTOR Reduction (vph)	0	0	139	0	0	51	0	0	69	0	0	69
Lane Group Flow (vph)	112	602	223	107	643	71	286	143	33	97	240	69
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	33.6	49.1	6.5	34.6	44.7	15.5	23.2	29.7	10.1	17.8	23.3
Effective Green, g (s)	5.5	33.6	49.1	6.5	34.6	44.7	15.5	23.2	29.7	10.1	17.8	23.3
Actuated g/C Ratio	0.06	0.37	0.54	0.07	0.38	0.49	0.17	0.25	0.32	0.11	0.19	0.25
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	97	624	846	115	649	784	279	439	541	181	337	448
v/s Ratio Prot	c0.07	0.35	0.04	0.07	c0.37	0.01	c0.17	0.08	0.00	0.06	c0.14	0.01
v/s Ratio Perm			0.11			0.04			0.02			0.04
v/c Ratio	1.15	0.96	0.26	0.93	0.99	0.09	1.03	0.33	0.06	0.54	0.71	0.16
Uniform Delay, d1	43.0	28.3	11.4	42.2	28.2	12.5	38.0	27.7	21.2	38.4	34.4	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	139.0	27.2	0.2	62.2	32.9	0.1	60.5	0.4	0.0	3.0	6.9	0.2
Delay (s)	181.9	55.5	11.6	104.4	61.1	12.5	98.4	28.2	21.3	41.5	41.4	26.6
Level of Service	F	E	B	F	E	B	F	C	C	D	D	C
Approach Delay (s/veh)		53.9			59.6			64.7			37.1	
Approach LOS		D			E			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			54.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			91.4				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			87.9%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2026 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	590	355	105	630	120	280	140	100	95	235	135
Future Volume (veh/h)	110	590	355	105	630	120	280	140	100	95	235	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1723	1723	1723	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	112	602	362	107	643	122	286	143	102	97	240	138
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	101	644	799	120	669	674	289	474	501	122	299	345
Arrive On Green	0.06	0.38	0.38	0.07	0.39	0.39	0.17	0.27	0.27	0.07	0.17	0.17
Sat Flow, veh/h	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Grp Volume(v), veh/h	112	602	362	107	643	122	286	143	102	97	240	138
Grp Sat Flow(s),veh/h/ln	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Q Serve(g_s), s	5.5	30.1	13.3	5.7	32.3	4.4	15.3	5.8	4.4	5.1	11.8	7.0
Cycle Q Clear(g_c), s	5.5	30.1	13.3	5.7	32.3	4.4	15.3	5.8	4.4	5.1	11.8	7.0
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	101	644	799	120	669	674	289	474	501	122	299	345
V/C Ratio(X)	1.11	0.93	0.45	0.89	0.96	0.18	0.99	0.30	0.20	0.79	0.80	0.40
Avail Cap(c_a), veh/h	101	646	800	120	670	676	289	578	586	233	519	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	26.6	11.9	40.7	26.5	14.0	36.5	25.5	20.4	40.4	35.3	28.7
Incr Delay (d2), s/veh	122.1	20.9	0.4	49.8	25.5	0.1	49.9	0.4	0.2	11.0	5.0	0.8
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	5.6	15.3	4.0	3.9	17.2	1.4	10.0	2.4	1.5	2.4	5.3	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	163.7	47.5	12.3	90.6	52.0	14.1	86.4	25.9	20.6	51.4	40.3	29.4
LnGrp LOS	F	D	B	F	D	B	F	C	C	D	D	C
Approach Vol, veh/h	1076				872		531				475	
Approach Delay, s/veh	47.8				51.5		57.5				39.4	
Approach LOS	D				D		E				D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	37.9	20.0	19.8	10.0	38.9	11.0	28.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.5	33.5	15.5	26.5	5.5	34.5	12.5	29.5				
Max Q Clear Time (g_c+l1), s	7.7	32.1	17.3	13.8	7.5	34.3	7.1	7.8				
Green Ext Time (p_c), s	0.0	0.8	0.0	1.5	0.0	0.1	0.1	1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			49.3									
HCM 7th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved changes to right turn type.												

HCM 7th TWSC
6: Evergreen Rd & Stacy Allison Way

Projected 2026 without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	22.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	305	75	35	510	635	130
Future Vol, veh/h	305	75	35	510	635	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	324	80	37	543	676	138

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1362	745	814	0	-	0
Stage 1	745	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 164	416	818	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 157	416	818	-	-	-
Mov Cap-2 Maneuver	~ 295	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	100.33	0.62	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	818	-	295	416	-	-
HCM Lane V/C Ratio	0.046	-	1.101	0.192	-	-
HCM Ctrl Dly (s/v)	9.6	-	121.1	15.7	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	13.1	0.7	-	-

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

Intersection	
Intersection Delay, s/veh	60.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	55	1	120	70	155	5	390	105	185	445	40
Future Vol, veh/h	25	55	1	120	70	155	5	390	105	185	445	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	1	1	1
Mvmt Flow	26	58	1	126	74	163	5	411	111	195	468	42
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	14.9	29.6	86.3	61.7
HCM LOS	B	D	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	31%	35%	100%	0%
Vol Thru, %	0%	79%	68%	20%	0%	92%
Vol Right, %	0%	21%	1%	45%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	495	81	345	185	485
LT Vol	5	0	25	120	185	0
Through Vol	0	390	55	70	0	445
RT Vol	0	105	1	155	0	40
Lane Flow Rate	5	521	85	363	195	511
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.012	1.065	0.212	0.743	0.427	1.037
Departure Headway (Hd)	8.284	7.613	9.407	7.63	8.179	7.602
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	435	479	384	476	444	480
Service Time	5.984	5.313	7.407	5.63	5.879	5.302
HCM Lane V/C Ratio	0.011	1.088	0.221	0.763	0.439	1.065
HCM Control Delay, s/veh	11.1	87.1	14.9	29.6	16.8	78.8
HCM Lane LOS	B	F	B	D	C	F
HCM 95th-tile Q	0	15.8	0.8	6.2	2.1	14.7

HCM 7th TWSC
8: Harvard Dr & Evergreen Rd

Projected 2026 without Project
PM Peak Hour

Intersection												
Int Delay, s/veh	25.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	180	35	200	165	1	5	60	145	10	160	70
Future Vol, veh/h	20	180	35	200	165	1	5	60	145	10	160	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	22	198	38	220	181	1	5	66	159	11	176	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	236	0	0	970	883	217	896	902	182
Stage 1	-	-	-	-	-	-	261	261	-	621	621	-
Stage 2	-	-	-	-	-	-	709	622	-	275	280	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1399	-	-	1337	-	-	234	286	825	262	279	863
Stage 1	-	-	-	-	-	-	746	694	-	476	481	-
Stage 2	-	-	-	-	-	-	427	480	-	734	681	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1399	-	-	1337	-	-	47	235	825	132	229	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	235	-	132	229	-
Stage 1	-	-	-	-	-	-	734	683	-	398	402	-
Stage 2	-	-	-	-	-	-	183	401	-	526	670	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.65	4.49	26.62	79.14
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	1399	-	-	1337	-	-	281
HCM Lane V/C Ratio	0.59	0.016	-	-	0.164	-	-	0.94
HCM Ctrl Dly (s/v)	26.6	7.6	-	-	8.2	-	-	79.1
HCM Lane LOS	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.7	0	-	-	0.6	-	-	8.9

HCM 7th Signalized Intersection Summary 9: Settlemier St & Hayes St

Projected 2026 without Project
PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	180	170	445	515	75
Future Volume (veh/h)	90	180	170	445	515	75
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	101	202	191	500	579	84
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	299	266	213	1112	626	91
Arrive On Green	0.18	0.18	0.13	0.64	0.42	0.42
Sat Flow, veh/h	1654	1471	1654	1736	1483	215
Grp Volume(v), veh/h	101	202	191	500	0	663
Grp Sat Flow(s),veh/h/ln	1654	1471	1654	1736	0	1698
Q Serve(g_s), s	2.7	6.6	5.7	7.3	0.0	18.7
Cycle Q Clear(g_c), s	2.7	6.6	5.7	7.3	0.0	18.7
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	299	266	213	1112	0	717
V/C Ratio(X)	0.34	0.76	0.90	0.45	0.00	0.92
Avail Cap(c_a), veh/h	591	526	213	1137	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	19.6	21.6	4.6	0.0	13.8
Incr Delay (d2), s/veh	0.7	4.4	34.7	0.3	0.0	17.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.5	4.1	1.6	0.0	9.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.7	24.0	56.4	4.9	0.0	30.9
LnGrp LOS	B	C	E	A		C
Approach Vol, veh/h	303			691	663	
Approach Delay, s/veh	22.2			19.1	30.9	
Approach LOS	C			B	C	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	36.8			13.6	11.0	25.8
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0			18.0	6.5	22.0
Max Q Clear Time (g_c+l1), s	9.3			8.6	7.7	20.7
Green Ext Time (p_c), s	3.3			0.7	0.0	0.6
Intersection Summary						
HCM 7th Control Delay, s/veh			24.4			
HCM 7th LOS			C			

HCM 7th TWSC
10: Evergreen Rd & Hopper St

Projected 2026 without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	10	5	85	135	140
Future Vol, veh/h	95	10	5	85	135	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	550	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	108	11	6	97	153	159
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	341	233	313	0	-	0
Stage 1	233	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	657	809	1254	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	654	809	1254	-	-	-
Mov Cap-2 Maneuver	685	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	11.25	0.44		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1254	-	695	-	-	
HCM Lane V/C Ratio	0.005	-	0.172	-	-	
HCM Ctrl Dly (s/v)	7.9	-	11.3	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.6	-	-	

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	30	95	15	45	30	60	110	40	65	15
Future Vol, veh/h	10	10	30	95	15	45	30	60	110	40	65	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	11	34	108	17	51	34	68	125	45	74	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.1	9.2	9	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	20%	61%	33%
Vol Thru, %	30%	20%	10%	54%
Vol Right, %	55%	60%	29%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	200	50	155	120
LT Vol	30	10	95	40
Through Vol	60	10	15	65
RT Vol	110	30	45	15
Lane Flow Rate	227	57	176	136
Geometry Grp	1	1	1	1
Degree of Util (X)	0.274	0.073	0.233	0.179
Departure Headway (Hd)	4.34	4.644	4.753	4.723
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	825	767	752	757
Service Time	2.379	2.699	2.798	2.766
HCM Lane V/C Ratio	0.275	0.074	0.234	0.18
HCM Control Delay, s/veh	9	8.1	9.2	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.2	0.9	0.6

Intersection

Intersection Delay, s/veh 14.4

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	65	115	75	105	5	80	195	50	5	245	70
Future Vol, veh/h	60	65	115	75	105	5	80	195	50	5	245	70
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	65	70	124	81	113	5	86	210	54	5	263	75
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay, s/veh	12.7	12.1	16.7	14.7
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	29%	0%	100%	0%	100%	0%	2%	0%
Vol Thru, %	71%	0%	0%	36%	0%	95%	98%	0%
Vol Right, %	0%	100%	0%	64%	0%	5%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	275	50	60	180	75	110	250	70
LT Vol	80	0	60	0	75	0	5	0
Through Vol	195	0	0	65	0	105	245	0
RT Vol	0	50	0	115	0	5	0	70
Lane Flow Rate	296	54	65	194	81	118	269	75
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.563	0.09	0.136	0.357	0.173	0.236	0.502	0.125
Departure Headway (Hd)	6.857	5.995	7.615	6.646	7.728	7.183	6.719	5.995
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	529	601	471	542	465	500	538	598
Service Time	4.557	3.695	5.36	4.39	5.473	4.928	4.456	3.731
HCM Lane V/C Ratio	0.56	0.09	0.138	0.358	0.174	0.236	0.5	0.125
HCM Control Delay, s/veh	18	9.3	11.6	13.1	12.1	12.1	16.1	9.6
HCM Lane LOS	C	A	B	B	B	B	C	A
HCM 95th-tile Q	3.4	0.3	0.5	1.6	0.6	0.9	2.8	0.4

HCM 7th TWSC
13: Butteville Rd & Parr Rd

Projected 2026 without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	120	160	65	170	235
Future Vol, veh/h	60	120	160	65	170	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	3	3	1	1
Mvmt Flow	68	136	182	74	193	267
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	872	219	0	0	256	0
Stage 1	219	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	322	823	-	-	1315	-
Stage 1	820	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	267	823	-	-	1315	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	17.7	0		3.45		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	486	756	-	
HCM Lane V/C Ratio	-	-	0.421	0.147	-	
HCM Ctrl Dly (s/v)	-	-	17.7	8.2	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	2.1	0.5	-	

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Projected 2026 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	375	245	0	450	470	0	0	0	325	0	205
Future Volume (vph)	0	375	245	0	450	470	0	0	0	325	0	205
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3107	1361		3137	1403				2906		1340
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3107	1361		3137	1403				2906		1340
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	403	263	0	484	505	0	0	0	349	0	220
RTOR Reduction (vph)	0	0	69	0	0	133	0	0	0	0	0	182
Lane Group Flow (vph)	0	403	194	0	484	372	0	0	0	349	0	38
Confl. Peds. (#/hr)			2									
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	0%	0%	0%	11%	11%	11%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		73.6	73.6		73.6	73.6				17.4		17.4
Effective Green, g (s)		73.6	73.6		73.6	73.6				17.4		17.4
Actuated g/C Ratio		0.74	0.74		0.74	0.74				0.17		0.17
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2286	1001		2308	1032				505		233
v/s Ratio Prot		0.13			0.15					c0.12		
v/s Ratio Perm			0.14			c0.26						0.03
v/c Ratio		0.18	0.19		0.21	0.36				0.69		0.16
Uniform Delay, d1		4.0	4.1		4.1	4.7				38.8		35.1
Progression Factor		1.00	1.00		0.90	1.82				1.00		1.00
Incremental Delay, d2		0.2	0.4		0.2	0.9				4.1		0.3
Delay (s)		4.2	4.5		3.9	9.5				42.8		35.5
Level of Service		A	A		A	A				D		D
Approach Delay (s/veh)		4.3			6.8			0.0			40.0	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.5									B
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			100.0							9.0		
Intersection Capacity Utilization			35.3%							A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Projected 2026 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	375	245	0	450	470	0	0	0	325	0	205
Future Volume (veh/h)	0	375	245	0	450	470	0	0	0	325	0	205
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1654	1654	0	1668	1668				1600	0	1600
Adj Flow Rate, veh/h	0	403	0	0	484	0				349	0	220
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	7	7	0	6	6				11	0	11
Cap, veh/h	0	2246		0	2264					578	0	265
Arrive On Green	0.00	0.71	0.00	0.00	1.00	0.00				0.20	0.00	0.20
Sat Flow, veh/h	0	3226	1402	0	3253	1414				2956	0	1356
Grp Volume(v), veh/h	0	403	0	0	484	0				349	0	220
Grp Sat Flow(s),veh/h/ln	0	1572	1402	0	1585	1414				1478	0	1356
Q Serve(g_s), s	0.0	4.2	0.0	0.0	0.0	0.0				10.8	0.0	15.6
Cycle Q Clear(g_c), s	0.0	4.2	0.0	0.0	0.0	0.0				10.8	0.0	15.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2246		0	2264					578	0	265
V/C Ratio(X)	0.00	0.18		0.00	0.21					0.60	0.00	0.83
Avail Cap(c_a), veh/h	0	2246		0	2264					1049	0	481
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	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.7	0.0	0.0	0.0	0.0				36.7	0.0	38.6
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				1.0	0.0	6.6
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	1.2	0.0	0.0	0.1	0.0				3.9	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	4.9	0.0	0.0	0.2	0.0				37.7	0.0	45.2
LnGrp LOS		A			A					D		D
Approach Vol, veh/h		403			484						569	
Approach Delay, s/veh		4.9			0.2						40.6	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		75.9		24.1		75.9						
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		6.2		17.6		2.0						
Green Ext Time (p_c), s		3.0		2.0		3.7						
Intersection Summary												
HCM 7th Control Delay, s/veh			17.3									
HCM 7th LOS			B									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Projected 2026 with Project
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	500	205	0	660	270	570
Future Volume (vph)	500	205	0	660	270	570
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.98		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92	0.85
Flt Protected	1.00	1.00		1.00	0.98	1.00
Satd. Flow (prot)	3079	1344		3137	2850	1277
Flt Permitted	1.00	1.00		1.00	0.98	1.00
Satd. Flow (perm)	3079	1344		3137	2850	1277
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	526	216	0	695	284	600
RTOR Reduction (vph)	0	57	0	0	246	250
Lane Group Flow (vph)	526	159	0	695	338	50
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	8%	8%	6%	6%	6%	6%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	73.4	73.4		73.4	16.7	16.7
Effective Green, g (s)	73.4	73.4		73.4	16.7	16.7
Actuated g/C Ratio	0.73	0.73		0.73	0.17	0.17
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2259	986		2302	475	213
v/s Ratio Prot	0.17			c0.22	c0.12	0.04
v/s Ratio Perm		0.12				
v/c Ratio	0.23	0.16		0.30	0.71	0.24
Uniform Delay, d1	4.3	4.0		4.5	39.4	36.1
Progression Factor	0.95	1.90		0.64	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.2	5.0	0.6
Delay (s)	4.3	8.0		3.1	44.4	36.7
Level of Service	A	A		A	D	D
Approach Delay (s/veh)	5.4			3.1	41.8	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			18.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2026 with Project
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	50	50	705	195	5	140	780	20	630	25	165	15
Future Volume (vph)	50	50	705	195	5	140	780	20	630	25	165	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3137	1368		1571	3125		1548	1558	1437	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1614	3137	1368		1571	3125		1548	1558	1437	1646
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	54	758	210	5	151	839	22	677	27	177	16
RTOR Reduction (vph)	0	0	0	140	0	0	2	0	0	0	127	0
Lane Group Flow (vph)	0	108	758	70	0	156	859	0	352	352	50	16
Confl. Peds. (#/hr)				2					5		2	2
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	6%	6%	6%	2%	2%	2%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		11.4	33.4	33.4		13.0	35.0		28.5	28.5	28.5	7.6
Effective Green, g (s)		11.4	33.4	33.4		13.0	35.0		28.5	28.5	28.5	7.6
Actuated g/C Ratio		0.11	0.33	0.33		0.13	0.35		0.28	0.28	0.28	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		183	1047	456		204	1093		441	444	409	125
v/s Ratio Prot		0.07	0.24			c0.10	c0.27		c0.23	0.23		0.01
v/s Ratio Perm				0.05							0.04	
v/c Ratio		0.59	0.72	0.15		0.76	0.79		0.80	0.79	0.12	0.13
Uniform Delay, d1		42.1	29.3	23.4		42.0	29.1		33.1	33.0	26.5	43.1
Progression Factor		1.09	0.70	0.34		0.82	0.98		1.00	1.00	1.00	1.00
Incremental Delay, d2		4.8	4.1	0.7		14.9	5.4		9.7	9.4	0.1	0.5
Delay (s)		50.5	24.6	8.6		49.2	34.1		42.8	42.4	26.6	43.6
Level of Service		D	C	A		D	C		D	D	C	D
Approach Delay (s/veh)			24.1				36.4			39.4		
Approach LOS			C				D			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			33.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			67.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2026 with Project
AM Peak Hour



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	20	30
Future Volume (vph)	20	30
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1563	
Flt Permitted	1.00	
Satd. Flow (perm)	1563	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	32
RTOR Reduction (vph)	30	0
Lane Group Flow (vph)	24	0
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	7.6	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	118	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.21	
Uniform Delay, d1	43.4	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	44.2	
Level of Service	D	
Approach Delay (s/veh)	44.1	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2026 with Project
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	10	20	725	5	1	75	750	15	100	10	80	10
Future Volume (vph)	10	20	725	5	1	75	750	15	100	10	80	10
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	1.00		1.00	0.87		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1600	3133			1555	3097		1646	1471		1630
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1600	3133			1555	3097		1646	1471		1630
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	21	763	5	1	79	789	16	105	11	84	11
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	70	0	0
Lane Group Flow (vph)	0	32	768	0	0	80	804	0	105	25	0	11
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	7%	7%	7%	1%	1%	1%	2%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		5.2	55.9			9.2	59.9		10.2	16.9		1.5
Effective Green, g (s)		5.2	55.9			9.2	59.9		10.2	16.9		1.5
Actuated g/C Ratio		0.05	0.56			0.09	0.60		0.10	0.17		0.02
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		83	1751			143	1855		167	248		24
v/s Ratio Prot		0.02	0.24			c0.05	c0.26		c0.06	c0.02		0.01
v/s Ratio Perm												
v/c Ratio		0.39	0.44			0.56	0.43		0.63	0.10		0.46
Uniform Delay, d1		45.9	12.9			43.5	10.9		43.1	35.1		48.8
Progression Factor		0.47	1.81			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		2.3	0.6			4.7	0.7		7.2	0.2		13.2
Delay (s)		23.7	24.0			48.1	11.6		50.3	35.3		62.1
Level of Service		C	C			D	B		D	D		E
Approach Delay (s/veh)			24.0				14.9			43.2		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			22.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			50.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2026 with Project
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	🔴➡	
Traffic Volume (vph)	5	60
Future Volume (vph)	5	60
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.98	
Flpb, ped/bikes	1.00	
Frt	0.86	
Flt Protected	1.00	
Satd. Flow (prot)	1452	
Flt Permitted	1.00	
Satd. Flow (perm)	1452	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	5	63
RTOR Reduction (vph)	58	0
Lane Group Flow (vph)	10	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	2%	2%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.2	
Effective Green, g (s)	8.2	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	119	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.09	
Uniform Delay, d1	42.4	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	42.7	
Level of Service	D	
Approach Delay (s/veh)	45.4	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2026 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	460	135	50	405	40	310	120	90	60	95	110
Future Volume (vph)	70	460	135	50	405	40	310	120	90	60	95	110
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	489	144	53	431	43	330	128	96	64	101	117
RTOR Reduction (vph)	0	0	58	0	0	24	0	0	64	0	0	94
Lane Group Flow (vph)	74	489	86	53	431	19	330	128	32	64	101	23
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	7%	7%	7%	12%	12%	12%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	30.6	50.2	4.2	29.3	36.0	19.6	24.1	28.3	6.7	11.2	16.7
Effective Green, g (s)	5.5	30.6	50.2	4.2	29.3	36.0	19.6	24.1	28.3	6.7	11.2	16.7
Actuated g/C Ratio	0.07	0.37	0.60	0.05	0.35	0.43	0.23	0.29	0.34	0.08	0.13	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	102	598	909	74	547	643	382	494	561	130	229	369
v/s Ratio Prot	c0.05	c0.30	0.02	0.04	0.28	0.00	c0.20	0.07	0.00	0.04	c0.06	0.00
v/s Ratio Perm			0.04			0.01			0.02			0.01
v/c Ratio	0.73	0.82	0.10	0.72	0.79	0.03	0.86	0.26	0.06	0.49	0.44	0.06
Uniform Delay, d1	38.3	24.0	7.1	39.1	24.4	13.7	30.7	22.9	18.7	36.8	33.3	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.4	8.5	0.0	27.9	7.4	0.0	17.9	0.3	0.0	2.9	1.4	0.1
Delay (s)	60.7	32.5	7.1	67.0	31.8	13.7	48.7	23.2	18.7	39.7	34.7	27.2
Level of Service	E	C	A	E	C	B	D	C	B	D	C	C
Approach Delay (s/veh)		30.3			33.8			37.6			32.7	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			33.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			83.6				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			67.0%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2026 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	460	135	50	405	40	310	120	90	60	95	110
Future Volume (veh/h)	70	460	135	50	405	40	310	120	90	60	95	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1654	1654	1654	1586	1586	1586	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	74	489	144	53	431	43	330	128	96	64	101	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	12	12	12	2	2	2	2	2	2
Cap, veh/h	90	569	804	70	528	517	377	503	485	85	197	250
Arrive On Green	0.06	0.34	0.34	0.05	0.33	0.33	0.23	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Grp Volume(v), veh/h	74	489	144	53	431	43	330	128	96	64	101	117
Grp Sat Flow(s),veh/h/ln	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Q Serve(g_s), s	3.1	18.6	3.3	2.3	16.8	1.4	13.1	3.8	3.2	2.6	3.7	4.9
Cycle Q Clear(g_c), s	3.1	18.6	3.3	2.3	16.8	1.4	13.1	3.8	3.2	2.6	3.7	4.9
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	90	569	804	70	528	517	377	503	485	85	197	250
V/C Ratio(X)	0.82	0.86	0.18	0.75	0.82	0.08	0.88	0.25	0.20	0.75	0.51	0.47
Avail Cap(c_a), veh/h	128	746	954	123	715	675	473	929	838	230	675	655
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	31.6	20.7	6.9	31.9	20.7	13.2	25.1	18.3	15.9	31.7	28.2	25.3
Incr Delay (d2), s/veh	24.0	7.9	0.1	14.8	5.3	0.1	14.2	0.3	0.2	12.6	2.1	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	7.8	0.8	1.1	6.5	0.4	6.3	1.5	1.0	1.3	1.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	55.6	28.6	7.0	46.7	26.0	13.3	39.4	18.6	16.1	44.3	30.3	26.6
LnGrp LOS	E	C	A	D	C	B	D	B	B	D	C	C
Approach Vol, veh/h	707			527			554			282		
Approach Delay, s/veh	27.0			27.1			30.5			31.9		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	27.8	20.0	12.2	8.4	27.0	8.0	24.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	30.5	19.5	26.5	5.5	30.5	9.5	36.5				
Max Q Clear Time (g_c+I1), s	4.3	20.6	15.1	6.9	5.1	18.8	4.6	5.8				
Green Ext Time (p_c), s	0.0	2.6	0.4	0.8	0.0	2.2	0.0	1.1				

Intersection Summary

HCM 7th Control Delay, s/veh 28.6
HCM 7th LOS C

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

HCM 7th TWSC
6: Evergreen Rd & Stacy Allison Way

Projected 2026 with Project
AM Peak Hour

Intersection						
Int Delay, s/veh	10					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	235	20	35	705	300	130
Future Vol, veh/h	235	20	35	705	300	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	1	1	4	4
Mvmt Flow	258	22	38	775	330	143

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1253	401	473	0	-	0
Stage 1	401	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.11	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.209	-	-	-
Pot Cap-1 Maneuver	~ 186	638	1095	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 179	638	1095	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	410	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	54.54	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1095	-	304	638	-	-
HCM Lane V/C Ratio	0.035	-	0.849	0.034	-	-
HCM Ctrl Dly (s/v)	8.4	-	58.3	10.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	7.4	0.1	-	-

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

HCM 7th AWSC
7: Evergreen Rd & Hayes St

Projected 2026 with Project
AM Peak Hour

Intersection	
Intersection Delay, s/veh	103.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	20	5	100	40	145	5	555	105	75	225	10
Future Vol, veh/h	45	20	5	100	40	145	5	555	105	75	225	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	4	4	4
Mvmt Flow	51	23	6	114	45	165	6	631	119	85	256	11
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	13.5	20.5	189.2	16.6
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	64%	35%	100%	0%
Vol Thru, %	0%	84%	29%	14%	0%	96%
Vol Right, %	0%	16%	7%	51%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	660	70	285	75	235
LT Vol	5	0	45	100	75	0
Through Vol	0	555	20	40	0	225
RT Vol	0	105	5	145	0	10
Lane Flow Rate	6	750	80	324	85	267
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.011	1.354	0.171	0.593	0.177	0.515
Departure Headway (Hd)	7.125	6.5	8.722	7.336	8.05	7.503
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	501	563	414	496	448	483
Service Time	4.894	4.268	6.722	5.336	5.75	5.203
HCM Lane V/C Ratio	0.012	1.332	0.193	0.653	0.19	0.553
HCM Control Delay, s/veh	10	190.6	13.5	20.5	12.5	17.9
HCM Lane LOS	A	F	B	C	B	C
HCM 95th-tile Q	0	32.8	0.6	3.8	0.6	2.9

HCM 7th TWSC
8: Harvard Dr & Evergreen Rd

Projected 2026 with Project
AM Peak Hour

Intersection												
Int Delay, s/veh	16.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	285	25	80	120	5	15	60	345	5	70	15
Future Vol, veh/h	10	285	25	80	120	5	15	60	345	5	70	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	5	5	5	1	1	1	4	4	4
Mvmt Flow	11	324	28	91	136	6	17	68	392	6	80	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	142	0	0	352	0	0	719	685	338	702	696	139
Stage 1	-	-	-	-	-	-	361	361	-	321	321	-
Stage 2	-	-	-	-	-	-	358	324	-	381	375	-
Critical Hdwy	4.13	-	-	4.15	-	-	7.11	6.51	6.21	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.509	4.009	3.309	3.536	4.036	3.336
Pot Cap-1 Maneuver	1435	-	-	1190	-	-	345	372	706	350	363	904
Stage 1	-	-	-	-	-	-	660	628	-	687	648	-
Stage 2	-	-	-	-	-	-	662	652	-	638	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1435	-	-	1190	-	-	241	341	706	116	332	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	241	341	-	116	332	-
Stage 1	-	-	-	-	-	-	654	623	-	634	599	-
Stage 2	-	-	-	-	-	-	520	602	-	251	609	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.24			3.23			34.08			20.52		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	578	1435	-	-	1190	-	-	333
HCM Lane V/C Ratio	0.826	0.008	-	-	0.076	-	-	0.307
HCM Ctrl Dly (s/v)	34.1	7.5	-	-	8.3	-	-	20.5
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	8.5	0	-	-	0.2	-	-	1.3

HCM 7th Signalized Intersection Summary 9: Settlemier St & Hayes St

Projected 2026 with Project
AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	155	105	160	535	335	65
Future Volume (veh/h)	155	105	160	535	335	65
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1709	1709	1736	1736
Adj Flow Rate, veh/h	163	111	168	563	353	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	1	1
Cap, veh/h	258	229	212	1004	467	90
Arrive On Green	0.16	0.16	0.13	0.59	0.33	0.33
Sat Flow, veh/h	1641	1460	1628	1709	1415	273
Grp Volume(v), veh/h	163	111	168	563	0	421
Grp Sat Flow(s),veh/h/ln	1641	1460	1628	1709	0	1687
Q Serve(g_s), s	3.3	2.4	3.5	7.1	0.0	7.9
Cycle Q Clear(g_c), s	3.3	2.4	3.5	7.1	0.0	7.9
Prop In Lane	1.00	1.00	1.00			0.16
Lane Grp Cap(c), veh/h	258	229	212	1004	0	556
V/C Ratio(X)	0.63	0.48	0.79	0.56	0.00	0.76
Avail Cap(c_a), veh/h	838	745	439	1600	0	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	13.6	14.9	4.5	0.0	10.5
Incr Delay (d2), s/veh	2.6	1.6	6.6	0.5	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.1	1.4	1.1	0.0	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.5	15.1	21.5	5.0	0.0	12.7
LnGrp LOS	B	B	C	A		B
Approach Vol, veh/h	274			731	421	
Approach Delay, s/veh	15.9			8.8	12.7	
Approach LOS	B			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	25.2			10.0	9.1	16.1
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0			18.0	9.5	19.0
Max Q Clear Time (g_c+l1), s	9.1			5.3	5.5	9.9
Green Ext Time (p_c), s	3.9			0.7	0.2	1.8
Intersection Summary						
HCM 7th Control Delay, s/veh			11.3			
HCM 7th LOS			B			

HCM 7th TWSC
10: Evergreen Rd & Hopper St

Projected 2026 with Project
AM Peak Hour

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	10	5	150	105	65
Future Vol, veh/h	160	10	5	150	105	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	550	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	5	5
Mvmt Flow	182	11	6	170	119	74
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	338	156	193	0	-	0
Stage 1	156	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	660	892	1386	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	657	892	1386	-	-	-
Mov Cap-2 Maneuver	693	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Approach	EB		NB		SB	
HCM Ctrl Dly, s/v	12.06		0.25		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1386		-	702	-	-
HCM Lane V/C Ratio	0.004		-	0.275	-	-
HCM Ctrl Dly (s/v)	7.6		-	12.1	-	-
HCM Lane LOS	A		-	B	-	-
HCM 95th %tile Q(veh)	0		-	1.1	-	-

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	30	155	10	70	30	80	75	45	65	15
Future Vol, veh/h	10	10	30	155	10	70	30	80	75	45	65	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	11	34	176	11	80	34	91	85	51	74	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.3	10.5	9.5	9.2
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	20%	66%	36%
Vol Thru, %	43%	20%	4%	52%
Vol Right, %	41%	60%	30%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	185	50	235	125
LT Vol	30	10	155	45
Through Vol	80	10	10	65
RT Vol	75	30	70	15
Lane Flow Rate	210	57	267	142
Geometry Grp	1	1	1	1
Degree of Util (X)	0.273	0.075	0.354	0.196
Departure Headway (Hd)	4.672	4.782	4.775	4.959
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	763	741	748	719
Service Time	2.732	2.861	2.834	3.025
HCM Lane V/C Ratio	0.275	0.077	0.357	0.197
HCM Control Delay, s/veh	9.5	8.3	10.5	9.2
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	1.1	0.2	1.6	0.7

Intersection

Intersection Delay, s/veh 28.8

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	150	160	125	25	140	5	185	205	45	5	100	95
Future Vol, veh/h	150	160	125	25	140	5	185	205	45	5	100	95
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	1	1	1
Mvmt Flow	170	182	142	28	159	6	210	233	51	6	114	108
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay, s/veh	20.3	15.3	49.8	13
HCM LOS	C	C	E	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	47%	0%	100%	0%	100%	0%	5%	0%
Vol Thru, %	53%	0%	0%	56%	0%	97%	95%	0%
Vol Right, %	0%	100%	0%	44%	0%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	390	45	150	285	25	145	105	95
LT Vol	185	0	150	0	25	0	5	0
Through Vol	205	0	0	160	0	140	100	0
RT Vol	0	45	0	125	0	5	0	95
Lane Flow Rate	443	51	170	324	28	165	119	108
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.935	0.094	0.383	0.652	0.069	0.375	0.267	0.219
Departure Headway (Hd)	7.595	6.635	8.08	7.251	8.726	8.183	8.064	7.315
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	479	538	445	496	409	438	444	488
Service Time	5.36	4.399	5.852	5.022	6.51	5.967	5.848	5.098
HCM Lane V/C Ratio	0.925	0.095	0.382	0.653	0.068	0.377	0.268	0.221
HCM Control Delay, s/veh	54.4	10.1	15.8	22.7	12.2	15.8	13.8	12.2
HCM Lane LOS	F	B	C	C	B	C	B	B
HCM 95th-tile Q	11.1	0.3	1.8	4.6	0.2	1.7	1.1	0.8

HCM 7th TWSC
13: Butteville Rd & Parr Rd

Projected 2026 with Project
AM Peak Hour

Intersection						
Int Delay, s/veh	8.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	230	350	65	125	150
Future Vol, veh/h	55	230	350	65	125	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	63	261	398	74	142	170

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	889	435	0
Stage 1	435	-	-
Stage 2	455	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	315	624	-
Stage 1	655	-	-
Stage 2	641	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	270	624	-
Mov Cap-2 Maneuver	270	-	-
Stage 1	655	-	-
Stage 2	550	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	24.72	0	3.99
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	498	818
HCM Lane V/C Ratio	-	-	0.651	0.13
HCM Ctrl Dly (s/v)	-	-	24.7	8.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	4.6	0.4

HCM 7th TWSC
14: Stacy Allison Way & North Site Drwy

Projected 2026 with Project
AM Peak Hour

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	30	30	1	50	15
Future Vol, veh/h	1	30	30	1	50	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	33	33	1	54	16
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	158	33	0	0	34	0
Stage 1	33	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	833	1040	-	-	1578	-
Stage 1	989	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	804	1040	-	-	1578	-
Mov Cap-2 Maneuver	778	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	8.62	0		5.66		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1029		1578	-	
HCM Lane V/C Ratio	-	- 0.033		0.034	-	
HCM Ctrl Dly (s/v)	-	- 8.6		7.4	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0.1		0.1	-	

HCM 7th TWSC
15: Stacy Allison Way & South Site Drwy

Projected 2026 with Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	5	25	1	5	10
Future Vol, veh/h	1	5	25	1	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	27	1	5	11
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	49	28	0	0	28	0
Stage 1	28	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	960	1048	-	-	1585	-
Stage 1	995	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	956	1048	-	-	1585	-
Mov Cap-2 Maneuver	891	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	8.56	0		2.43		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	1018	1585	-	
HCM Lane V/C Ratio	-	-	0.006	0.003	-	
HCM Ctrl Dly (s/v)	-	-	8.6	7.3	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

HCM 7th TWSC
16: Evergreen Rd & Site Drwy

Projected 2026 with Project
AM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	25	35	165	105	55
Future Vol, veh/h	40	25	35	165	105	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	27	38	179	114	60

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	399	144	174
Stage 1	144	-	-
Stage 2	255	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	606	903	1403
Stage 1	883	-	-
Stage 2	787	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	590	903	1403
Mov Cap-2 Maneuver	642	-	-
Stage 1	859	-	-
Stage 2	787	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.52	1.34	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1403	-	723	-	-
HCM Lane V/C Ratio	0.027	-	0.098	-	-
HCM Ctrl Dly (s/v)	7.6	-	10.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Projected 2026 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	710	470	0	910	490	0	0	0	735	0	370
Future Volume (vph)	0	710	470	0	910	490	0	0	0	735	0	370
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3228	1413		3260	1458				3131		1423
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3228	1413		3260	1458				3131		1423
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	747	495	0	958	516	0	0	0	774	0	389
RTOR Reduction (vph)	0	0	193	0	0	201	0	0	0	0	0	78
Lane Group Flow (vph)	0	747	302	0	958	315	0	0	0	774	0	311
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		61.1	61.1		61.1	61.1				29.9		29.9
Effective Green, g (s)		61.1	61.1		61.1	61.1				29.9		29.9
Actuated g/C Ratio		0.61	0.61		0.61	0.61				0.30		0.30
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		1972	863		1991	890				936		425
v/s Ratio Prot		0.23			0.29					0.25		
v/s Ratio Perm			0.21			0.22						0.22
v/c Ratio		0.38	0.35		0.48	0.35				0.83		0.73
Uniform Delay, d1		9.8	9.6		10.7	9.7				32.6		31.5
Progression Factor		1.00	1.00		0.65	0.07				1.00		1.00
Incremental Delay, d2		0.6	1.1		0.7	0.9				6.1		6.4
Delay (s)		10.4	10.7		7.6	1.6				38.7		37.9
Level of Service		B	B		A	A				D		D
Approach Delay (s/veh)		10.5			5.5			0.0			38.4	
Approach LOS		B			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.0		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			59.8%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Projected 2026 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	710	470	0	910	490	0	0	0	735	0	370
Future Volume (veh/h)	0	710	470	0	910	490	0	0	0	735	0	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1709	1709	0	1723	1723				1709	0	1709
Adj Flow Rate, veh/h	0	747	0	0	958	0				774	0	389
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	0	2	2				3	0	3
Cap, veh/h	0	1962		0	1978					965	0	443
Arrive On Green	0.00	0.60	0.00	0.00	1.00	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3333	1448	0	3359	1460				3158	0	1448
Grp Volume(v), veh/h	0	747	0	0	958	0				774	0	389
Grp Sat Flow(s),veh/h/ln	0	1624	1448	0	1637	1460				1579	0	1448
Q Serve(g_s), s	0.0	11.8	0.0	0.0	0.0	0.0				22.5	0.0	25.5
Cycle Q Clear(g_c), s	0.0	11.8	0.0	0.0	0.0	0.0				22.5	0.0	25.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1962		0	1978					965	0	443
V/C Ratio(X)	0.00	0.38		0.00	0.48					0.80	0.00	0.88
Avail Cap(c_a), veh/h	0	1962		0	1978					1121	0	514
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	0.69	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.2	0.0	0.0	0.0	0.0				31.9	0.0	33.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.6	0.0				3.7	0.0	14.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	0.0	0.0	0.2	0.0				8.9	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	10.7	0.0	0.0	0.6	0.0				35.7	0.0	47.4
LnGrp LOS	B			A			D			D		
Approach Vol, veh/h	747			958			1163					
Approach Delay, s/veh	10.7			0.6			39.6					
Approach LOS	B			A			D					
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	64.9			35.1			64.9					
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	13.8			27.5			2.0					
Green Ext Time (p_c), s	6.2			3.1			8.9					
Intersection Summary												
HCM 7th Control Delay, s/veh				19.0								
HCM 7th LOS	B											
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Projected 2026 with Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	1245	215	0	1035	365	675
Future Volume (vph)	1245	215	0	1035	365	675
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.97		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.93	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3228	1403		3260	2978	1327
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3228	1403		3260	2978	1327
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1339	231	0	1113	392	726
RTOR Reduction (vph)	0	92	0	0	29	29
Lane Group Flow (vph)	1339	139	0	1113	726	334
Confl. Peds. (#/hr)		4				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	60.3	60.3		60.3	29.8	29.8
Effective Green, g (s)	60.3	60.3		60.3	29.8	29.8
Actuated g/C Ratio	0.60	0.60		0.60	0.30	0.30
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1946	846		1965	887	395
v/s Ratio Prot	c0.41			0.34	0.24	c0.25
v/s Ratio Perm		0.10				
v/c Ratio	0.69	0.16		0.57	0.82	0.84
Uniform Delay, d1	13.5	8.7		12.0	32.6	32.9
Progression Factor	1.07	1.72		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.4		1.2	5.9	15.1
Delay (s)	16.1	15.4		13.2	38.5	48.0
Level of Service	B	B		B	D	D
Approach Delay (s/veh)	16.0			13.2	41.6	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			22.7		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			75.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2026 with Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	45	75	1025	570	10	315	820	45	670	45	270	35
Future Volume (vph)	45	75	1025	570	10	315	820	45	670	45	270	35
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	3260	1425		1630	3231		1564	1577	1453	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1630	3260	1425		1630	3231		1564	1577	1453	1646
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	79	1079	600	11	332	863	47	705	47	284	37
RTOR Reduction (vph)	0	0	0	279	0	0	2	0	0	0	194	0
Lane Group Flow (vph)	0	126	1079	321	0	343	908	0	374	378	90	37
Confl. Peds. (#/hr)				1		1			2		1	1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		14.7	45.0	45.0		27.0	57.3		47.4	47.4	47.4	13.1
Effective Green, g (s)		14.7	45.0	45.0		27.0	57.3		47.4	47.4	47.4	13.1
Actuated g/C Ratio		0.10	0.30	0.30		0.18	0.38		0.32	0.32	0.32	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		159	978	427		293	1234		494	498	459	143
v/s Ratio Prot		0.08	c0.33			c0.21	0.28		0.24	c0.24		0.02
v/s Ratio Perm				0.23							0.06	
v/c Ratio		0.79	1.10	0.75		1.17	0.74		0.76	0.76	0.20	0.26
Uniform Delay, d1		66.2	52.5	47.5		61.5	39.8		46.1	46.2	37.4	63.9
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		23.1	61.4	11.6		107.0	3.9		6.5	6.5	0.2	1.0
Delay (s)		89.2	113.9	59.1		168.5	43.8		52.7	52.7	37.6	64.9
Level of Service		F	F	E		F	D		D	D	D	E
Approach Delay (s/veh)			93.9				77.9			48.6		
Approach LOS			F				E			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			77.3									
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			150.0									
Intersection Capacity Utilization			92.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2026 with Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗	
Traffic Volume (vph)	45	75
Future Volume (vph)	45	75
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1555	
Flt Permitted	1.00	
Satd. Flow (perm)	1555	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	47	79
RTOR Reduction (vph)	46	0
Lane Group Flow (vph)	80	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	13.1	
Effective Green, g (s)	13.1	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	135	
v/s Ratio Prot	c0.05	
v/s Ratio Perm		
v/c Ratio	0.60	
Uniform Delay, d1	65.9	
Progression Factor	1.00	
Incremental Delay, d2	6.9	
Delay (s)	72.8	
Level of Service	E	
Approach Delay (s/veh)	71.0	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2026 with Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	85	1055	35	1	65	995	55	105	30	65	60
Future Volume (vph)	15	85	1055	35	1	65	995	55	105	30	65	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	0.99		1.00	0.90		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1630	3242			1630	3230		1646	1529		1646
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1630	3242			1630	3230		1646	1529		1646
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	90	1122	37	1	69	1059	59	112	32	69	64
RTOR Reduction (vph)	0	0	2	0	0	0	3	0	0	60	0	0
Lane Group Flow (vph)	0	106	1157	0	0	70	1115	0	112	41	0	64
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		11.4	54.1			8.5	51.2		11.9	12.8		8.1
Effective Green, g (s)		11.4	54.1			8.5	51.2		11.9	12.8		8.1
Actuated g/C Ratio		0.11	0.54			0.09	0.51		0.12	0.13		0.08
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		185	1753			138	1653		195	195		133
v/s Ratio Prot		c0.07	c0.36			0.04	0.35		c0.07	c0.03		0.04
v/s Ratio Perm												
v/c Ratio		0.57	0.66			0.51	0.67		0.57	0.21		0.48
Uniform Delay, d1		42.0	16.4			43.7	18.2		41.7	39.1		43.9
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		4.2	2.0			2.9	2.2		4.0	0.5		2.7
Delay (s)		46.2	18.4			46.7	20.4		45.7	39.6		46.7
Level of Service		D	B			D	C		D	D		D
Approach Delay (s/veh)			20.7				22.0			42.8		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			24.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			61.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2026 with Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	↱	
Traffic Volume (vph)	30	70
Future Volume (vph)	30	70
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	1532	
Flt Permitted	1.00	
Satd. Flow (perm)	1532	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	32	74
RTOR Reduction (vph)	67	0
Lane Group Flow (vph)	39	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.0	
Effective Green, g (s)	9.0	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	137	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.28	
Uniform Delay, d1	42.5	
Progression Factor	1.00	
Incremental Delay, d2	1.1	
Delay (s)	43.6	
Level of Service	D	
Approach Delay (s/veh)	44.8	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2026 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	615	355	115	660	120	280	150	115	95	250	150
Future Volume (vph)	125	615	355	115	660	120	280	150	115	95	250	150
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1699	1444	1630	1716	1458	1646	1733	1448	1646	1733	1473
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1699	1444	1630	1716	1458	1646	1733	1448	1646	1733	1473
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	628	362	117	673	122	286	153	117	97	255	153
RTOR Reduction (vph)	0	0	93	0	0	48	0	0	76	0	0	79
Lane Group Flow (vph)	128	628	269	117	673	74	286	153	41	97	255	74
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	9.5	45.6	66.1	9.5	45.6	56.8	20.5	30.6	40.1	11.2	21.3	30.8
Effective Green, g (s)	9.5	45.6	66.1	9.5	45.6	56.8	20.5	30.6	40.1	11.2	21.3	30.8
Actuated g/C Ratio	0.08	0.40	0.58	0.08	0.40	0.49	0.18	0.27	0.35	0.10	0.19	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	674	887	134	681	777	293	461	562	160	321	452
v/s Ratio Prot	c0.08	0.37	0.05	0.07	c0.39	0.01	c0.17	0.09	0.01	0.06	c0.15	0.01
v/s Ratio Perm			0.13			0.04			0.02			0.04
v/c Ratio	0.96	0.93	0.30	0.87	0.99	0.10	0.98	0.33	0.07	0.61	0.79	0.16
Uniform Delay, d1	52.5	33.2	12.6	52.1	34.4	15.4	47.0	33.9	25.0	49.7	44.7	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	66.1	19.7	0.2	42.1	31.2	0.1	45.6	0.4	0.1	6.4	12.7	0.2
Delay (s)	118.6	52.9	12.7	94.2	65.6	15.5	92.5	34.3	25.0	56.1	57.4	32.4
Level of Service	F	D	B	F	E	B	F	C	C	E	E	C
Approach Delay (s/veh)		47.4			62.5			62.3			49.6	
Approach LOS		D			E			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			54.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			114.9				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			91.4%				ICU Level of Service			F		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2026 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	615	355	115	660	120	280	150	115	95	250	150
Future Volume (veh/h)	125	615	355	115	660	120	280	150	115	95	250	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1723	1723	1723	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	128	628	362	117	673	122	286	153	117	97	255	153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	137	688	846	138	693	693	301	488	528	120	298	377
Arrive On Green	0.08	0.40	0.40	0.08	0.40	0.40	0.18	0.28	0.28	0.07	0.17	0.17
Sat Flow, veh/h	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Grp Volume(v), veh/h	128	628	362	117	673	122	286	153	117	97	255	153
Grp Sat Flow(s),veh/h/ln	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Q Serve(g_s), s	8.8	39.1	15.6	7.9	43.2	5.4	19.3	7.8	6.3	6.5	16.1	9.7
Cycle Q Clear(g_c), s	8.8	39.1	15.6	7.9	43.2	5.4	19.3	7.8	6.3	6.5	16.1	9.7
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	137	688	846	138	693	693	301	488	528	120	298	377
V/C Ratio(X)	0.93	0.91	0.43	0.85	0.97	0.18	0.95	0.31	0.22	0.81	0.85	0.41
Avail Cap(c_a), veh/h	137	690	848	138	695	695	301	516	551	198	408	470
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	51.3	31.8	13.0	50.9	33.0	17.0	45.6	31.9	24.7	51.5	45.3	34.8
Incr Delay (d2), s/veh	56.8	16.6	0.3	35.8	26.9	0.1	38.8	0.4	0.2	12.0	12.3	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	18.9	5.0	4.6	22.7	1.8	11.1	3.3	2.2	3.1	7.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	108.1	48.4	13.3	86.7	60.0	17.1	84.5	32.3	24.9	63.5	57.6	35.5
LnGrp LOS	F	D	B	F	E	B	F	C	C	E	E	D
Approach Vol, veh/h	1118			912			556			505		
Approach Delay, s/veh	43.9			57.7			57.6			52.0		
Approach LOS	D			E			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	49.9	25.0	23.9	14.0	49.9	12.7	36.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	45.5	20.5	26.5	9.5	45.5	13.5	33.5				
Max Q Clear Time (g_c+I1), s	9.9	41.1	21.3	18.1	10.8	45.2	8.5	9.8				
Green Ext Time (p_c), s	0.0	2.2	0.0	1.3	0.0	0.2	0.1	1.2				

Intersection Summary

HCM 7th Control Delay, s/veh 51.7
HCM 7th LOS D

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

HCM 7th TWSC
6: Evergreen Rd & Stacy Allison Way

Projected 2026 with Project
PM Peak Hour

Intersection						
Int Delay, s/veh	104.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	465	75	35	550	675	290
Future Vol, veh/h	465	75	35	550	675	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	495	80	37	585	718	309

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1532	872	1027	0	-	0
Stage 1	872	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 129	351	680	-	-	-
Stage 1	~ 411	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 122	351	680	-	-	-
Mov Cap-2 Maneuver	~ 256	-	-	-	-	-
Stage 1	~ 388	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	\$ 402.56	0.63	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	680	-	256	351	-	-
HCM Lane V/C Ratio	0.055	-	1.929	0.227	-	-
HCM Ctrl Dly (s/v)	10.6	-	\$ 464.5	18.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	35.1	0.9	-	-

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

HCM 7th AWSC
7: Evergreen Rd & Hayes St

Projected 2026 with Project
PM Peak Hour

Intersection	
Intersection Delay, s/veh	98.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	55	1	185	70	155	5	430	105	185	485	40
Future Vol, veh/h	25	55	1	185	70	155	5	430	105	185	485	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	1	1	1
Mvmt Flow	26	58	1	195	74	163	5	453	111	195	511	42
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	16.4	48.1	142.2	103.7
HCM LOS	C	E	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	31%	45%	100%	0%
Vol Thru, %	0%	80%	68%	17%	0%	92%
Vol Right, %	0%	20%	1%	38%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	535	81	410	185	525
LT Vol	5	0	25	185	185	0
Through Vol	0	430	55	70	0	485
RT Vol	0	105	1	155	0	40
Lane Flow Rate	5	563	85	432	195	553
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.012	1.22	0.221	0.888	0.451	1.193
Departure Headway (Hd)	8.778	8.116	10.425	8.095	8.805	8.229
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	410	451	347	453	411	448
Service Time	6.478	5.816	8.425	6.095	6.505	5.929
HCM Lane V/C Ratio	0.012	1.248	0.245	0.954	0.474	1.234
HCM Control Delay, s/veh	11.6	143.4	16.4	48.1	18.5	133.7
HCM Lane LOS	B	F	C	E	C	F
HCM 95th-tile Q	0	21.6	0.8	9.4	2.3	20.2

HCM 7th TWSC
8: Harvard Dr & Evergreen Rd

Projected 2026 with Project
PM Peak Hour

Intersection												
Int Delay, s/veh	44.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	285	45	200	270	1	20	60	145	10	160	70
Future Vol, veh/h	20	285	45	200	270	1	20	60	145	10	160	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	22	313	49	220	297	1	22	66	159	11	176	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	298	0	0	363	0	0	1206	1119	338	1127	1143	297
Stage 1	-	-	-	-	-	-	382	382	-	737	737	-
Stage 2	-	-	-	-	-	-	824	737	-	390	407	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1269	-	-	1202	-	-	161	208	707	183	201	745
Stage 1	-	-	-	-	-	-	643	614	-	412	426	-
Stage 2	-	-	-	-	-	-	369	426	-	636	599	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1269	-	-	1202	-	-	-	167	707	74	~ 161	745
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	167	-	74	~ 161	-
Stage 1	-	-	-	-	-	-	632	604	-	336	348	-
Stage 2	-	-	-	-	-	-	134	348	-	431	589	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.45	3.68		230.29
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1269	-	-	1202	-	-	197
HCM Lane V/C Ratio	-	0.017	-	-	0.183	-	-	1.341
HCM Ctrl Dly (s/v)	-	7.9	-	-	8.7	-	-	230.3
HCM Lane LOS	-	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0.7	-	-	15

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

HCM 7th Signalized Intersection Summary 9: Settlemier St & Hayes St

Projected 2026 with Project
PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	190	185	445	515	100
Future Volume (veh/h)	115	190	185	445	515	100
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	129	213	208	500	579	112
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	313	278	208	1106	600	116
Arrive On Green	0.19	0.19	0.13	0.64	0.42	0.42
Sat Flow, veh/h	1654	1471	1654	1736	1414	273
Grp Volume(v), veh/h	129	213	208	500	0	691
Grp Sat Flow(s),veh/h/ln	1654	1471	1654	1736	0	1687
Q Serve(g_s), s	3.6	7.1	6.5	7.6	0.0	20.7
Cycle Q Clear(g_c), s	3.6	7.1	6.5	7.6	0.0	20.7
Prop In Lane	1.00	1.00	1.00			0.16
Lane Grp Cap(c), veh/h	313	278	208	1106	0	717
V/C Ratio(X)	0.41	0.77	1.00	0.45	0.00	0.96
Avail Cap(c_a), veh/h	575	511	208	1106	0	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	19.9	22.6	4.8	0.0	14.5
Incr Delay (d2), s/veh	0.9	4.4	63.1	0.3	0.0	25.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.9	5.9	1.7	0.0	11.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.3	24.3	85.7	5.1	0.0	39.5
LnGrp LOS	B	C	F	A		D
Approach Vol, veh/h	342			708	691	
Approach Delay, s/veh	22.4			28.8	39.5	
Approach LOS	C			C	D	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	37.5			14.3	11.0	26.5
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0			18.0	6.5	22.0
Max Q Clear Time (g_c+I1), s	9.6			9.1	8.5	22.7
Green Ext Time (p_c), s	3.3			0.8	0.0	0.0
Intersection Summary						
HCM 7th Control Delay, s/veh			31.8			
HCM 7th LOS			C			

HCM 7th TWSC
10: Evergreen Rd & Hopper St

Projected 2026 with Project
PM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	10	5	145	200	145
Future Vol, veh/h	100	10	5	145	200	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	550	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	114	11	6	165	227	165

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	486	310	392
Stage 1	310	-	-
Stage 2	176	-	-
Critical Hdwy	6.41	6.21	4.11
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	2.209
Pot Cap-1 Maneuver	542	733	1172
Stage 1	746	-	-
Stage 2	857	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	540	733	1172
Mov Cap-2 Maneuver	606	-	-
Stage 1	743	-	-
Stage 2	857	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.34	0.27	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1172	-	615	-	-
HCM Lane V/C Ratio	0.005	-	0.203	-	-
HCM Ctrl Dly (s/v)	8.1	-	12.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	30	95	15	80	30	85	110	75	90	15
Future Vol, veh/h	10	10	30	95	15	80	30	85	110	75	90	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	11	34	108	17	91	34	97	125	85	102	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	10	9.9	9.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	20%	50%	42%
Vol Thru, %	38%	20%	8%	50%
Vol Right, %	49%	60%	42%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	225	50	190	180
LT Vol	30	10	95	75
Through Vol	85	10	15	90
RT Vol	110	30	80	15
Lane Flow Rate	256	57	216	205
Geometry Grp	1	1	1	1
Degree of Util (X)	0.325	0.078	0.294	0.28
Departure Headway (Hd)	4.578	4.969	4.904	4.923
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	780	712	725	724
Service Time	2.646	3.064	2.978	2.995
HCM Lane V/C Ratio	0.328	0.08	0.298	0.283
HCM Control Delay, s/veh	9.9	8.5	10	9.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.4	0.3	1.2	1.1

Intersection

Intersection Delay, s/veh 16.3

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	65	150	75	105	5	115	195	50	5	245	70
Future Vol, veh/h	60	65	150	75	105	5	115	195	50	5	245	70
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	65	70	161	81	113	5	124	210	54	5	263	75
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay, s/veh	4.2	12.7	20.5	15.6
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	37%	0%	100%	0%	100%	0%	2%	0%
Vol Thru, %	63%	0%	0%	30%	0%	95%	98%	0%
Vol Right, %	0%	100%	0%	70%	0%	5%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	310	50	60	215	75	110	250	70
LT Vol	115	0	60	0	75	0	5	0
Through Vol	195	0	0	65	0	105	245	0
RT Vol	0	50	0	150	0	5	0	70
Lane Flow Rate	333	54	65	231	81	118	269	75
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.654	0.092	0.14	0.438	0.18	0.246	0.523	0.131
Departure Headway (Hd)	7.067	6.162	7.83	6.817	8.036	7.489	7.001	6.275
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	510	581	458	527	446	479	513	571
Service Time	4.813	3.908	5.579	4.565	5.791	5.244	4.749	4.023
HCM Lane V/C Ratio	0.653	0.093	0.142	0.438	0.182	0.246	0.524	0.131
HCM Control Delay, s/veh	22.3	9.5	11.9	14.8	12.6	12.7	17.2	10
HCM Lane LOS	C	A	B	B	B	B	C	A
HCM 95th-tile Q	4.7	0.3	0.5	2.2	0.6	1	3	0.4

Intersection						
Int Delay, s/veh	7.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	85	120	160	90	170	235
Future Vol, veh/h	85	120	160	90	170	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	3	3	1	1
Mvmt Flow	97	136	182	102	193	267
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	886	233	0	0	284	0
Stage 1	233	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	316	809	-	-	1284	-
Stage 1	808	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	260	809	-	-	1284	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	22.7	0		3.48		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	432	756	-	
HCM Lane V/C Ratio	-	-	0.54	0.15	-	
HCM Ctrl Dly (s/v)	-	-	22.7	8.3	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	3.1	0.5	-	

HCM 7th TWSC
14: Stacy Allison Way & North Site Drwy

Projected 2026 with Project
PM Peak Hour

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	155	20	0	155	30
Future Vol, veh/h	1	155	20	0	155	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	168	22	0	168	33
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	391	22	0	0	22	0
Stage 1	22	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	613	1055	-	-	1594	-
Stage 1	1001	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	548	1055	-	-	1594	-
Mov Cap-2 Maneuver	560	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	9.09	0		6.31		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1050		1594	-	
HCM Lane V/C Ratio	-	- 0.162		0.106	-	
HCM Ctrl Dly (s/v)	-	- 9.1		7.5	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0.6		0.4	-	

HCM 7th TWSC
15: Stacy Allison Way & South Site Drwy

Projected 2026 with Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	5	15	1	5	25
Future Vol, veh/h	1	5	15	1	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	16	1	5	27

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	55	17	0
Stage 1	17	-	-
Stage 2	38	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	953	1062	-
Stage 1	1006	-	-
Stage 2	984	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	950	1062	-
Mov Cap-2 Maneuver	885	-	-
Stage 1	1006	-	-
Stage 2	981	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.52	0	1.21
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1028	1600
HCM Lane V/C Ratio	-	-	0.006	0.003
HCM Ctrl Dly (s/v)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	65	65	105	170	120
Future Vol, veh/h	120	65	65	105	170	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	71	71	114	185	130

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	505	250	315
Stage 1	250	-	-
Stage 2	255	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	527	789	1245
Stage 1	792	-	-
Stage 2	787	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	497	789	1245
Mov Cap-2 Maneuver	576	-	-
Stage 1	747	-	-
Stage 2	787	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.25	3.08	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1245	-	636	-	-
HCM Lane V/C Ratio	0.057	-	0.316	-	-
HCM Ctrl Dly (s/v)	8.1	-	13.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.4	-	-

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Baseline 2040
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	390	255	0	475	490	0	0	0	325	0	215
Future Volume (vph)	0	390	255	0	475	490	0	0	0	325	0	215
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3107	1361		3137	1403				2906		1340
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3107	1361		3137	1403				2906		1340
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	419	274	0	511	527	0	0	0	349	0	231
RTOR Reduction (vph)	0	0	72	0	0	139	0	0	0	0	0	191
Lane Group Flow (vph)	0	419	202	0	511	388	0	0	0	349	0	40
Confl. Peds. (#/hr)			2									
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	0%	0%	0%	11%	11%	11%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		73.6	73.6		73.6	73.6				17.4		17.4
Effective Green, g (s)		73.6	73.6		73.6	73.6				17.4		17.4
Actuated g/C Ratio		0.74	0.74		0.74	0.74				0.17		0.17
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2286	1001		2308	1032				505		233
v/s Ratio Prot		0.13			0.16					c0.12		
v/s Ratio Perm			0.15			c0.28						0.03
v/c Ratio		0.18	0.20		0.22	0.38				0.69		0.17
Uniform Delay, d1		4.0	4.1		4.2	4.8				38.8		35.2
Progression Factor		1.00	1.00		0.95	1.93				1.00		1.00
Incremental Delay, d2		0.2	0.5		0.2	1.0				4.1		0.4
Delay (s)		4.2	4.5		4.2	10.3				42.8		35.5
Level of Service		A	A		A	B				D		D
Approach Delay (s/veh)		4.3			7.3			0.0			39.9	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.6									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			100.0									Sum of lost time (s) 9.0
Intersection Capacity Utilization			36.7%									ICU Level of Service A
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Baseline 2040
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↖↖		↗
Traffic Volume (veh/h)	0	390	255	0	475	490	0	0	0	325	0	215
Future Volume (veh/h)	0	390	255	0	475	490	0	0	0	325	0	215
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1654	1654	0	1668	1668				1600	0	1600
Adj Flow Rate, veh/h	0	419	0	0	511	0				349	0	231
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	7	7	0	6	6				11	0	11
Cap, veh/h	0	2221		0	2239					601	0	276
Arrive On Green	0.00	0.71	0.00	0.00	1.00	0.00				0.20	0.00	0.20
Sat Flow, veh/h	0	3226	1402	0	3253	1414				2956	0	1356
Grp Volume(v), veh/h	0	419	0	0	511	0				349	0	231
Grp Sat Flow(s),veh/h/ln	0	1572	1402	0	1585	1414				1478	0	1356
Q Serve(g_s), s	0.0	4.5	0.0	0.0	0.0	0.0				10.7	0.0	16.4
Cycle Q Clear(g_c), s	0.0	4.5	0.0	0.0	0.0	0.0				10.7	0.0	16.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2221		0	2239					601	0	276
V/C Ratio(X)	0.00	0.19		0.00	0.23					0.58	0.00	0.84
Avail Cap(c_a), veh/h	0	2221		0	2239					1049	0	481
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	0.82	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	0.0	0.0	0.0	0.0				36.0	0.0	38.2
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				0.9	0.0	6.7
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	1.3	0.0	0.0	0.1	0.0				3.9	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	5.2	0.0	0.0	0.2	0.0				36.9	0.0	44.9
LnGrp LOS		A			A					D		D
Approach Vol, veh/h		419			511						580	
Approach Delay, s/veh		5.2			0.2						40.1	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		75.2		24.8		75.2						
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		6.5		18.4		2.0						
Green Ext Time (p_c), s		3.2		2.0		4.0						
Intersection Summary												
HCM 7th Control Delay, s/veh			16.9									
HCM 7th LOS			B									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Baseline 2040
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	505	215	0	685	285	585
Future Volume (vph)	505	215	0	685	285	585
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.98		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92	0.85
Flt Protected	1.00	1.00		1.00	0.98	1.00
Satd. Flow (prot)	3079	1344		3137	2853	1277
Flt Permitted	1.00	1.00		1.00	0.98	1.00
Satd. Flow (perm)	3079	1344		3137	2853	1277
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	532	226	0	721	300	616
RTOR Reduction (vph)	0	63	0	0	232	253
Lane Group Flow (vph)	532	163	0	721	376	55
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	8%	8%	6%	6%	6%	6%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	72.1	72.1		72.1	18.0	18.0
Effective Green, g (s)	72.1	72.1		72.1	18.0	18.0
Actuated g/C Ratio	0.72	0.72		0.72	0.18	0.18
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2219	969		2261	513	229
v/s Ratio Prot	0.17			c0.23	c0.13	0.04
v/s Ratio Perm		0.12				
v/c Ratio	0.24	0.17		0.32	0.73	0.24
Uniform Delay, d1	4.7	4.4		5.1	38.7	35.2
Progression Factor	0.98	2.13		0.65	1.00	1.00
Incremental Delay, d2	0.3	0.4		0.2	5.4	0.6
Delay (s)	4.9	9.8		3.5	44.1	35.7
Level of Service	A	A		A	D	D
Approach Delay (s/veh)	6.3			3.5	41.3	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			18.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			54.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Baseline 2040
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	55	55	745	160	5	115	825	20	630	25	150	15
Future Volume (vph)	55	55	745	160	5	115	825	20	630	25	150	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3137	1368		1572	3125		1548	1558	1437	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1614	3137	1368		1572	3125		1548	1558	1437	1646
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	59	59	801	172	5	124	887	22	677	27	161	16
RTOR Reduction (vph)	0	0	0	113	0	0	2	0	0	0	115	0
Lane Group Flow (vph)	0	118	801	59	0	129	907	0	352	352	46	16
Confl. Peds. (#/hr)				2					5		2	2
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	6%	6%	6%	2%	2%	2%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		11.7	34.3	34.3		12.1	34.7		28.5	28.5	28.5	7.6
Effective Green, g (s)		11.7	34.3	34.3		12.1	34.7		28.5	28.5	28.5	7.6
Actuated g/C Ratio		0.12	0.34	0.34		0.12	0.35		0.28	0.28	0.28	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		188	1075	469		190	1084		441	444	409	125
v/s Ratio Prot		0.07	0.26			c0.08	c0.29		c0.23	0.23		0.01
v/s Ratio Perm				0.04							0.03	
v/c Ratio		0.63	0.75	0.13		0.68	0.84		0.80	0.79	0.11	0.13
Uniform Delay, d1		42.1	29.0	22.6		42.1	30.0		33.1	33.0	26.4	43.1
Progression Factor		1.08	0.69	0.32		0.80	0.99		1.00	1.00	1.00	1.00
Incremental Delay, d2		6.0	4.4	0.5		8.8	7.3		9.7	9.4	0.1	0.5
Delay (s)		51.6	24.4	7.7		42.3	37.0		42.8	42.4	26.5	43.6
Level of Service		D	C	A		D	D		D	D	C	D
Approach Delay (s/veh)			24.7				37.6			39.6		
Approach LOS			C				D			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			33.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			69.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Baseline 2040
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗	
Traffic Volume (vph)	20	30
Future Volume (vph)	20	30
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1563	
Flt Permitted	1.00	
Satd. Flow (perm)	1563	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	32
RTOR Reduction (vph)	30	0
Lane Group Flow (vph)	24	0
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	7.6	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	118	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.21	
Uniform Delay, d1	43.4	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	44.2	
Level of Service	D	
Approach Delay (s/veh)	44.1	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Baseline 2040
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	10	20	755	5	1	75	775	15	100	10	80	10
Future Volume (vph)	10	20	755	5	1	75	775	15	100	10	80	10
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	1.00		1.00	0.87		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1600	3133			1555	3097		1646	1471		1630
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1600	3133			1555	3097		1646	1471		1630
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	21	795	5	1	79	816	16	105	11	84	11
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	70	0	0
Lane Group Flow (vph)	0	32	800	0	0	80	831	0	105	25	0	11
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	7%	7%	7%	1%	1%	1%	2%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		5.2	56.0			9.2	60.0		10.2	16.8		1.5
Effective Green, g (s)		5.2	56.0			9.2	60.0		10.2	16.8		1.5
Actuated g/C Ratio		0.05	0.56			0.09	0.60		0.10	0.17		0.02
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		83	1754			143	1858		167	247		24
v/s Ratio Prot		0.02	0.26			c0.05	c0.27		c0.06	c0.02		0.01
v/s Ratio Perm												
v/c Ratio		0.39	0.46			0.56	0.45		0.63	0.10		0.46
Uniform Delay, d1		45.9	13.0			43.5	10.9		43.1	35.2		48.8
Progression Factor		0.43	1.84			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		2.3	0.7			4.7	0.8		7.2	0.2		13.2
Delay (s)		22.2	24.5			48.1	11.7		50.3	35.4		62.1
Level of Service		C	C			D	B		D	D		E
Approach Delay (s/veh)			24.4				14.9			43.2		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			22.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			50.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Baseline 2040
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	←	→
Traffic Volume (vph)	5	55
Future Volume (vph)	5	55
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.98	
Flpb, ped/bikes	1.00	
Frt	0.86	
Flt Protected	1.00	
Satd. Flow (prot)	1454	
Flt Permitted	1.00	
Satd. Flow (perm)	1454	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	5	58
RTOR Reduction (vph)	53	0
Lane Group Flow (vph)	10	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	2%	2%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.1	
Effective Green, g (s)	8.1	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	117	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.08	
Uniform Delay, d1	42.5	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	42.8	
Level of Service	D	
Approach Delay (s/veh)	45.7	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Baseline 2040
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	475	140	45	415	45	325	120	90	65	90	110
Future Volume (vph)	70	475	140	45	415	45	325	120	90	65	90	110
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1636	1390	1484	1563	1328	1630	1716	1431	1630	1716	1458
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	505	149	48	441	48	346	128	96	69	96	117
RTOR Reduction (vph)	0	0	59	0	0	27	0	0	63	0	0	94
Lane Group Flow (vph)	74	505	90	48	441	21	346	128	33	69	96	23
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	7%	7%	7%	12%	12%	12%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	30.5	51.1	4.3	29.3	36.2	20.6	24.6	28.9	6.9	10.9	16.4
Effective Green, g (s)	5.5	30.5	51.1	4.3	29.3	36.2	20.6	24.6	28.9	6.9	10.9	16.4
Actuated g/C Ratio	0.07	0.36	0.61	0.05	0.35	0.43	0.24	0.29	0.34	0.08	0.13	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	591	916	75	542	641	398	500	566	133	221	361
v/s Ratio Prot	c0.05	c0.31	0.02	0.03	0.28	0.00	c0.21	0.07	0.00	0.04	c0.06	0.00
v/s Ratio Perm			0.04			0.01			0.02			0.01
v/c Ratio	0.73	0.85	0.10	0.64	0.81	0.03	0.87	0.26	0.06	0.52	0.43	0.06
Uniform Delay, d1	38.7	24.8	7.0	39.2	25.0	13.9	30.6	22.8	18.6	37.1	33.9	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	11.6	0.0	17.1	9.1	0.0	17.9	0.3	0.0	3.4	1.4	0.1
Delay (s)	62.4	36.4	7.0	56.4	34.1	13.9	48.5	23.1	18.6	40.5	35.2	27.8
Level of Service	E	D	A	E	C	B	D	C	B	D	D	C
Approach Delay (s/veh)		33.0			34.3			37.7			33.4	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			34.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			84.3				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			68.8%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

5: Settlemier St/Boones Ferry Rd & OR 214

Baseline 2040
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	475	140	45	415	45	325	120	90	65	90	110
Future Volume (veh/h)	70	475	140	45	415	45	325	120	90	65	90	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1654	1654	1654	1586	1586	1586	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	74	505	149	48	441	48	346	128	96	69	96	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	12	12	12	2	2	2	2	2	2
Cap, veh/h	90	576	822	66	530	520	391	514	489	87	194	248
Arrive On Green	0.06	0.35	0.35	0.04	0.33	0.33	0.24	0.30	0.30	0.05	0.11	0.11
Sat Flow, veh/h	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Grp Volume(v), veh/h	74	505	149	48	441	48	346	128	96	69	96	117
Grp Sat Flow(s),veh/h/ln	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Q Serve(g_s), s	3.2	20.0	3.4	2.2	17.9	1.6	14.2	3.9	3.3	2.9	3.7	5.1
Cycle Q Clear(g_c), s	3.2	20.0	3.4	2.2	17.9	1.6	14.2	3.9	3.3	2.9	3.7	5.1
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	90	576	822	66	530	520	391	514	489	87	194	248
V/C Ratio(X)	0.82	0.88	0.18	0.73	0.83	0.09	0.88	0.25	0.20	0.80	0.49	0.47
Avail Cap(c_a), veh/h	124	699	926	119	670	639	482	925	829	223	654	637
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	32.6	21.4	6.7	33.0	21.5	13.6	25.7	18.6	16.2	32.7	29.1	26.2
Incr Delay (d2), s/veh	25.4	10.6	0.1	14.5	7.2	0.1	15.2	0.3	0.2	15.1	1.9	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.8	0.9	1.0	7.2	0.5	6.9	1.5	1.0	1.5	1.6	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.0	32.0	6.8	47.5	28.6	13.7	40.9	18.8	16.4	47.8	31.1	27.6
LnGrp LOS	E	C	A	D	C	B	D	B	B	D	C	C
Approach Vol, veh/h	728			537			570			282		
Approach Delay, s/veh	29.5			29.0			31.8			33.7		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	28.8	21.2	12.4	8.5	27.8	8.2	25.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	29.5	20.5	26.5	5.5	29.5	9.5	37.5				
Max Q Clear Time (g_c+I1), s	4.2	22.0	16.2	7.1	5.2	19.9	4.9	5.9				
Green Ext Time (p_c), s	0.0	2.3	0.5	0.8	0.0	2.1	0.0	1.1				

Intersection Summary

HCM 7th Control Delay, s/veh 30.5
HCM 7th LOS C

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Projected 2040 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	745	500	0	960	490	0	0	0	740	0	390
Future Volume (vph)	0	745	500	0	960	490	0	0	0	740	0	390
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3228	1413		3260	1458				3131		1423
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3228	1413		3260	1458				3131		1423
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	784	526	0	1011	516	0	0	0	779	0	411
RTOR Reduction (vph)	0	0	206	0	0	202	0	0	0	0	0	68
Lane Group Flow (vph)	0	784	320	0	1011	314	0	0	0	779	0	343
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		60.8	60.8		60.8	60.8				30.2		30.2
Effective Green, g (s)		60.8	60.8		60.8	60.8				30.2		30.2
Actuated g/C Ratio		0.61	0.61		0.61	0.61				0.30		0.30
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		1962	859		1982	886				945		429
v/s Ratio Prot		0.24			0.31					0.25		
v/s Ratio Perm			0.23			0.22						0.24
v/c Ratio		0.40	0.37		0.51	0.35				0.82		0.80
Uniform Delay, d1		10.1	9.9		11.1	9.8				32.4		32.1
Progression Factor		1.00	1.00		0.64	0.06				1.00		1.00
Incremental Delay, d2		0.6	1.2		0.7	0.9				5.9		10.3
Delay (s)		10.8	11.2		7.8	1.4				38.4		42.4
Level of Service		B	B		A	A				D		D
Approach Delay (s/veh)		10.9			5.7			0.0			39.7	
Approach LOS		B			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.5		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			62.6%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Projected 2040 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	745	500	0	960	490	0	0	0	740	0	390
Future Volume (veh/h)	0	745	500	0	960	490	0	0	0	740	0	390
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1709	1709	0	1723	1723				1709	0	1709
Adj Flow Rate, veh/h	0	784	0	0	1011	0				779	0	411
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	0	2	2				3	0	3
Cap, veh/h	0	1923		0	1939					1003	0	460
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	3333	1448	0	3359	1460				3158	0	1448
Grp Volume(v), veh/h	0	784	0	0	1011	0				779	0	411
Grp Sat Flow(s),veh/h/ln	0	1624	1448	0	1637	1460				1579	0	1448
Q Serve(g_s), s	0.0	13.0	0.0	0.0	0.0	0.0				22.3	0.0	27.0
Cycle Q Clear(g_c), s	0.0	13.0	0.0	0.0	0.0	0.0				22.3	0.0	27.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1923		0	1939					1003	0	460
V/C Ratio(X)	0.00	0.41		0.00	0.52					0.78	0.00	0.89
Avail Cap(c_a), veh/h	0	1923		0	1939					1121	0	514
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	0.66	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.0	0.0	0.0	0.0	0.0				30.9	0.0	32.5
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.7	0.0				3.2	0.0	16.6
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	4.5	0.0	0.0	0.2	0.0				8.7	0.0	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	11.6	0.0	0.0	0.7	0.0				34.0	0.0	49.1
LnGrp LOS	B			A			C			D		
Approach Vol, veh/h	784			1011						1190		
Approach Delay, s/veh	11.6			0.7						39.3		
Approach LOS	B			A						D		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	63.7			36.3			63.7					
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	15.0			29.0			2.0					
Green Ext Time (p_c), s	6.6			2.7			9.6					
Intersection Summary												
HCM 7th Control Delay, s/veh	18.9											
HCM 7th LOS	B											
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Projected 2040 without Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	1270	225	0	1065	390	685
Future Volume (vph)	1270	225	0	1065	390	685
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.97		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.93	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3228	1403		3260	2983	1327
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3228	1403		3260	2983	1327
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1366	242	0	1145	419	737
RTOR Reduction (vph)	0	98	0	0	27	27
Lane Group Flow (vph)	1366	144	0	1145	761	341
Confl. Peds. (#/hr)		4				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	59.7	59.7		59.7	30.4	30.4
Effective Green, g (s)	59.7	59.7		59.7	30.4	30.4
Actuated g/C Ratio	0.60	0.60		0.60	0.30	0.30
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1927	837		1946	906	403
v/s Ratio Prot	c0.42			0.35	0.26	c0.26
v/s Ratio Perm		0.10				
v/c Ratio	0.71	0.17		0.59	0.84	0.85
Uniform Delay, d1	14.1	9.1		12.5	32.5	32.6
Progression Factor	1.05	1.72		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4		1.3	6.9	15.0
Delay (s)	16.7	15.9		13.8	39.4	47.6
Level of Service	B	B		B	D	D
Approach Delay (s/veh)	16.6			13.8	42.0	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			23.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			77.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2040 without Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	50	80	1125	480	15	235	915	45	595	50	190	40
Future Volume (vph)	50	80	1125	480	15	235	915	45	595	50	190	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	3260	1425		1630	3234		1564	1579	1453	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1630	3260	1425		1630	3234		1564	1579	1453	1646
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	84	1184	505	16	247	963	47	626	53	200	42
RTOR Reduction (vph)	0	0	0	214	0	0	2	0	0	0	142	0
Lane Group Flow (vph)	0	137	1184	291	0	263	1008	0	338	341	58	42
Confl. Peds. (#/hr)				1		1			2		1	1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		15.7	50.9	50.9		24.1	59.3		43.2	43.2	43.2	14.3
Effective Green, g (s)		15.7	50.9	50.9		24.1	59.3		43.2	43.2	43.2	14.3
Actuated g/C Ratio		0.10	0.34	0.34		0.16	0.40		0.29	0.29	0.29	0.10
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		170	1106	483		261	1278		450	454	418	156
v/s Ratio Prot		0.08	c0.36			c0.16	0.31		c0.22	0.22		0.03
v/s Ratio Perm				0.20							0.04	
v/c Ratio		0.81	1.07	0.60		1.01	0.79		0.75	0.75	0.14	0.27
Uniform Delay, d1		65.7	49.6	41.1		63.0	39.8		48.5	48.5	39.6	63.0
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		23.5	48.1	5.5		57.7	5.0		6.9	6.9	0.2	0.9
Delay (s)		89.2	97.6	46.6		120.6	44.8		55.4	55.4	39.7	63.9
Level of Service		F	F	D		F	D		E	E	D	E
Approach Delay (s/veh)			82.9				60.5			51.9		
Approach LOS			F				E			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			69.0									
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			150.0									
Intersection Capacity Utilization			92.2%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2040 without Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗➡️	
Traffic Volume (vph)	50	80
Future Volume (vph)	50	80
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1559	
Flt Permitted	1.00	
Satd. Flow (perm)	1559	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	53	84
RTOR Reduction (vph)	43	0
Lane Group Flow (vph)	94	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	14.3	
Effective Green, g (s)	14.3	
Actuated g/C Ratio	0.10	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	148	
v/s Ratio Prot	c0.06	
v/s Ratio Perm		
v/c Ratio	0.64	
Uniform Delay, d1	65.4	
Progression Factor	1.00	
Incremental Delay, d2	8.7	
Delay (s)	74.1	
Level of Service	E	
Approach Delay (s/veh)	71.7	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2040 without Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	80	1080	40	1	65	1020	55	105	35	65	60
Future Volume (vph)	15	80	1080	40	1	65	1020	55	105	35	65	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.90		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1630	3240			1630	3231		1646	1538		1646
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1630	3240			1630	3231		1646	1538		1646
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	85	1149	43	1	69	1085	59	112	37	69	64
RTOR Reduction (vph)	0	0	2	0	0	0	3	0	0	61	0	0
Lane Group Flow (vph)	0	101	1190	0	0	70	1141	0	112	45	0	64
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		9.7	55.8			8.5	54.6		11.9	11.1		8.1
Effective Green, g (s)		9.7	55.8			8.5	54.6		11.9	11.1		8.1
Actuated g/C Ratio		0.10	0.56			0.09	0.55		0.12	0.11		0.08
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		158	1807			138	1764		195	170		133
v/s Ratio Prot		c0.06	c0.37			0.04	0.35		c0.07	c0.03		0.04
v/s Ratio Perm												
v/c Ratio		0.64	0.66			0.51	0.65		0.57	0.26		0.48
Uniform Delay, d1		43.5	15.4			43.7	15.9		41.7	40.7		43.9
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		8.2	1.9			2.9	1.8		4.0	0.8		2.7
Delay (s)		51.7	17.3			46.7	17.8		45.7	41.5		46.7
Level of Service		D	B			D	B		D	D		D
Approach Delay (s/veh)			20.0				19.4			43.7		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			23.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			62.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2040 without Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	←	→
Traffic Volume (vph)	35	60
Future Volume (vph)	35	60
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	1549	
Flt Permitted	1.00	
Satd. Flow (perm)	1549	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	37	64
RTOR Reduction (vph)	59	0
Lane Group Flow (vph)	42	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.3	
Effective Green, g (s)	7.3	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	113	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.37	
Uniform Delay, d1	44.2	
Progression Factor	1.00	
Incremental Delay, d2	2.0	
Delay (s)	46.2	
Level of Service	D	
Approach Delay (s/veh)	46.4	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2040 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	630	375	110	670	125	295	145	110	100	250	145
Future Volume (vph)	115	630	375	110	670	125	295	145	110	100	250	145
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1699	1444	1630	1716	1458	1646	1733	1448	1646	1733	1473
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1699	1444	1630	1716	1458	1646	1733	1448	1646	1733	1473
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	117	643	383	112	684	128	301	148	112	102	255	148
RTOR Reduction (vph)	0	0	61	0	0	37	0	0	72	0	0	100
Lane Group Flow (vph)	117	643	322	112	684	91	301	148	40	102	255	48
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.3	60.8	89.1	11.6	60.1	73.6	28.3	39.0	50.6	13.5	24.2	36.5
Effective Green, g (s)	12.3	60.8	89.1	11.6	60.1	73.6	28.3	39.0	50.6	13.5	24.2	36.5
Actuated g/C Ratio	0.09	0.43	0.62	0.08	0.42	0.52	0.20	0.27	0.35	0.09	0.17	0.26
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	138	722	945	132	721	796	325	472	558	155	293	422
v/s Ratio Prot	c0.07	0.38	0.07	0.07	c0.40	0.01	c0.18	0.09	0.01	0.06	c0.15	0.01
v/s Ratio Perm			0.16			0.05			0.02			0.02
v/c Ratio	0.85	0.89	0.34	0.85	0.95	0.11	0.93	0.31	0.07	0.66	0.87	0.11
Uniform Delay, d1	64.4	38.0	12.9	64.8	39.9	17.9	56.3	41.3	30.6	62.5	57.8	40.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.6	13.2	0.2	36.9	21.6	0.1	31.2	0.4	0.1	9.7	23.3	0.1
Delay (s)	100.0	51.2	13.1	101.7	61.5	17.9	87.5	41.7	30.6	72.1	81.1	40.9
Level of Service	F	D	B	F	E	B	F	D	C	E	F	D
Approach Delay (s/veh)		43.4			60.3			64.1			67.5	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			56.0				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			142.9				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			92.2%				ICU Level of Service			F		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary 5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2040 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	630	375	110	670	125	295	145	110	100	250	145
Future Volume (veh/h)	115	630	375	110	670	125	295	145	110	100	250	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1723	1723	1723	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	117	643	383	112	684	128	301	148	112	102	255	148
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	138	728	900	133	727	725	324	497	531	124	286	367
Arrive On Green	0.08	0.43	0.43	0.08	0.42	0.42	0.20	0.29	0.29	0.07	0.16	0.16
Sat Flow, veh/h	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Grp Volume(v), veh/h	117	643	383	112	684	128	301	148	112	102	255	148
Grp Sat Flow(s),veh/h/ln	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Q Serve(g_s), s	9.6	47.1	18.5	9.2	51.7	6.6	24.3	9.0	7.3	8.3	19.5	11.4
Cycle Q Clear(g_c), s	9.6	47.1	18.5	9.2	51.7	6.6	24.3	9.0	7.3	8.3	19.5	11.4
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	138	728	900	133	727	725	324	497	531	124	286	367
V/C Ratio(X)	0.85	0.88	0.43	0.84	0.94	0.18	0.93	0.30	0.21	0.83	0.89	0.40
Avail Cap(c_a), veh/h	150	811	971	139	804	791	359	504	537	201	338	411
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	61.4	35.9	13.2	61.6	37.7	18.9	53.8	37.9	29.5	62.0	55.6	42.6
Incr Delay (d2), s/veh	32.5	10.5	0.3	34.3	18.0	0.1	28.7	0.3	0.2	13.5	21.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	21.5	6.0	5.1	25.1	2.3	12.7	3.9	2.6	3.9	10.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	93.9	46.5	13.5	95.9	55.6	19.0	82.5	38.2	29.7	75.5	77.3	43.3
LnGrp LOS	F	D	B	F	E	B	F	D	C	E	E	D
Approach Vol, veh/h	1143			924			561			505		
Approach Delay, s/veh	40.3			55.4			60.3			67.0		
Approach LOS	D			E			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	62.4	31.1	26.9	16.0	61.9	14.7	43.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	11.5	64.5	29.5	26.5	12.5	63.5	16.5	39.5				
Max Q Clear Time (g_c+I1), s	11.2	49.1	26.3	21.5	11.6	53.7	10.3	11.0				
Green Ext Time (p_c), s	0.0	5.3	0.3	0.9	0.0	3.6	0.1	1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	52.6											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved changes to right turn type.												

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Projected 2040 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	400	255	0	480	500	0	0	0	340	0	215
Future Volume (vph)	0	400	255	0	480	500	0	0	0	340	0	215
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3107	1361		3137	1403				2906		1340
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3107	1361		3137	1403				2906		1340
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	430	274	0	516	538	0	0	0	366	0	231
RTOR Reduction (vph)	0	0	74	0	0	145	0	0	0	0	0	189
Lane Group Flow (vph)	0	430	200	0	516	393	0	0	0	366	0	42
Confl. Peds. (#/hr)			2									
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	0%	0%	0%	11%	11%	11%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		73.0	73.0		73.0	73.0				18.0		18.0
Effective Green, g (s)		73.0	73.0		73.0	73.0				18.0		18.0
Actuated g/C Ratio		0.73	0.73		0.73	0.73				0.18		0.18
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2268	993		2290	1024				523		241
v/s Ratio Prot		0.14			0.16					c0.13		
v/s Ratio Perm			0.15			c0.28						0.03
v/c Ratio		0.19	0.20		0.23	0.38				0.70		0.17
Uniform Delay, d1		4.2	4.3		4.4	5.1				38.5		34.7
Progression Factor		1.00	1.00		0.93	1.87				1.00		1.00
Incremental Delay, d2		0.2	0.5		0.2	1.0				4.1		0.3
Delay (s)		4.4	4.7		4.3	10.5				42.5		35.0
Level of Service		A	A		A	B				D		D
Approach Delay (s/veh)		4.5			7.5			0.0			39.6	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.7									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			100.0									Sum of lost time (s) 9.0
Intersection Capacity Utilization			37.4%									ICU Level of Service A
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Projected 2040 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	400	255	0	480	500	0	0	0	340	0	215
Future Volume (veh/h)	0	400	255	0	480	500	0	0	0	340	0	215
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1654	1654	0	1668	1668				1600	0	1600
Adj Flow Rate, veh/h	0	430	0	0	516	0				366	0	231
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	7	7	0	6	6				11	0	11
Cap, veh/h	0	2219		0	2237					603	0	277
Arrive On Green	0.00	0.71	0.00	0.00	1.00	0.00				0.20	0.00	0.20
Sat Flow, veh/h	0	3226	1402	0	3253	1414				2956	0	1356
Grp Volume(v), veh/h	0	430	0	0	516	0				366	0	231
Grp Sat Flow(s),veh/h/ln	0	1572	1402	0	1585	1414				1478	0	1356
Q Serve(g_s), s	0.0	4.7	0.0	0.0	0.0	0.0				11.2	0.0	16.3
Cycle Q Clear(g_c), s	0.0	4.7	0.0	0.0	0.0	0.0				11.2	0.0	16.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2219		0	2237					603	0	277
V/C Ratio(X)	0.00	0.19		0.00	0.23					0.61	0.00	0.84
Avail Cap(c_a), veh/h	0	2219		0	2237					1049	0	481
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	0.82	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	0.0	0.0	0.0	0.0				36.2	0.0	38.2
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				1.0	0.0	6.5
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	1.4	0.0	0.0	0.1	0.0				4.1	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	5.2	0.0	0.0	0.2	0.0				37.1	0.0	44.7
LnGrp LOS		A			A					D		D
Approach Vol, veh/h		430			516						597	
Approach Delay, s/veh		5.2			0.2						40.1	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		75.1		24.9		75.1						
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		6.7		18.3		2.0						
Green Ext Time (p_c), s		3.3		2.1		4.0						
Intersection Summary												
HCM 7th Control Delay, s/veh			17.0									
HCM 7th LOS			B									
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis 2: I-5 NB Ramps & OR 214

Projected 2040 with Project
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	525	215	0	700	285	600
Future Volume (vph)	525	215	0	700	285	600
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.98		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92	0.85
Flt Protected	1.00	1.00		1.00	0.98	1.00
Satd. Flow (prot)	3079	1344		3137	2850	1277
Flt Permitted	1.00	1.00		1.00	0.98	1.00
Satd. Flow (perm)	3079	1344		3137	2850	1277
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	553	226	0	737	300	632
RTOR Reduction (vph)	0	64	0	0	237	242
Lane Group Flow (vph)	553	162	0	737	379	74
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	8%	8%	6%	6%	6%	6%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	71.8	71.8		71.8	18.3	18.3
Effective Green, g (s)	71.8	71.8		71.8	18.3	18.3
Actuated g/C Ratio	0.72	0.72		0.72	0.18	0.18
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2210	964		2252	521	233
v/s Ratio Prot	0.18			c0.23	c0.13	0.06
v/s Ratio Perm		0.12				
v/c Ratio	0.25	0.17		0.33	0.73	0.32
Uniform Delay, d1	4.8	4.5		5.2	38.5	35.4
Progression Factor	0.98	2.08		0.66	1.00	1.00
Incremental Delay, d2	0.3	0.4		0.2	5.0	0.8
Delay (s)	5.0	9.8		3.6	43.5	36.2
Level of Service	A	A		A	D	D
Approach Delay (s/veh)	6.4			3.6	41.1	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			18.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.41			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	9.9
Intersection Capacity Utilization			55.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2040 with Project
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	55	55	745	200	5	145	825	20	655	25	170	15
Future Volume (vph)	55	55	745	200	5	145	825	20	655	25	170	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3137	1368		1571	3125		1548	1558	1437	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1614	3137	1368		1571	3125		1548	1558	1437	1646
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	59	59	801	215	5	156	887	22	704	27	183	16
RTOR Reduction (vph)	0	0	0	145	0	0	2	0	0	0	129	0
Lane Group Flow (vph)	0	118	801	70	0	161	907	0	366	365	54	16
Confl. Peds. (#/hr)				2					5		2	2
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	6%	6%	6%	2%	2%	2%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		11.7	32.5	32.5		13.1	33.9		29.3	29.3	29.3	7.6
Effective Green, g (s)		11.7	32.5	32.5		13.1	33.9		29.3	29.3	29.3	7.6
Actuated g/C Ratio		0.12	0.33	0.33		0.13	0.34		0.29	0.29	0.29	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		188	1019	444		205	1059		453	456	421	125
v/s Ratio Prot		0.07	0.26			c0.10	c0.29		c0.24	0.23		0.01
v/s Ratio Perm				0.05							0.04	
v/c Ratio		0.63	0.79	0.16		0.79	0.86		0.81	0.80	0.13	0.13
Uniform Delay, d1		42.1	30.6	24.0		42.1	30.8		32.7	32.6	26.0	43.1
Progression Factor		1.07	0.69	0.36		0.81	0.98		1.00	1.00	1.00	1.00
Incremental Delay, d2		6.0	5.7	0.7		16.8	8.4		10.2	9.7	0.1	0.5
Delay (s)		51.2	26.9	9.4		50.7	38.6		42.9	42.4	26.1	43.6
Level of Service		D	C	A		D	D		D	D	C	D
Approach Delay (s/veh)			26.1				40.4			39.3		
Approach LOS			C				D			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			35.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			70.0%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2040 with Project
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗	
Traffic Volume (vph)	20	30
Future Volume (vph)	20	30
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1563	
Flt Permitted	1.00	
Satd. Flow (perm)	1563	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	32
RTOR Reduction (vph)	30	0
Lane Group Flow (vph)	24	0
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.6	
Effective Green, g (s)	7.6	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	118	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.21	
Uniform Delay, d1	43.4	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	44.2	
Level of Service	D	
Approach Delay (s/veh)	44.1	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2040 with Project
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	10	25	770	5	1	75	800	15	100	10	80	10
Future Volume (vph)	10	25	770	5	1	75	800	15	100	10	80	10
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	1.00		1.00	0.87		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1595	3133			1555	3097		1646	1471		1630
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1595	3133			1555	3097		1646	1471		1630
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	26	811	5	1	79	842	16	105	11	84	11
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	70	0	0
Lane Group Flow (vph)	0	37	816	0	0	80	857	0	105	25	0	11
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	6%	6%	6%	0%	7%	7%	7%	1%	1%	1%	2%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		5.4	55.9			9.2	59.7		10.2	16.9		1.5
Effective Green, g (s)		5.4	55.9			9.2	59.7		10.2	16.9		1.5
Actuated g/C Ratio		0.05	0.56			0.09	0.60		0.10	0.17		0.02
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		86	1751			143	1848		167	248		24
v/s Ratio Prot		0.02	0.26			c0.05	c0.28		c0.06	c0.02		0.01
v/s Ratio Perm												
v/c Ratio		0.43	0.47			0.56	0.46		0.63	0.10		0.46
Uniform Delay, d1		45.8	13.1			43.5	11.2		43.1	35.1		48.8
Progression Factor		0.45	1.79			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		2.5	0.7			4.7	0.8		7.2	0.2		13.2
Delay (s)		23.1	24.1			48.1	12.1		50.3	35.3		62.1
Level of Service		C	C			D	B		D	D		E
Approach Delay (s/veh)			24.1				15.1			43.2		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			22.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			51.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2040 with Project
AM Peak Hour



Movement	SBT	SBR
Lane Configurations	↱	
Traffic Volume (vph)	5	60
Future Volume (vph)	5	60
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.98	
Flpb, ped/bikes	1.00	
Frt	0.86	
Flt Protected	1.00	
Satd. Flow (prot)	1452	
Flt Permitted	1.00	
Satd. Flow (perm)	1452	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	5	63
RTOR Reduction (vph)	58	0
Lane Group Flow (vph)	10	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	2%	2%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.2	
Effective Green, g (s)	8.2	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	119	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.09	
Uniform Delay, d1	42.4	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	42.7	
Level of Service	D	
Approach Delay (s/veh)	45.4	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2040 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	485	140	50	430	45	325	125	95	65	95	115
Future Volume (vph)	75	485	140	50	430	45	325	125	95	65	95	115
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1636	1390	1484	1563	1328	1630	1716	1432	1630	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1636	1390	1484	1563	1328	1630	1716	1432	1630	1716	1458
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	80	516	149	53	457	48	346	133	101	69	101	122
RTOR Reduction (vph)	0	0	61	0	0	27	0	0	66	0	0	98
Lane Group Flow (vph)	80	516	88	53	457	21	346	133	35	69	101	24
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	7%	7%	7%	12%	12%	12%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.5	30.5	50.0	5.5	30.5	37.5	19.5	23.7	29.2	7.0	11.2	16.7
Effective Green, g (s)	5.5	30.5	50.0	5.5	30.5	37.5	19.5	23.7	29.2	7.0	11.2	16.7
Actuated g/C Ratio	0.06	0.36	0.59	0.06	0.36	0.44	0.23	0.28	0.34	0.08	0.13	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	100	589	894	96	562	658	375	480	569	134	226	364
v/s Ratio Prot	c0.05	c0.32	0.02	0.04	0.29	0.00	c0.21	0.08	0.00	0.04	c0.06	0.00
v/s Ratio Perm			0.04			0.01			0.02			0.01
v/c Ratio	0.80	0.88	0.10	0.55	0.81	0.03	0.92	0.28	0.06	0.51	0.45	0.07
Uniform Delay, d1	39.1	25.3	7.5	38.4	24.5	13.3	31.9	23.8	18.6	37.2	33.9	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.2	13.7	0.0	6.7	8.8	0.0	27.8	0.3	0.0	3.3	1.4	0.1
Delay (s)	74.3	39.1	7.6	45.1	33.3	13.4	59.6	24.1	18.6	40.5	35.3	27.7
Level of Service	E	D	A	D	C	B	E	C	B	D	D	C
Approach Delay (s/veh)		36.5			32.7			44.4			33.4	
Approach LOS		D			C			D			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			37.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			84.7				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			71.9%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2040 with Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	485	140	50	430	45	325	125	95	65	95	115
Future Volume (veh/h)	75	485	140	50	430	45	325	125	95	65	95	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1654	1654	1654	1586	1586	1586	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	80	516	149	53	457	48	346	133	101	69	101	122
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	12	12	12	2	2	2	2	2	2
Cap, veh/h	98	584	827	69	534	523	388	514	492	86	198	258
Arrive On Green	0.06	0.35	0.35	0.05	0.34	0.34	0.24	0.30	0.30	0.05	0.11	0.11
Sat Flow, veh/h	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Grp Volume(v), veh/h	80	516	149	53	457	48	346	133	101	69	101	122
Grp Sat Flow(s),veh/h/ln	1576	1654	1402	1511	1586	1344	1641	1723	1427	1641	1723	1460
Q Serve(g_s), s	3.6	21.1	3.5	2.5	19.3	1.6	14.7	4.2	3.6	3.0	4.0	5.4
Cycle Q Clear(g_c), s	3.6	21.1	3.5	2.5	19.3	1.6	14.7	4.2	3.6	3.0	4.0	5.4
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	98	584	827	69	534	523	388	514	492	86	198	258
V/C Ratio(X)	0.82	0.88	0.18	0.77	0.86	0.09	0.89	0.26	0.21	0.80	0.51	0.47
Avail Cap(c_a), veh/h	121	702	926	116	673	641	445	874	791	217	635	629
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	33.3	21.9	6.8	34.0	22.2	13.9	26.6	19.2	16.6	33.7	29.9	26.6
Incr Delay (d2), s/veh	28.7	11.2	0.1	16.6	8.8	0.1	18.3	0.3	0.2	15.7	2.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	9.4	0.9	1.2	8.0	0.5	7.4	1.6	1.1	1.5	1.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.0	33.1	6.9	50.5	31.0	14.0	44.8	19.4	16.9	49.4	32.0	27.9
LnGrp LOS	E	C	A	D	C	B	D	B	B	D	C	C
Approach Vol, veh/h	745			558			580			292		
Approach Delay, s/veh	30.9			31.4			34.1			34.4		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	29.9	21.5	12.8	9.0	28.7	8.3	26.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	30.5	19.5	26.5	5.5	30.5	9.5	36.5				
Max Q Clear Time (g_c+I1), s	4.5	23.1	16.7	7.4	5.6	21.3	5.0	6.2				
Green Ext Time (p_c), s	0.0	2.3	0.3	0.9	0.0	2.1	0.0	1.1				

Intersection Summary

HCM 7th Control Delay, s/veh 32.4
HCM 7th LOS C

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

HCM Signalized Intersection Capacity Analysis

1: I-5 SB Ramps & OR 219/OR 214

Projected 2040 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (vph)	0	755	500	0	970	520	0	0	0	770	0	390
Future Volume (vph)	0	755	500	0	970	520	0	0	0	770	0	390
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3228	1413		3260	1458				3131		1423
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3228	1413		3260	1458				3131		1423
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	795	526	0	1021	547	0	0	0	811	0	411
RTOR Reduction (vph)	0	0	209	0	0	218	0	0	0	0	0	66
Lane Group Flow (vph)	0	795	317	0	1021	329	0	0	0	811	0	345
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Perm		NA	Perm				Prot		Perm
Protected Phases		2			6					4		
Permitted Phases			2			6						4
Actuated Green, G (s)		60.2	60.2		60.2	60.2				30.8		30.8
Effective Green, g (s)		60.2	60.2		60.2	60.2				30.8		30.8
Actuated g/C Ratio		0.60	0.60		0.60	0.60				0.31		0.31
Clearance Time (s)		4.5	4.5		4.5	4.5				4.5		4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		1943	850		1962	877				964		438
v/s Ratio Prot		0.25			0.31					0.26		
v/s Ratio Perm			0.22			0.23						0.24
v/c Ratio		0.41	0.37		0.52	0.38				0.84		0.79
Uniform Delay, d1		10.5	10.2		11.5	10.2				32.3		31.6
Progression Factor		1.00	1.00		0.63	0.01				1.00		1.00
Incremental Delay, d2		0.6	1.3		0.7	0.9				6.7		9.1
Delay (s)		11.1	11.5		8.0	1.0				39.0		40.7
Level of Service		B	B		A	A				D		D
Approach Delay (s/veh)		11.3			5.6			0.0			39.6	
Approach LOS		B			A			A			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.5		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			62.9%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: I-5 SB Ramps & OR 219/OR 214

Projected 2040 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↘↘		↗
Traffic Volume (veh/h)	0	755	500	0	970	520	0	0	0	770	0	390
Future Volume (veh/h)	0	755	500	0	970	520	0	0	0	770	0	390
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1709	1709	0	1723	1723				1709	0	1709
Adj Flow Rate, veh/h	0	795	0	0	1021	0				811	0	411
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	0	2	2				3	0	3
Cap, veh/h	0	1921		0	1937					1005	0	461
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	3333	1448	0	3359	1460				3158	0	1448
Grp Volume(v), veh/h	0	795	0	0	1021	0				811	0	411
Grp Sat Flow(s),veh/h/ln	0	1624	1448	0	1637	1460				1579	0	1448
Q Serve(g_s), s	0.0	13.2	0.0	0.0	0.0	0.0				23.6	0.0	27.0
Cycle Q Clear(g_c), s	0.0	13.2	0.0	0.0	0.0	0.0				23.6	0.0	27.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1921		0	1937					1005	0	461
V/C Ratio(X)	0.00	0.41		0.00	0.53					0.81	0.00	0.89
Avail Cap(c_a), veh/h	0	1921		0	1937					1121	0	514
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	0.64	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.0	0.0	0.0	0.0	0.0				31.3	0.0	32.4
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.7	0.0				4.0	0.0	16.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.0	0.0	0.2	0.0				9.3	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	11.7	0.0	0.0	0.7	0.0				35.3	0.0	48.9
LnGrp LOS	B			A			D			D		
Approach Vol, veh/h	795			1021			1222					
Approach Delay, s/veh	11.7			0.7			39.9					
Approach LOS	B			A			D					
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	63.7			36.3			63.7					
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+l1), s	15.2			29.0			2.0					
Green Ext Time (p_c), s	6.7			2.8			9.8					
Intersection Summary												
HCM 7th Control Delay, s/veh	19.3											
HCM 7th LOS	B											
Notes												
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

2: I-5 NB Ramps & OR 214

Projected 2040 with Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑	↘↙	↗
Traffic Volume (vph)	1310	225	0	1100	390	710
Future Volume (vph)	1310	225	0	1100	390	710
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	5.4	5.4
Lane Util. Factor	0.95	1.00		0.95	0.97	0.91
Frpb, ped/bikes	1.00	0.97		1.00	0.99	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.93	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3228	1403		3260	2979	1327
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3228	1403		3260	2979	1327
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1409	242	0	1183	419	763
RTOR Reduction (vph)	0	99	0	0	24	24
Lane Group Flow (vph)	1409	143	0	1183	777	357
Confl. Peds. (#/hr)		4				
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	NA	Perm		NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases		2				
Actuated Green, G (s)	59.2	59.2		59.2	30.9	30.9
Effective Green, g (s)	59.2	59.2		59.2	30.9	30.9
Actuated g/C Ratio	0.59	0.59		0.59	0.31	0.31
Clearance Time (s)	4.5	4.5		4.5	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1910	830		1929	920	410
v/s Ratio Prot	c0.44			0.36	0.26	c0.27
v/s Ratio Perm		0.10				
v/c Ratio	0.74	0.17		0.61	0.84	0.87
Uniform Delay, d1	14.8	9.3		13.1	32.3	32.7
Progression Factor	1.05	1.68		1.00	1.00	1.00
Incremental Delay, d2	2.2	0.4		1.5	7.2	17.9
Delay (s)	17.7	16.0		14.5	39.5	50.5
Level of Service	B	B		B	D	D
Approach Delay (s/veh)	17.4			14.5	43.0	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)		24.1		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.78				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		9.9
Intersection Capacity Utilization		79.4%		ICU Level of Service		D
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2040 with Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	50	80	1085	585	15	325	870	45	700	50	280	40
Future Volume (vph)	50	80	1085	585	15	325	870	45	700	50	280	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	3260	1425		1630	3233		1564	1578	1453	1646
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		1630	3260	1425		1630	3233		1564	1578	1453	1646
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	84	1142	616	16	342	916	47	737	53	295	42
RTOR Reduction (vph)	0	0	0	271	0	0	3	0	0	0	201	0
Lane Group Flow (vph)	0	137	1142	345	0	358	960	0	391	399	94	42
Confl. Peds. (#/hr)				1		1			2		1	1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases				2							8	
Actuated Green, G (s)		15.7	45.0	45.0		26.0	55.3		47.2	47.2	47.2	14.3
Effective Green, g (s)		15.7	45.0	45.0		26.0	55.3		47.2	47.2	47.2	14.3
Actuated g/C Ratio		0.10	0.30	0.30		0.17	0.37		0.31	0.31	0.31	0.10
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		170	978	427		282	1191		492	496	457	156
v/s Ratio Prot		0.08	c0.35			c0.22	0.30		0.25	c0.25		0.03
v/s Ratio Perm				0.24							0.06	
v/c Ratio		0.81	1.17	0.81		1.27	0.81		0.79	0.80	0.20	0.27
Uniform Delay, d1		65.7	52.5	48.5		62.0	42.5		47.0	47.2	37.7	63.0
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		23.5	86.6	15.1		146.2	5.9		8.6	9.2	0.2	0.9
Delay (s)		89.2	139.1	63.6		208.2	48.4		55.6	56.4	37.9	63.9
Level of Service		F	F	E		F	D		E	E	D	E
Approach Delay (s/veh)			111.0				91.7			51.1		
Approach LOS			F				F			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			89.2				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			99.5%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Evergreen Rd & OR 214

Projected 2040 with Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	🚗➡️	
Traffic Volume (vph)	50	80
Future Volume (vph)	50	80
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1559	
Flt Permitted	1.00	
Satd. Flow (perm)	1559	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	53	84
RTOR Reduction (vph)	43	0
Lane Group Flow (vph)	94	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	14.3	
Effective Green, g (s)	14.3	
Actuated g/C Ratio	0.10	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	148	
v/s Ratio Prot	c0.06	
v/s Ratio Perm		
v/c Ratio	0.64	
Uniform Delay, d1	65.4	
Progression Factor	1.00	
Incremental Delay, d2	8.7	
Delay (s)	74.1	
Level of Service	E	
Approach Delay (s/veh)	71.7	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2040 with Project
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	90	1120	40	1	65	1060	55	105	35	65	60
Future Volume (vph)	15	90	1120	40	1	65	1060	55	105	35	65	60
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.90		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1630	3240			1630	3232		1646	1549		1646
Flt Permitted		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (perm)		1630	3240			1630	3232		1646	1549		1646
Peak-hour factor, PHF	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	16	96	1191	43	1	69	1128	59	112	37	69	64
RTOR Reduction (vph)	0	0	2	0	0	0	3	0	0	60	0	0
Lane Group Flow (vph)	0	112	1232	0	0	70	1184	0	112	46	0	64
Confl. Peds. (#/hr)		2		1		1		2	1		1	2
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Prot	NA		Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases												
Actuated Green, G (s)		11.6	53.8			8.5	50.7		11.9	13.1		8.1
Effective Green, g (s)		11.6	53.8			8.5	50.7		11.9	13.1		8.1
Actuated g/C Ratio		0.12	0.54			0.09	0.51		0.12	0.13		0.08
Clearance Time (s)		4.0	4.5			4.0	4.5		4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		189	1743			138	1638		195	202		133
v/s Ratio Prot		c0.07	c0.38			0.04	0.37		c0.07	c0.03		0.04
v/s Ratio Perm												
v/c Ratio		0.59	0.71			0.51	0.72		0.57	0.23		0.48
Uniform Delay, d1		42.0	17.2			43.7	19.2		41.7	38.9		43.9
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		4.9	2.4			2.9	2.8		4.0	0.6		2.7
Delay (s)		46.9	19.7			46.7	22.0		45.7	39.5		46.7
Level of Service		D	B			D	C		D	D		D
Approach Delay (s/veh)			21.9				23.4			42.7		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay (s/veh)			25.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			63.9%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Oregon Way & OR 214

Projected 2040 with Project
PM Peak Hour



Movement	SBT	SBR
Lane Configurations	↓	→
Traffic Volume (vph)	35	75
Future Volume (vph)	35	75
Ideal Flow (vphpl)	1750	1750
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	1536	
Flt Permitted	1.00	
Satd. Flow (perm)	1536	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	37	80
RTOR Reduction (vph)	73	0
Lane Group Flow (vph)	44	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	1%	1%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.3	
Effective Green, g (s)	9.3	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	142	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.31	
Uniform Delay, d1	42.4	
Progression Factor	1.00	
Incremental Delay, d2	1.3	
Delay (s)	43.6	
Level of Service	D	
Approach Delay (s/veh)	44.7	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2040 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	655	375	125	700	125	295	160	120	100	260	160
Future Volume (vph)	130	655	375	125	700	125	295	160	120	100	260	160
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1699	1444	1630	1716	1458	1646	1733	1448	1646	1733	1473
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1699	1444	1630	1716	1458	1646	1733	1448	1646	1733	1473
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	133	668	383	128	714	128	301	163	122	102	265	163
RTOR Reduction (vph)	0	0	57	0	0	36	0	0	79	0	0	93
Lane Group Flow (vph)	133	668	326	128	714	92	301	163	43	102	265	70
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.5	62.8	90.4	12.5	62.8	76.4	27.6	39.0	51.5	13.6	25.0	37.5
Effective Green, g (s)	12.5	62.8	90.4	12.5	62.8	76.4	27.6	39.0	51.5	13.6	25.0	37.5
Actuated g/C Ratio	0.09	0.43	0.62	0.09	0.43	0.52	0.19	0.27	0.35	0.09	0.17	0.26
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	138	731	939	139	738	808	311	463	555	153	296	424
v/s Ratio Prot	c0.08	0.39	0.07	0.08	c0.42	0.01	c0.18	0.09	0.01	0.06	c0.15	0.01
v/s Ratio Perm			0.16			0.05			0.02			0.03
v/c Ratio	0.96	0.91	0.35	0.92	0.97	0.11	0.97	0.35	0.08	0.67	0.90	0.17
Uniform Delay, d1	66.5	39.0	13.5	66.2	40.6	17.6	58.7	43.2	31.4	64.0	59.2	42.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	65.1	15.9	0.2	52.9	25.0	0.1	41.9	0.5	0.1	10.5	27.2	0.2
Delay (s)	131.5	54.9	13.7	119.1	65.6	17.7	100.6	43.7	31.5	74.4	86.3	42.2
Level of Service	F	D	B	F	E	B	F	D	C	E	F	D
Approach Delay (s/veh)		50.2			66.3			70.4			70.5	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			61.9				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			145.9				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			95.4%				ICU Level of Service			F		
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th Signalized Intersection Summary 5: Settlemier St/Boones Ferry Rd & OR 214

Projected 2040 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	655	375	125	700	125	295	160	120	100	260	160
Future Volume (veh/h)	130	655	375	125	700	125	295	160	120	100	260	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1723	1723	1723	1736	1736	1736	1736	1736	1736
Adj Flow Rate, veh/h	133	668	383	128	714	128	301	163	122	102	265	163
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	140	739	901	141	745	739	314	492	534	123	291	374
Arrive On Green	0.09	0.43	0.43	0.09	0.43	0.43	0.19	0.28	0.28	0.07	0.17	0.17
Sat Flow, veh/h	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Grp Volume(v), veh/h	133	668	383	128	714	128	301	163	122	102	265	163
Grp Sat Flow(s),veh/h/ln	1628	1709	1448	1641	1723	1460	1654	1736	1438	1654	1736	1471
Q Serve(g_s), s	11.8	52.8	19.7	11.2	58.3	6.9	26.2	10.8	8.5	8.8	21.7	13.5
Cycle Q Clear(g_c), s	11.8	52.8	19.7	11.2	58.3	6.9	26.2	10.8	8.5	8.8	21.7	13.5
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	140	739	901	141	745	739	314	492	534	123	291	374
V/C Ratio(X)	0.95	0.90	0.43	0.91	0.96	0.17	0.96	0.33	0.23	0.83	0.91	0.44
Avail Cap(c_a), veh/h	140	772	929	141	778	767	314	492	534	188	317	396
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	65.9	38.4	14.1	65.7	39.9	19.4	58.2	41.1	31.5	66.3	59.3	45.4
Incr Delay (d2), s/veh	60.2	13.7	0.3	48.5	22.2	0.1	40.0	0.4	0.2	16.8	27.5	0.8
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	7.3	24.7	6.5	6.6	29.0	2.4	14.4	4.7	3.0	4.3	11.8	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	126.1	52.1	14.4	114.1	62.1	19.5	98.3	41.5	31.7	83.1	86.8	46.2
LnGrp LOS	F	D	B	F	E	B	F	D	C	F	F	D
Approach Vol, veh/h	1184		970				586		530			
Approach Delay, s/veh	48.2		63.4				68.6		73.6			
Approach LOS	D		E				E		E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	67.2	32.0	28.8	17.0	67.2	15.2	45.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	65.5	27.5	26.5	12.5	65.5	16.5	37.5				
Max Q Clear Time (g_c+I1), s	13.2	54.8	28.2	23.7	13.8	60.3	10.8	12.8				
Green Ext Time (p_c), s	0.0	4.5	0.0	0.6	0.0	2.4	0.1	1.3				
Intersection Summary												
HCM 7th Control Delay, s/veh			60.5									
HCM 7th LOS			E									
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved changes to right turn type.												