Exhibit E: Transportation Impact Analysis

lancaster mobley

2115 Molalla Road

Transportation Impact Analysis

Woodburn, Oregon

Date:
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Prepared for:
I&E Construction

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Executive Summary

1. A gas station with convenience store and car wash is planned at 2115 Molalla Road (OR 211) in Woodburn, Oregon. Construction of the development is expected to be completed by the year 2025.
2. Four driveways are proposed for the site as shown in the attached site plan, but only one would connect to Molalla Road (OR 211). A driveway on the east side of the site would connect to the highway access for the Woodburn Place Apartments East. The other driveways connect to the apartments north and west of the site.
3. The primary trip generation is estimated at 76 morning peak hour, 52 evening peak hour, and 654 daily trips that will be added to the network.
4. A review of the most recent five years of available crash data yielded the following conclusions:
    - The signalized highway intersection (OR 214/OR 211 & OR 99E) has a calculated crash rate that exceeds the 90th percentile rates identified by ODOT for similar types of intersections and is listed in the worst 5 percent of the ODOT SPIS list. Although capacity improvements at the signalized intersection are listed in the TSP and in the TIAs prepared for nearby developments, these projects are unlikely to change the crash rate and would not be effective as safety mitigation. Since no consistent crash patterns were identified at the intersection, no safety mitigation is recommended.
    - The Safeway shopping center driveway access on Molalla Road (OR 211) has a crash rate that exceeds the 90th percentile rates identified by ODOT for similar types of intersections. Access control to address crashes at the driveway to the Safeway shopping center would need to be initiated by ODOT and should not be the responsibility of other development in the area.
    - At the other study intersections, no significant trends or crash patterns were identified, and no safety mitigation is recommended per the crash data analysis.
5. Based on the sight distance analysis, adequate sight distance is available for the planned site access intersections along Molalla Road (OR 211). No sight distance mitigation is necessary or recommended.
6. Left-turn lanes are already present on Molalla Road (OR 211) at most of the study intersections; the only locations currently without a left-turn lane are westbound Molalla Road (OR 211) at the Safeway shopping center driveway and eastbound Molalla Road (OR 211) at the future access to Woodburn Place West apartments. Left-turn lane warrants are projected to be met at each location under both background and buildout scenarios. Because the warrants are met regardless of whether or not the proposed development is constructed, no mitigation at this intersection is recommended as part of the proposed development.
7. Preliminary traffic signal warrants were examined for all unsignalized study intersections. None of the intersections are projected to meet signal warrants under any analysis scenario.
8. All study area intersections are expected to meet mobility standards for all analysis scenarios except for the signalized intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E). This intersection is expected to operate with a v/c ratio over 0.90 during the evening peak hour under both year 2025 background and year 2025 buildout scenarios, which exceeds the ODOT mobility target. The

proposed development will change the overall intersection v/c ratio and delay. Recommended mitigation is detailed below.

9. In general, changes in 95th percentile queuing between the year 2025 background and year 2025 buildout scenarios are anticipated to be small. Queues for the westbound left-turn movement on Molalla Road (OR 211) at the traffic signal with N Pacific Highway (OR 99E) are anticipated to spill out of the turn lane into the adjacent through lane and past the entrance to the Safeway shopping center during the evening in both the year 2025 background and year 2025 buildout scenarios. As a result, queues on the northbound Safeway access are expected to extend into the parking lot during the evening in both future scenarios. Improvements at the signalized intersection are recommended below. No mitigation for the shopping center access is recommended because drivers have alternate options for exiting the shopping center.

10. Two potential mitigation options were evaluated to address the expected deficiencies at the intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E) with the following findings and recommendations:

    - The options considered include: 1) the Woodburn TSP Project R14, which would add a second southbound left-turn lane on OR 99E and a corresponding eastbound receiving lane on OR 211, and 2) a separate westbound right-turn lane as conditioned for the Woodburn Place West apartments.
    - Both mitigation options result in a small improvement in operations during evening peak because neither the southbound left turn nor the westbound right turn is a critical movement under either future scenario. However, the addition of a westbound right-turn lane would improve intersection operations to a greater extent in the morning peak hour compared with the dual southbound left-turn lanes. The options result in similar changes in queues compared with the current configuration.
    - Given these findings, the westbound right-turn lane appears to be equally or more effective than the dual southbound left-turn lanes and it is likely to have a lower cost and fewer impacts than the TSP improvement. Therefore, the westbound right-turn lane is recommended as the preferred intersection improvement. The proposed development is estimated to contribute 1.7 percent of the total evening peak hour traffic traveling through the intersection and 3.7 percent of the traffic in the existing westbound through-right lane under year 2025 buildout conditions. This traffic estimate should be considered in the proportionate share contribution for the project.

Project Description

Introduction

A gas station with convenience store and car wash is planned at 2115 Molalla Road (OR 211) in Woodburn, Oregon. Construction of the development is expected to be completed by the year 2025.

This Transportation Impact Analysis (TIA) report examines the impacts of the proposed development on the transportation system in the vicinity of the project site. Its purpose is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the proposed development and to determine any mitigation that may be necessary to do so.

Parameters of the TIA were scoped with the City of Woodburn and ODOT. The resulting study area includes intersections that are under both jurisdictions, including:

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)
2. Molalla Road (OR 211) & Safeway Access
3. Molalla Road (OR 211) & June Road/Woodburn Place West
4. Molalla Road (OR 211) & Primary Site Access
5. Molalla Road (OR 211) & Woodburn Place East
6. Molalla Road (OR 211) & Cooley Road

All supporting data and calculations are included in the appendices to this report.

Location Description

The property located at 2115 Molalla Road was recently annexed into the Woodburn city limits with General Commercial (CG) zoning. The 0.93-acre property shown in red in Figure 1 comprises three tax lots (051W09B 1000, 1100, 1200). A site plan is included in Appendix A.

Four driveways are proposed for the site as shown in the attached site plan, but only one would connect directly to Molalla Road (OR 211).

1. A recently constructed access to the site from the highway is located on the west edge of the site approximately 330 feet east of the site access for Woodburn Place Apartments West and 160 feet west of the site access for Woodburn Place Apartments East.
2. A driveway on the east side of the site would connect to the highway access for the Woodburn Place Apartments East.
3. A driveway on the west side of the site would connect to Woodburn Place Apartments West.
4. A driveway on the north side of the site would connect to Woodburn Place Apartments East.

Figure 1: Project Location and Access (Marion County GIS)

Vicinity Streets

The study area includes roadways under state, county, and city jurisdiction that are expected to be impacted by the proposed development. Table 1 describes each of the vicinity roadways.

Table 1: Vicinity Roadway Descriptions

Street Name	Functional Classification	Travel Lanes	Speed (mph)	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
Jurisdiction: ODOT						
Pacific Highway OR 99E	Regional Hwy Major Arterial (City)	2-3	35-55	Partial	Prohibited	Partial
Molalla Road OR 211	District Hwy Major Arterial (City)	2-5	30-35	Partial Both Sides	Prohibited	Yes
Mt. Hood Avenue OR 214	District Hwy Major Arterial (City)	2-5	30-35	Both Sides	Prohibited	Yes
Jurisdiction: Marion County						
Cooley Road	Local Street	2	40	Partial	Prohibited	None
Jurisdiction: City of Woodburn						
June Way	Local Street	2	25	Both Sides	Permitted	None

Study Intersections

Based on coordination with agency staff, five existing intersections and one future intersection were identified for analysis. A summarized description of the study intersections is provided in Table 2.

Table 2: Study Intersection Descriptions

	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)	Four Legs	Signalized	Protected Lefts
2	Molalla Road (OR 211) & Safeway Access	Three Legs	Stop-Controlled	NB Stop
3	Molalla Road (OR 211) & June Road/Woodburn Place West	Four Legs [1]	Stop-Controlled	NB/SB Stop
4	Molalla Road (OR 211) & Primary Site Access	Three Legs	Stop-Controlled	SB Stop
5	Molalla Road (OR 211) & Woodburn Place East	Three Legs	Stop-Controlled	SB Stop
6	Molalla Road (OR 211) & Cooley Road	Four Legs [2]	Stop-Controlled	NB/SB Stop

Notes:

1. *The north leg will be constructed by the Woodburn Place West Project.*
2. *The north leg is a private driveway.*

A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.

Bicycle and Pedestrian Access

Mollala Road (OR 211) currently has gaps in the sidewalk and bicycle network. Sidewalk gaps include a segment on the north side between June Way and OR 99E and a segment on the south side between June Way and the shopping center to the west. Bicycle system gaps include a segment on the north side of the highway between June Way and OR 99E and a segment on the south side between June Way and the shopping center to the west.

According to the final decision for the Woodburn Place West apartments,[1] the development will be constructing frontage improvements along the north side of Molalla Road (OR 211) that will include a minimum 6-foot bike lane, 8-foot planter strip, and 8-foot sidewalk. Additionally, the Condition T-BP1.a indicates the developer shall "fill the highway south sidewalk gap within the block face between June Way and OR 99E."

[1] Woodburn Planning Commission Final Decision, CU 22-01 & DR 22-08, September 8, 2022.

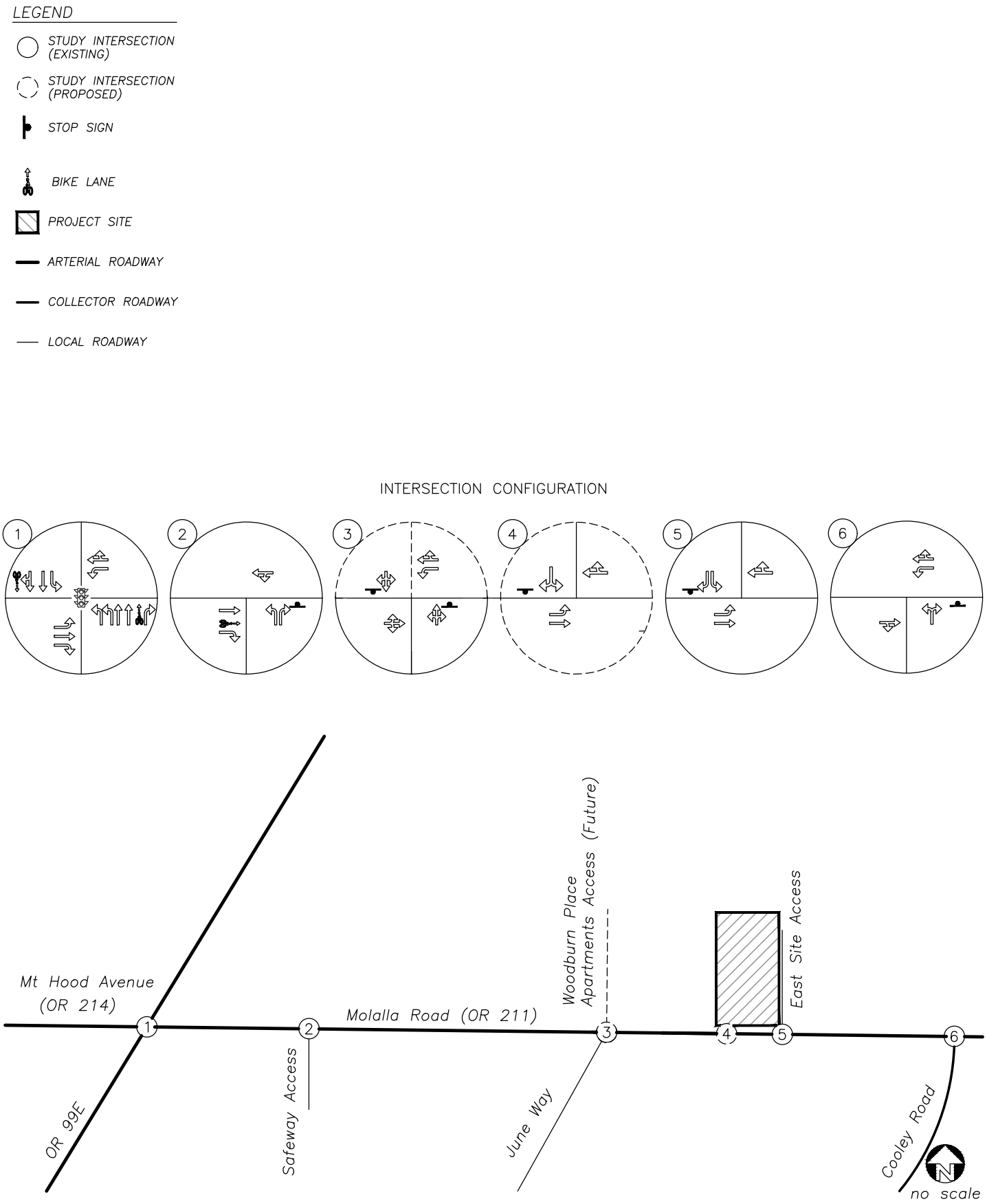
With these improvements, the sidewalk on the north side of Molalla Road (OR 211) would be completed from the apartments to the intersection with OR 99E. The gap in the bicycle system would remain.

Transit

Woodburn Transit System (WTS) typically provides fixed route and express service along OR 214, OR 99E, downtown and through some of the nearby neighborhoods. The closest stops to the proposed development are located at Mt Hood Avenue (OR 214) & OR 99E, approximately 1,800 feet west of the site. The summarized description of the transit line is shown in Table 3.

Table 3: Transit Line Description

Transit Line (TriMet)	Service Area	Day of Week	Service Times	Typical Headways (Minutes)	Nearest Stops
Express Loop	Downtown, Commercial Area Nearby OR 214 & 99E, and OR 214 & Evergreen Road	M - F	8:00 AM - 06:00 PM	60	Mt Hood Avenue (OR 214)/ OR 99E
		Saturday	9:00 AM - 06:00 PM	60	
		Sunday	9:00 AM - 03:00 PM	60	
Woodburn City Loop		M - F	8:00 AM - 06:00 PM	60	
		Saturday	9:00 AM - 06:00 PM	60	
		Sunday	9:00 AM - 03:00 PM	60	



VICINITY MAP

Lane Configurations & Traffic Control

Figure 2

2115 Molalla Road

10/3/2023

Site Trips

Trip Generation

To estimate the number of trips that could be generated by the proposed development, trip rates from the *Trip Generation Manual* [2] were used.

The site had previously been developed with one single-family home. That home has since been demolished with the development of the Woodburn Place Apartments to the east and west of the site. While the trips associated with this prior use will not be present in any traffic counts collected for the TIA, it is important to account for the trips when considering the SDC calculation. Therefore, data from the land use code 210, Single Family Detached Housing is used to estimate the site's prior use trip generation based on the number of dwelling units (DU).

The proposed development consists of a gas station with convenience store and car wash. The 11th edition of the *Trip Generation Manual* does not contain a code that includes all three uses together as a single land use; the last manual to contain a land use code (946) for this use is the 9th Edition.

The approach to estimating trip generation initially considered using land use code 945, Convenience Store/Gas Station, based on the number of vehicle fueling positions (VFPs) for stores with 4,000 to 5,500 SF of gross floor area (GFA)[3] and land use code 948, Automated Car Wash, based on the number of car wash tunnels. However, this approach has several shortcomings. First, data for the car wash is only available for the evening peak hour; therefore, the car wash trips would not be addressed during either the morning peak hour or for the day. Second, many car wash users at a facility like the one proposed also purchase gas and/or use the convenience store but the internal trip capture rates are not available and typical retail capture rates are likely to underestimate the internal rates.

Therefore, an alternative approach is proposed for developing trip generation. Data from the 9th Edition of the `*Trip Generation Manual* for land use code 946, Gasoline/Service Station with Convenience Market and Car Wash, was compared with 945, Gasoline/Service Station w/Convenience Market, to understand how the addition of the car wash to the site facilities affected trip generation rates. The rates for both land uses are based on the number of VFPs. The results are summarized in Table 4.

[2] Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition, 2021.

[3] Vehicle fueling positions is recommended as the variable as the fuel pumps are prominently positioned closest to the roadway while the convenience store is located behind the pumps.

Table 4: Trip Rate Comparison

ITE Code	Morning Peak Hour	Evening Peak Hour	Daily Trips
945 - Gasoline Station with Convenience	10.16	13.38	162.78
946 - Gasoline Station with Convenience & Car Wash	11.84	13.86	152.84
Estimated % Trip Increase	17%	4%	-6%
Proposed % Trip Increase	17%	4%	11%

Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 9th Edition, 2012.

As shown in Table 4, comparing the trip rates with and without a car wash shows that trip generation rates with the car wash were 17 percent higher in the morning and 4 percent higher in the evening; however, the daily rate was 6 percent lower.

To estimate the trip generation for the site, we propose applying the calculated percentage trip increases from Table 4 to the 11th Edition trip generation estimates for a gas station + convenience store for the morning and evening peak hours. An average of the peak hour percentage trip increase is proposed for application to the daily trip estimates. This approach allows us to estimate the effects of the car wash throughout the day instead of just during the evening peak hour while using the more detailed trip rates from the newest edition of the *Trip Generation Manual*.

Total Site Trips

The total site trips using this approach are summarized in Table 5. The results are 190 morning peak hour, 143 evening peak hour, and 1,712 daily trips.

Internal Trips

The proposed facility will be surrounded on three sides and have multiple shared accesses with the Woodburn Place Apartments, which include 489 housing units. Some trips between the apartments and the retail/service facilities are anticipated to occur. These internal trips will not utilize the public roadways and need to be deducted from the total site trips. To estimate the internal trip capture rate, the methodology outlined in the NCHRP Report 684[4] was applied. The results are an internal trip deduction of 2 trips (1 percent) during the morning peak hour and 25 trips (17 percent) during the evening peak hour. To estimate the daily internal trips, an average of the morning and evening capture rates was applied for a deduction of 154 daily trips (9 percent).

As shown in Table 5, the external site trips are estimated at 188 morning peak hour, 118 evening peak hour and 1,558 daily trips.

Pass-By & Diverted Trips

The proposed development is expected to attract pass-by and diverted trips to the site. Pass-by trips are trips that leave the adjacent roadway to patronize an establishment and then continue in their original direction of

[4] Transportation Research Board. NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, 2011.

travel. Diverted trips are similar to pass-by trips except they divert from a nearby roadway not adjacent to the site to patronize an establishment use before continuing in their original direction of travel.

The newest ITE *Trip Generation Manual* includes updates to the pass-by rates. The average rates for sites with between 2 and 8 VFPs are 60 percent for the morning peak period and 56 percent for the evening peak period. The daily pass-by rate was assumed to be the average (58 percent) of the peak period rates. The resulting pass-by trips are estimated at 112 morning peak hour, 66 evening peak hour, and 904 weekday trips.

Primary Trips

As shown in Table 5, the primary trip generation is estimated at 76 morning peak hour, 52 evening peak hour, and 654 daily trips that will be added to the network.

Table 5: Trip Generation

ITE Code	Intensity	Morning Peak Hour			Evening Peak Hour			Daily Trips
		In	Out	Total	In	Out	Total	
Prior Land Use								
210 - Single-Family Detached Housing	1 DU	0	1	1	1	0	1	10
Proposed Land Use								
945 - Convenience Store/Gas Station	6 VFPs	81	81	162	69	68	137	1,542
Additional Traffic for Car Wash		*17%*			*4%*			*11%*
		14	14	28	3	3	6	170
Total Site Trips		95	95	190	72	71	143	1,712
Internal Trips between Site & Adjacent Apartments		*1%*			*17%*			*9%*
		-1	*-1*	*-2*	*-7*	*-18*	*-25*	*-154*
External Site Trips		94	94	188	65	53	118	1,558
Pass-By		*60%*			*56%*			*58%*
		-56	*-56*	*-112*	*-33*	*-33*	*-66*	*-904*
Primary Trips		38	38	76	32	20	52	654

Trip Distribution

A preliminary directional distribution of the site trips to and from the proposed development was estimated based on other approved developments, locations of likely destinations, and locations of major transportation facilities in the site vicinity.

Primary Trips

Because the proposed development is a "convenience" service, primary trips are anticipated to be short in length and to come primarily from nearby neighborhoods; thus, dissipating quickly from the arterial network. The following trip distribution was applied to primary trips:

- 25 percent to/from the east on Molalla Road (OR 211)

- 10 percent to/from south on Cooley Road
- 15 percent to/from east on Woodburn-Estacada Highway (OR 211)
- 30 percent to/from the west on Mt Hood Avenue (OR 214)
- 15 percent to/from local streets between OR 99E and 5th Street
- 10 percent to/from 5th Street
- 5 percent to/from west of 5th Street
- 15 percent to/from the north on N Pacific Highway (OR 99E)
- 30 percent to/from the south on N Pacific Highway (OR 99E)
- 5 percent to/from the local streets between OR 214/211 and Hardcastle Avenue
- 5 percent to/from east/west on Hardcastle Avenue
- 15 percent to/from the east/west on Young Street
- 5 percent to/from south on N Pacific Highway (OR 99E)

This trip distribution pattern differs from those applied to the adjacent apartments because it is a commercial development rather than residential. It is the first gas station/convenience store that anyone traveling to/from the east on OR 211 will encounter, which is why the allocation to/from the east was higher, 25 percent versus 15 percent for the apartments. As a convenience service, the remainder of the traffic was assumed to serve primarily the eastern half of the Woodburn community. More of the community lies to the south of the highway than to the north, which is why more traffic is assumed to be traveling to/from the south than the to/from the north compared with the apartments, which split the north/south traffic.

Pass-By Trips

The following trip distribution was applied for pass-by and diverted trips:

- Approximately 50 percent of the pass-by traffic will be traveling on Molalla Road (OR 211) with the directional split based on existing patterns
  - Morning peak hour: 28 percent westbound and 22 percent eastbound
  - Evening peak hour: 23 percent westbound and 27 percent eastbound
- Approximately 50 percent of the pass-by traffic will divert from N Pacific Highway (OR 99E) or Mt Hood Avenue (OR 214) with the diversion based on existing patterns
  - Morning peak hour: 10 percent eastbound on OR 214, 24 percent northbound on OR 99E, and 22 percent southbound on OR 99E
  - Evening peak hour: 15 percent eastbound on OR 214, 12 percent northbound on OR 99E, and 23 percent southbound on OR 99E

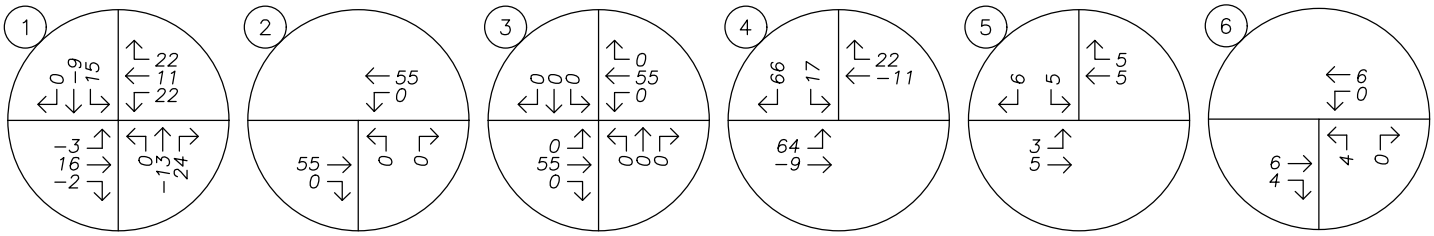
Trip Assignment

The trip distribution and assignment for the total site trips generated during the morning and evening peak hours are shown in Figure 3. A breakdown of site trips by type of trip is included in Appendix B.

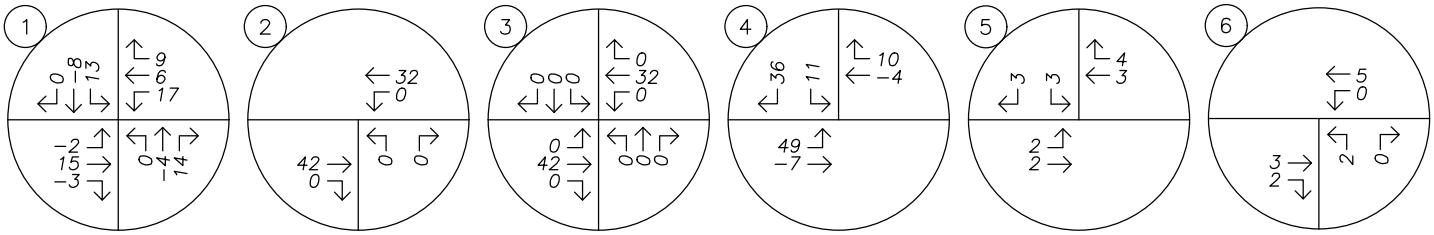
XX% PERCENT OF PROJECT TRIPS

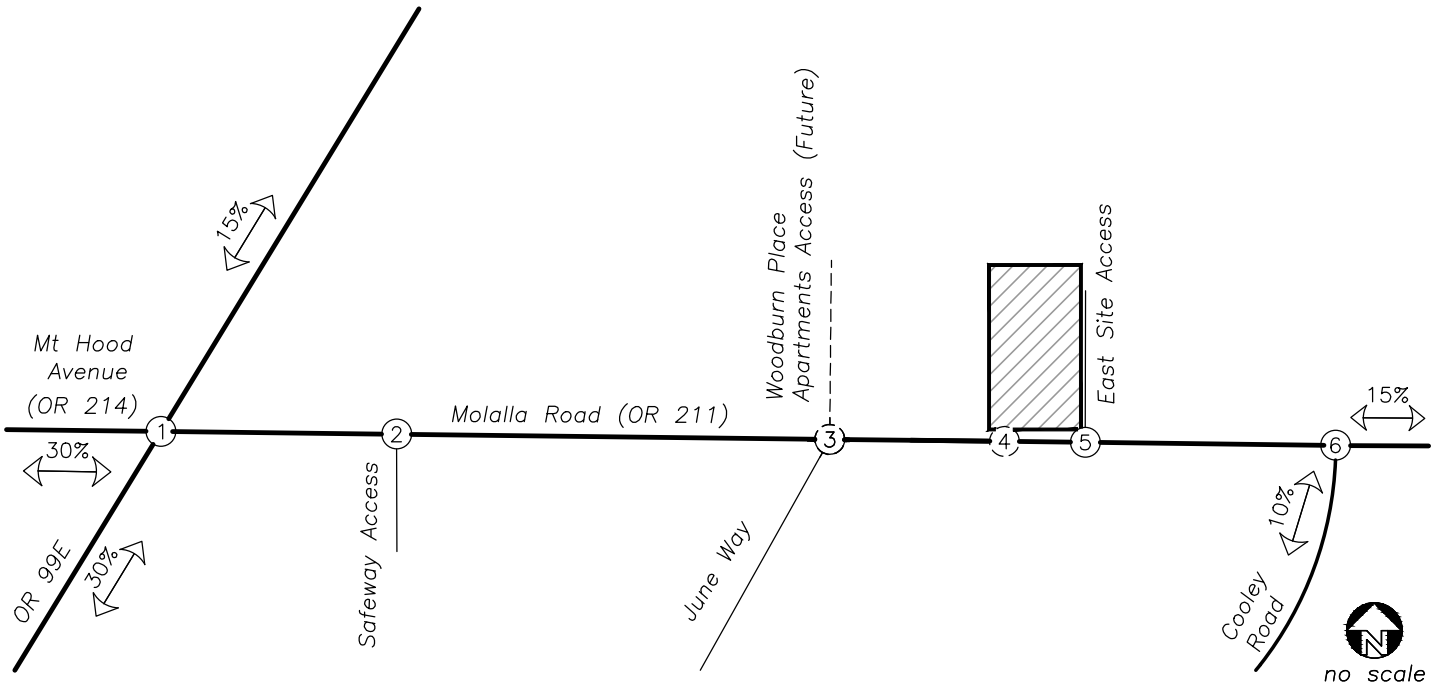
PRIMARY TRIP GENERATION			
	IN	OUT	TOTAL
AM	38	38	76
PM	32	20	52

AM PEAK HOUR



PM PEAK HOUR





TRAFFIC VOLUME

Proposed Development Plan - Site Trips
AM & PM Peak Hours

Figure 3

2115 Molalla Road

10/3/2023

Traffic Volumes

Existing Conditions

All traffic counts were collected on September 7, 2023, while school was in session at the study intersections. All traffic counts are included in Appendix B.

Seasonal Adjustments

Volumes on the state highways, OR 211, OR 214, and OR 99E were seasonally adjusted following the procedures in ODOT's *Analysis Procedures Manual* (APM). As agreed with ODOT staff, the adjustment factor was developed using the automatic traffic recorder (ATR) method. Data from ATR #24-001 for the years 2016 through 2021 was used, excluding the year 2020, which shows a different seasonal pattern than other years due to the influence of the pandemic. The resulting factor of 1.034 was applied to the morning and evening peak hour volumes for all movements at the intersection of Molalla Road (OR 211) at N Pacific Highway (OR 99E) and the east-west through movements along Molalla Road (OR 211) at all the other study intersections.

Traffic Volumes

The year 2023 existing traffic volumes for the morning and evening peak hours are shown in Figure 4.

A comparison of the 2023 existing traffic volumes with those presented in the TIA prepared for the Woodburn Place West Apartments shows that the more recent traffic volumes are lower. The counts for the apartment project were collected in the year 2019, prior to the pandemic. During the pandemic, traffic volumes on most roadways dropped significantly. After the pandemic, traffic volumes increased again with some roadways returning to pre-pandemic volumes but some roadways continue to show lower volume trends.

Table 6 compares ODOT's average annual daily traffic volume estimates (AADT) on the study area highways for the year 2019, prior to the pandemic, and 2022, the most recent year of data available since the pandemic.

Table 6: Comparison of 2019 and 2022 Highway Volumes

Highway Location	Average Annual Daily Traffic (AADT)*		3-Year Growth
	2019	2022	
OR 214 West of OR 99E	14,098	14,998	6.4%
OR 211 East of OR 99E	8,006	6,570	-17.9%
OR 99E North of OR 214 & OR 211	17,456	17,760	1.7%
OR 99E & OR 214 South of OR 211	20,145	19,490	-3.3%
Total	59,705	58,818	-1.5%

** The AADT volumes are based on counts collected in May 2022 and April 2019.*
Source: Oregon Traffic Monitoring System, https://ordot.public.ms2soft.com/tcds/tsearch.asp?loc=Ordot&mod=TCDS

The table shows that the AADT was still lower in 2022 than 2019 on OR 211 (Molalla Road) and OR 99E (N Pacific Highway) south of the intersection with OR 211, The AADT on OR 214 (Mt. Hood Avenue) and OR 99E (N Pacific Highway) have returned to a net positive growth. Overall, volumes through the intersection of these highways were still lower in 2022 than in 2019.

Background Conditions

The background condition reflects a future volume forecast without the proposed development. Two components were included in the background traffic estimates: 1) general growth and 2) growth associated with planned developments. The background year is assumed to be 2025, which corresponds with the buildout of the proposed development.

As agreed upon during the scoping process, separate growth rates were applied to the highway and local streets in the study area. For the highways, a background growth rate of 1.17 percent per year was developed based on future growth trends from the state highways summarized in Table 7.

Table 7: Highway Growth Trends

Hwy	MP	Description	2019	2041	Annual Growth
081 (OR 99E)	31.65	North of Woodburn-Estacada Highway (OR211) and Hillsboro-Silverton Highway (OR214) [0.05 mile]	17,500	21,500	1.04%
081 (OR 99E)	31.80	South of Woodburn-Estacada Highway (OR211) [0.10 mile]	20,100	27,800	1.74%
140 (OR 214)	39.24	West of Pacific Highway East (OR99E) [0.05 mile]	14,100	14,000	0.00%
161 (OR 211)	0.15	East of Pacific Highway East (OR99E) and Hillsboro-Silverton Highway (OR214) [0.15 mile]	8,000	11,400	1.93%
Average Growth					1.17%

Source: 2041 Future Volume Table

For the local streets and driveways, a background growth rate for 0.5 percent per year was applied per the Woodburn Development Ordinance (WDO) Section 3.04.05F.

In addition to the general growth, traffic from the following developments was added to the network volumes:

- Woodburn Place West
- Pacific Valley Apartments
- Cleveland Crossing Apartments

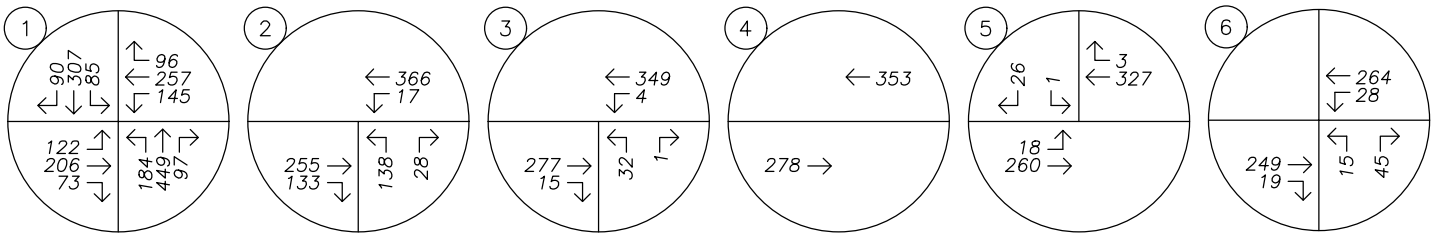
Figure 5 presents the year 2025 background volumes for the morning and evening peak hours.

Buildout Conditions

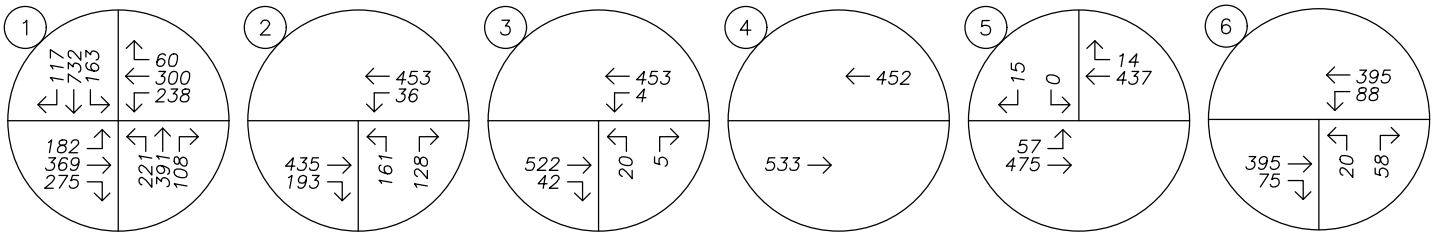
Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the background volumes to estimate the buildout volumes.

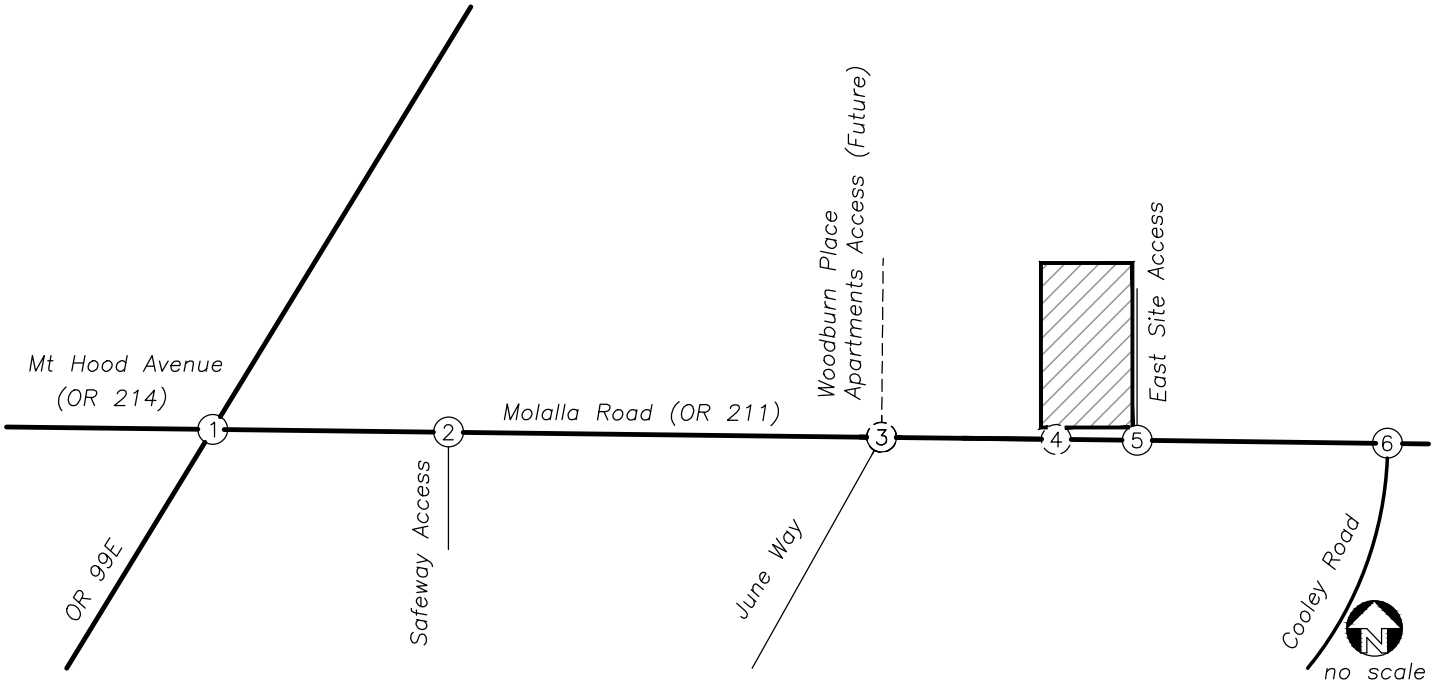
Figure 6 presents the year 2025 buildout volumes for the morning and evening peak hours.

AM PEAK HOUR



PM PEAK HOUR

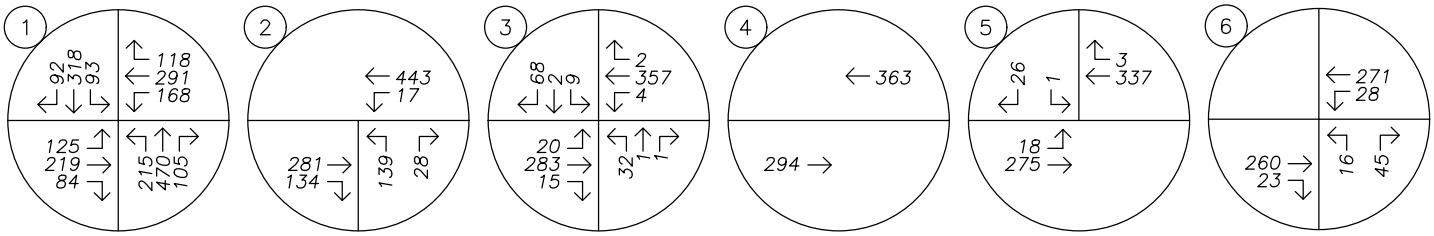




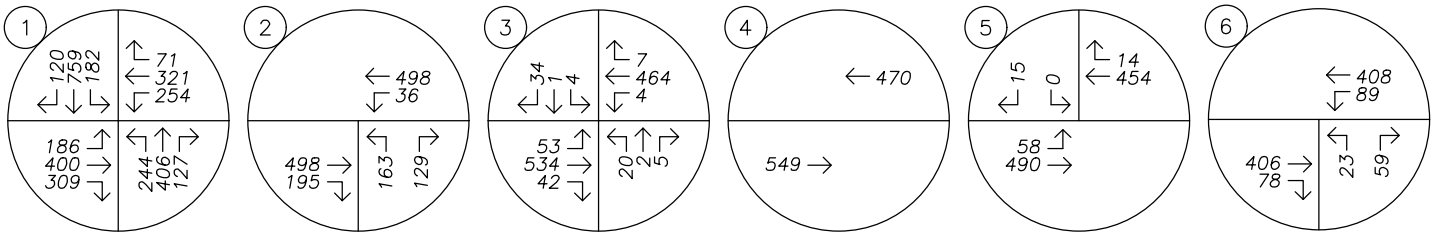
TRAFFIC VOLUMES
Year 2023 Existing Conditions
AM & PM Peak Hours

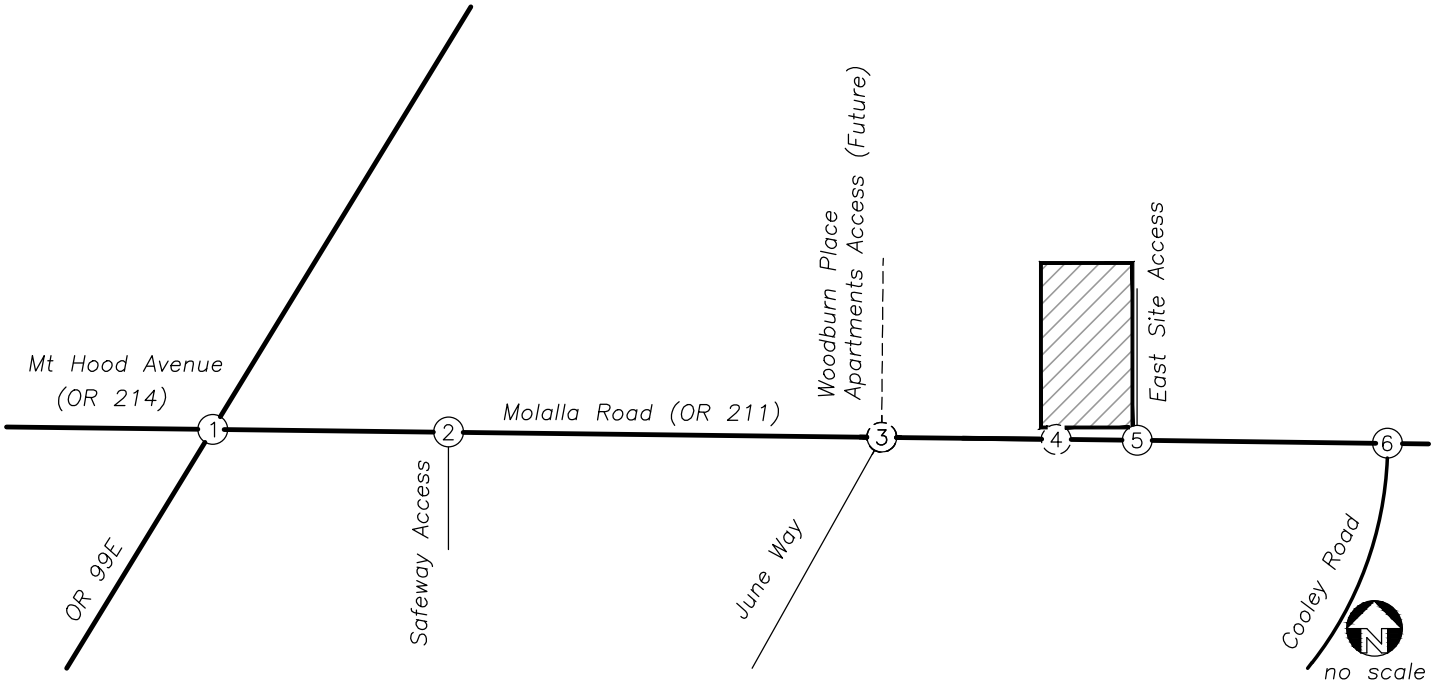
Figure 4
2115 Molalla Road
10/3/2023

AM PEAK HOUR



PM PEAK HOUR

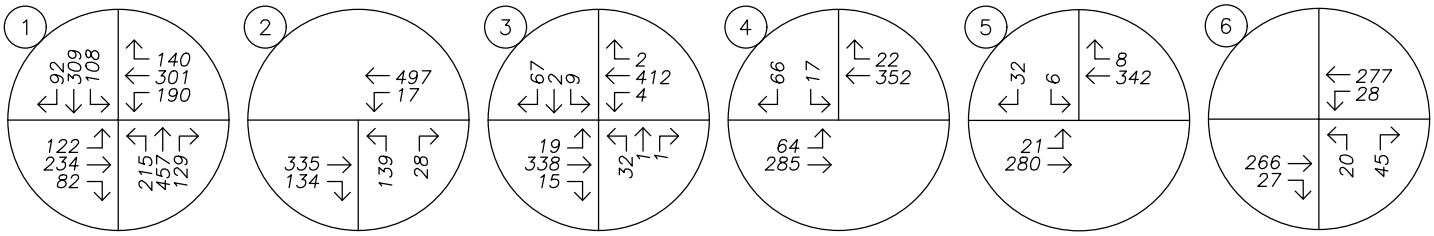




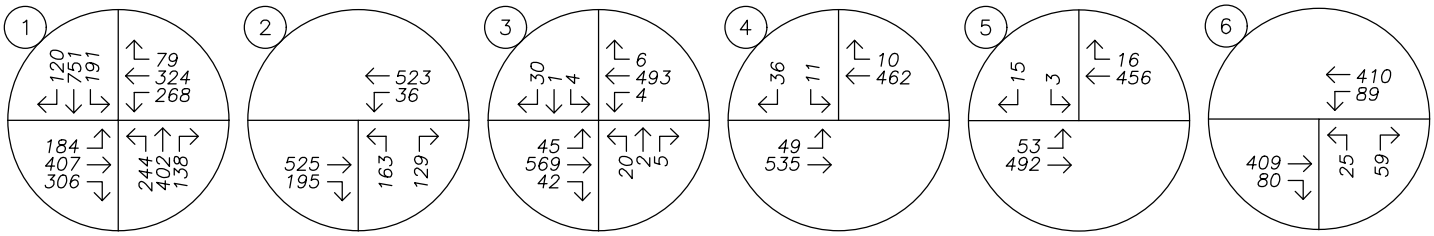
TRAFFIC VOLUMES
Year 2025 Background Conditions
AM & PM Peak Hours

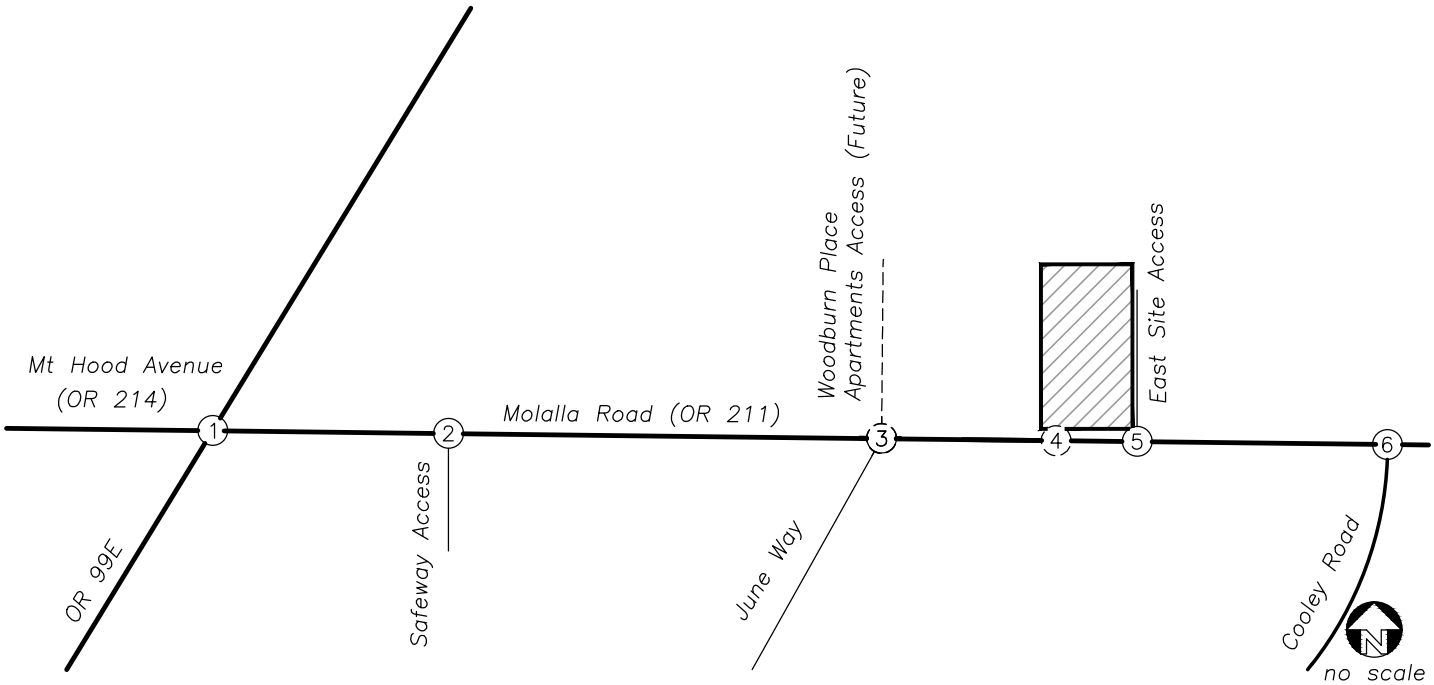
Figure 5
2115 Molalla Road
10/3/2023

AM PEAK HOUR



PM PEAK HOUR





TRAFFIC VOLUMES
Year 2025 Buildout Conditions
AM & PM Peak Hours

Figure 6
2115 Molalla Road
10/3/2023

Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Data System, a review of approximately five years of the most recent available crash history (January 2017 through December 2021) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions. Crash severity is based on injuries sustained by people involved in the collision, and includes five categories:

- *PDO* – Property Damage Only
- *Injury C* – Possible Injury
- *Injury B* – Suspected Minor Injury
- *Injury A* – Suspected Serious Injury
- *Fatality*

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak hour represents approximately 10 percent of the AADT at the intersection.

Table 8 provides a summary of crash types while Table 9 summarizes crash severities and rates for the three study area intersections with a history of reported crashes. Detailed crash data is provided in Appendix C.

Table 8: Collision Type Summary

Intersection		Crash Type							Total Crashes
		Rear End	Turn	Angle	Side-swipe	Other	Ped	Bike	
1	Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)	46	10	1	6	1	1	0	65
2	Molalla Road (OR 211) & Safeway Access	0	12	0	0	0	0	0	12
3	Molalla Road (OR 211) & June Road/Woodburn Place West	1	1	0	0	0	0	0	2

Table 9: Crash Severity and Rate Summary

Intersection		Severity					Total Crashes	ADT	Crash Rate	90th % Rate
		PDO	C	B	A	Fatal				
1	Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)	21	35	7	2	0	65	31,560	1.129	0.860
2	Molalla Road (OR 211) & Safeway Access	5	6	1	0	0	12	14,060	0.468	0.293
3	Molalla Road (OR 211) & June Road/Woodburn Place West	0	2	0	0	0	2	10,460	0.105	0.293

Crash Severity

Two of the crashes related to the study area intersections resulted in a suspected serious injury (Injury A). All were reported at the intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E):

- A northbound vehicle stopping at the intersection was struck by another northbound vehicle. The passenger of the stopping vehicle sustained injuries classified as Injury A and no injuries were sustained by the drivers of either vehicle. The striking driver was reported as following too closely. The collision occurred under rain, wet, daytime conditions.
- A southbound vehicle making a left turn was struck by a vehicle traveling southbound. The drivers of both vehicles sustained injuries classified as Injury A while a passenger of the turning vehicle sustained injuries classified as Injury B and two passengers of the turning vehicle sustained injury classified as Injury C. The striking driver was reported as disregarding traffic signal and driving left of center. The collision occurred under clear, dry, nighttime (11:00 pm) conditions.

Pedestrian and Bicycle Collisions

One of the reported crashes involved a pedestrian. At the intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E), a eastbound passenger vehicle on Mt. Hood Avenue struck a pedestrian walking in the north crosswalk. The pedestrian sustained injuries classified as Injury B; no injuries were sustained by the driver of the vehicle. The driver of the vehicle was reported as failing to yield the right of way although an obstructed view was also noted. The collision occurred under clear, dry, daytime conditions.

ODOT 90th Percentile Crash Rates

Intersection crash rates were compared to the published statewide 90th percentile crash rates within ODOT's APM. According to Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control in the APM, intersections which experience crash rates in excess of 90th percentile crash rates should be "flagged for further analysis".

Two of the study area intersections were calculated to have a crash rate that exceeds the 90th percentile crash rates for similar unsignalized intersections.

Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

The OR 211/OR 214 & OR 99E had 65 reported crashes over the five-year analysis period. However, the crash analysis shows that most (nearly 71 percent) crashes were rear-end collisions and the severity was generally low.

Forty-six (46) of the intersection-related crashes were reported as rear-end collisions. The cause or error was generally failure to avoid a stopped vehicle ahead or following too closely. Fifteen (15) of the crashes were reported in the eastbound direction movements, 13 crashes were reported in the southbound direction, 11 were reported in the northbound direction, and 7 were reported in the westbound direction. No specific pattern was identified for the rear-end collisions.

Ten (10) of the intersection-related crashes were reported as turning collisions. The cause or error was failure to yield right of way. Two (2) involved a vehicle making a westbound right-turn movement, 3 involved a vehicle making a southbound left-turn movement, 3 involved a vehicle making a northbound left-turn movement, and 2 involved a vehicle making an eastbound left-turn movement. Again, no specific pattern was identified for the turning collisions.

The other reported crashes involved all other legs of the intersection with no discernable patterns.

The Woodburn TSP identifies Project R14, which would "install a second left-turn lane on the southbound approach, install a second receiving lane on the east leg, and update signal timing in coordination with ODOT" as a medium priority project for capacity but does not identify specific safety improvements at the intersection. The TSP improvements are unlikely to change crash patterns at the intersection; therefore, Project R14 is not recommended as safety mitigation for the high crash rate.

The TIAs prepared for the Woodburn Place East and West apartments identified the need for a separate westbound right-turn lane. This improvement is unlikely to change crash patterns at the intersection; therefore, it is not recommended as safety mitigation for the high crash rate.

Molalla Road (OR 211) & Safeway Access

The Molalla Road (OR 211) & Safeway Access had 12 reported crashes over the five-year analysis period related to the driveway. All were reported as turning collisions while rear-end collisions in the vicinity of the driveway were assumed to be related to congestion at the traffic signal. Of the turning collisions, 7 involved a northbound left turn from the Safeway driveway, 3 involved a westbound left turn from the Molalla Road, and 1 involved a northbound right turn from the Safeway Access. In general, the drivers at fault failed to yield the right of way to the through movements.

The Woodburn TSP does not include any safety or capacity projects at this intersection. The only potential solution for the crash at this intersection would be access control restrictions to eliminate certain turning movements. This action would need to be initiated by ODOT and should not be the responsibility of development beyond the shopping center.

ODOT SPIS Review

The ODOT 2020 Safety Priority Index System (SPIS) list is based on reported crash data for the years 2017 through 2019. Two of the study area intersections were listed in the worst 15 percent[5] of SPIS list:

- Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E) – 95th percentile
- Molalla Road (OR 211) & Safeway Access – 85th percentile

These findings coincide with other factors in the crash review, including high crash rates and locations with crashes that resulted in an injury classified as Injury A.

Conclusions

The signalized highway intersection (OR 214/OR 211 & OR 99E) has a calculated crash rate that exceeds the 90th percentile rates identified by ODOT for similar types of intersections and is listed in the worst 5 percent of the ODOT SPIS list. No consistent crash patterns were identified. Although capacity improvements at the signalized intersection are listed in the TSP and in the TIAs prepared for nearby developments, these projects are unlikely to change the crash rate; therefore, no safety mitigation is recommended.

The Safeway shopping center driveway access on Molalla Road (OR 211) has a crash rate that exceeds the 90th percentile rates identified by ODOT for similar types of intersections. Access control to address crashes at the driveway to the Safeway shopping center but action would need to be initiated by ODOT and should not be the responsibility of development beyond the shopping center.

At the other study intersections, no significant trends or crash patterns were identified, and no safety mitigation is recommended per the crash data analysis.

Sight Distance Evaluation

A sight distance analysis was conducted at the two site accesses proposed on existing roadways. To evaluate the sight distance available at these intersections, intersection sight distance was measured and recommended in accordance with the current AASHTO manual[6]. According to AASHTO, the driver's eye is assumed to be 14.5 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye-height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

Based on the posted speed of 35 mph along Molalla Road (OR 211), the minimum recommended intersection sight distances for maintaining relatively uninterrupted traffic flow along the roadway is 390 feet for the left-turn and 335 feet for the right-turn. At both the primary site access and the access shared with Woodburn Place East, intersection sight distance was measured to exceed 1,000 feet to the east and west of the access.

Based on the detailed analysis, adequate sight distance is available for the proposed site access intersections along Ridge Road. No sight distance mitigation is necessary or recommended.

[5] Oregon Department of Transportation, Safety Priority Index System, 2020 - On-State, Top 15% Groups - By Score

[6] American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, 7th Edition, 2018.

Warrant Analysis

Left-Turn Lane Warrants

A left-turn refuge is primarily a safety consideration for the major-street approach because it removes left-turning vehicles from the through traffic stream. Left-turn lanes are already present on Molalla Road (OR 211) at most of the study intersections; the only locations currently without a left-turn lane are westbound Molalla Road (OR 211) at the Safeway shopping center driveway and eastbound Molalla Road (OR 211) at the future access to Woodburn Place West apartments. The left-turn lane warrants were assessed for all scenarios using ODOT's warrant analysis methodology.

Left-turn lane warrants on Molalla Road (OR 211) are projected to be met both westbound at the Safeway shopping center driveway and eastbound at the Woodburn Place West apartments under both background and buildout scenarios. Because the warrants are met regardless of whether or not the proposed development is constructed, no mitigation at this intersection is recommended as part of the proposed development.

Preliminary Traffic Signal Warrants

Preliminary traffic signal warrants were examined for all unsignalized study intersections. Methodologies were based on the Manual on Uniform Traffic Control Devices (MUTCD), published by the Federal Highway Administration in 2009. Warrant 1, Eight-Hour Vehicular Volumes, was evaluated based on the common assumption that traffic counted during the evening peak hour represents 10 percent of the average daily traffic (ADT) and that the 8th highest hour is 5.65 percent of the daily volume.

None of the intersections are projected to meet signal warrants under any analysis scenario.

Operational Analysis

Intersection Capacity Analysis

A capacity and delay analysis were conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)[7]. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little, or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

The analysis was performed using Synchro (version 12) software. The overall signalized v/c ratios were calculated following the methodologies in Chapter 16 of the ODOT APM for the critical intersection v/c ratio. This methodology was performed for all signalized intersections.

Mobility Standards

The following agency mobility standards are applicable in the study area:

- The City of Woodburn has the following mobility standards per the Woodburn Development Ordinance:[8]
    - For a signalized and all-way stop-control intersections, 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.
- ODOT has the following mobility targets in the study area per the Oregon Highway Plan:[9]
    - OR 99E is a regional highway inside an urban growth boundary but not a Metropolitan Planning Organization (MPO). Within the city limits, the posted speed is 35 mph, and the target v/c ratio is 0.90 or less.
    - OR 214 and OR 211 are district highways inside an urban growth boundary but not within an MPO. Within the city limits, the posted speed is 35 mph, and the target v/c ratio is 0.95 or less.

[7] Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.

[8] City of Woodburn, *Woodburn Development Ordinance*, Amended by Ordinance 2603 effective June 30, 2022 (LA 21-02).

[9] Oregon Department of Transportation, *Oregon Highway Plan*, Table 6: Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, 1999 Including amendments November 1999 through May 2015.

Delay & Capacity Analysis

The LOS, delay, and v/c results of the capacity analysis are shown in Table 10 for the morning and evening peak hours. The detailed calculations are attached in Appendix D.

Table 10: Capacity Analysis Summary

Intersection & Condition	Mobility Standard	Morning Peak Hour			Evening Peak Hour		
		V/C	LOS	Delay (s)	V/C	LOS	Delay (s)
1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)							
2020 Existing Condition	0.90	0.67	C	27	0.87	D	52
2025 Background Condition		0.73	C	30	0.92	E	61
2025 Buildout Condition		0.76	C	32	0.94	E	63
2. Molalla Road (OR 211) & Safeway Access							
2020 Existing Condition	0.95	0.38	C	20	0.70	E	48
2025 Background Condition		0.45	C	24	0.84	F	74
2025 Buildout Condition		0.53	D	31	0.91	F	92
3. Molalla Road (OR 211) & June Road/Woodburn Place West							
2020 Existing Condition	0.95	0.10	C	16	0.12	C	23
2025 Background Condition		0.13	C	19	0.18	D	32
2025 Buildout Condition		0.15	C	23	0.19	D	34
4. Molalla Road (OR 211) & Primary Site Access							
2025 Buildout Condition	0.95	0.15	B	12	0.10	B	13
5. Molalla Road (OR 211) & Woodburn Place East							
2020 Existing Condition	0.95	0.04	B	11	0.06	B	11
2025 Background Condition		0.05	B	11	0.06	B	12
2025 Buildout Condition		0.07	B	11	0.06	B	12
6. Molalla Road (OR 211) & Cooley Road							
2020 Existing Condition	0.95	0.10	B	11	0.18	B	16
2025 Background Condition		0.11	B	11	0.20	C	16
2025 Buildout Condition		0.12	B	12	0.20	C	17

The signalized intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E) is expected to operate with a v/c ratio over 0.90 during the evening peak hour under the 2025 background and buildout scenarios, which exceeds the ODOT mobility target. The proposed development will change the overall intersection v/c ratio and delay.

The Woodburn TSP identifies Project R14, which would "install a second left-turn lane on the southbound approach, install a second receiving lane on the east leg, and update signal timing in coordination with ODOT"

as a medium priority project for capacity but does not identify specific safety improvements at the intersection. As an alternative improvement, the TIAs prepared for the Woodburn Place East and West apartments identified the need for a separate westbound right-turn lane. The improvements are assessed in the *Potential Mitigation* section of this report.

All other study area intersections are expected to meet mobility standards for all analysis scenarios.

Queuing Analysis

An analysis of projected queuing was conducted for the study intersections. The 95th percentile queue lengths were estimated based on the same Synchro/SimTraffic simulations used for the delay calculations. The 95th percentile queue is a statistical measurement which indicates there is a 5 percent chance that the queue may exceed this length during the analysis period; however, given this is a probability, the 95th percentile queue length may theoretically never be met or observed in the field.

The 95th percentile queue lengths reported in the simulation are presented in Table 11 for the morning and evening peak hours. All queues more than 5 feet longer than a multiple of 25 were rounded up to the nearest 25 feet, equivalent to an average vehicle length. Those that were 5 feet or less than a multiple of 25 were rounded down since 5 feet is equivalent to the space between queued vehicles. Detailed queuing analysis reports are included in Appendix D.

Table 11: 95th Percentile Queueing Analysis Summary

Intersection/Movement	Available Storage (ft)	2025 Background Queue (ft)		2025 Buildout Queue (ft)	
		Morning	Evening	Morning	Evening
1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)					
EB Left	560	150	425	150	400
EB Right	560	0	150	25	375
WB Left	315	175	350	225	325
NB Left	350	200	225	200	200
NB Right	200	50	75	75	75
SB Left	380	125	200	150	200
2. Molalla Road (OR 211) & Safeway Access					
EB Right	130	25	25	25	25
WB Left-Through	740	75	275	100	250
NB Left	150	100	275	125	350
NB Right	150	50	200	50	225

Table 11: 95th Percentile Queueing Analysis Summary

Intersection/Movement	Available Storage (ft)	2025 Background Queue (ft)		2025 Buildout Queue (ft)	
		Morning	Evening	Morning	Evening
3. Molalla Road (OR 211) & June Road/Woodburn Place West					
EB Left-Through-Right	740	25	75	50	100
WB Left	100	25	25	25	25
NB Left-Through-Right	125	50	50	50	50
SB Left-Through-Right	100	75	50	50	50
4. Molalla Road (OR 211) & Primary Site Access					
EB Left	100	-	-	50	50
SB Left-Right	100	-	-	50	75
5. Molalla Road (OR 211) & Woodburn Place East					
EB Left	100	25	50	25	50
SB Left-Right	100	50	50	50	50
6. Molalla Road (OR 211) & Cooley Road					
EB Left	325	25	25	25	25
WB Left	100	25	50	25	50
NB Left-Right	>200	75	75	75	75
SB Left-Right	770	75	50	75	50

In general, changes in 95th percentile queuing between the year 2025 background and buildout conditions are anticipated to be small. Queues for the westbound left-turn movement on Molalla Road (OR 211) at the traffic signal are anticipated to spill out of the turn lane into the adjacent through lane and past the entrance to the Safeway shopping center during the evening in both the background and buildout scenarios. As a result, queues on the northbound Safeway access are expected to extend into the parking lot during the evening in both future scenarios.

Improvements at the signalized intersection are assessed in the *Potential Mitigation* section of this report. No mitigation for the shopping center access is recommended because drivers have alternate options for exiting the shopping center.

Potential Mitigation

The signalized intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E) is expected to operate with a v/c ratio over 0.90 during the evening peak hour under the 2025 background and buildout scenarios, which exceeds the ODOT mobility target. The proposed development will change the overall intersection v/c ratio and delay.

The Woodburn TSP identifies Project R14, which would "install a second left-turn lane on the southbound approach, install a second receiving lane on the east leg, and update signal timing in coordination with ODOT" as a medium priority project for capacity but does not identify specific safety improvements at the intersection. As an alternative improvement, the TIAs prepared for the Woodburn Place East and West apartments identified the need for a separate westbound right-turn lane. The operational and queuing results of these two potential improvements are summarized in Table 12 and Table 13.

Table 12: OR 211/OR 214 & OR 99E - Operations with Potential Mitigation

Intersection & Condition	Mobility Standard	Morning Peak Hour			Evening Peak Hour		
		V/C	LOS	Delay (s)	V/C	LOS	Delay (s)
Current Configuration							
2025 Background Condition	0.90	0.73	C	30	0.92	E	61
2025 Buildout Condition		0.76	C	32	0.94	E	63
TSP Improvement – Dual Southbound Left-Turn Lanes							
2025 Background Condition	0.90	0.71	C	29	0.92	E	59
2025 Buildout Condition		0.73	C	30	0.93	E	62
Woodburn Place West TIA Improvement – Westbound Right-Turn Lane							
2025 Background Condition	0.90	0.65	C	26	0.92	E	59
2025 Buildout Condition		0.67	C	26	0.93	E	62

As shown in Table 12, both mitigation options result in a small improvement in operations during evening peak because neither the southbound left turn nor the westbound right turn is a critical movement under either future scenario. However, the addition of a westbound right-turn lane would improve intersection operations to a greater extent in the morning peak hour compared with the dual southbound left-turn lanes.

Table 13: OR 211/OR 214 & OR 99E - Queuing with Potential Mitigation

Intersection/Movement	Available Storage (ft)	2025 Background Queue (ft)		2025 Buildout Queue (ft)	
		Morning	Evening	Morning	Evening
Current Configuration					
EB Left	560	150	425	150	475
EB Right	560	0	150	25	200
WB Left	315	175	350	225	350
NB Left	350	200	225	200	250
NB Right	200	50	75	75	100
SB Left	380	125	200	150	200
TSP Improvement – Dual Southbound Left-Turn Lanes					
EB Left	560	150	400	150	375
EB Right	560	0	200	25	200
WB Left	315	175	300	200	300
NB Left	350	200	225	200	225
NB Right	200	50	50	50	50
SB Left	380	100	150	125	150
Woodburn Place West TIA Improvement – Westbound Right-Turn Lane					
EB Left	560	150	300	150	300
EB Right	560	0	175	0	175
WB Left	315	200	325	200	325
WB Right	TBD	75	50	75	50
NB Left	350	200	225	200	225
NB Right	200	75	100	75	100
SB Left	380	150	250	175	250

As shown in Table 13, both mitigation options result in similar changes in queues compared with the current configuration. The westbound left-turn queue at the signal will still extend past the entrance to the Safeway shopping center during the evening with either mitigation option.

Conclusion

Given the analysis findings, the westbound right-turn lane appears to be equally or more effective than the dual southbound left-turn lanes and it is likely to have a lower cost and fewer impacts than the TSP improvement. Therefore, the westbound right-turn lane is recommended as the preferred intersection improvement.

The proposed development is estimated to contribute 1.7 percent of the total evening peak hour traffic traveling through the intersection and 3.7 percent of the traffic in the existing westbound through-right lane under year 2025 buildout conditions. This traffic estimate should be considered in the proportionate share contribution for the project.

Conclusions

Key findings of this study include:

- A review of the most recent five years of available crash data yielded the following conclusions:
    - The signalized highway intersection (OR 214/OR 211 & OR 99E) has a calculated crash rate that exceeds the 90th percentile rates identified by ODOT for similar types of intersections and is listed in the worst 5 percent of the ODOT SPIS list. Although capacity improvements at the signalized intersection are listed in the TSP and in the TIAs prepared for nearby developments, these projects are unlikely to change the crash rate and would not be effective as safety mitigation. Since no consistent crash patterns were identified at the intersection, no safety mitigation is recommended.
    - The Safeway shopping center driveway access on Molalla Road (OR 211) has a crash rate that exceeds the 90th percentile rates identified by ODOT for similar types of intersections. Access control to address crashes at the driveway to the Safeway shopping center would need to be initiated by ODOT and should not be the responsibility of development beyond the shopping center.
    - At the other study intersections, no significant trends or crash patterns were identified, and no safety mitigation is recommended per the crash data analysis.
- Based on the sight distance analysis, adequate sight distance is available for the planned site access intersections along Molalla Road (OR 211). No sight distance mitigation is necessary or recommended.
- Left-turn lanes are already present on Molalla Road (OR 211) at most of the study intersections; the only locations currently without a left-turn lane are westbound Molalla Road (OR 211) at the Safeway shopping center driveway and eastbound Molalla Road (OR 211) at the future access to Woodburn Place West apartments. Left-turn lane warrants are projected to be met at each location under both background and buildout scenarios. Because the warrants are met regardless of whether or not the proposed development is constructed, no mitigation at this intersection is recommended as part of the proposed development.
- Preliminary traffic signal warrants were examined for all unsignalized study intersections. None of the intersections are projected to meet signal warrants under any analysis scenario.
- All study area intersections are expected to meet mobility standards for all analysis scenarios except for the signalized intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E). This intersection is expected to operate with a v/c ratio over 0.90 during the evening peak hour under both year 2025 background and year 2025 buildout scenarios, which exceeds the ODOT mobility target. The proposed development will change the overall intersection v/c ratio and delay. Recommended mitigation is detailed below.
- In general, changes in 95th percentile queuing between the year 2025 background and year 2025 buildout scenarios are anticipated to be small. Queues for the westbound left-turn movement on Molalla Road (OR 211) at the traffic signal with N Pacific Highway (OR 99E) are anticipated to spill out of the turn lane into the adjacent through lane and past the entrance to the Safeway shopping center during the evening in both the year 2025 background and year 2025 buildout scenarios. As a result, queues on the northbound

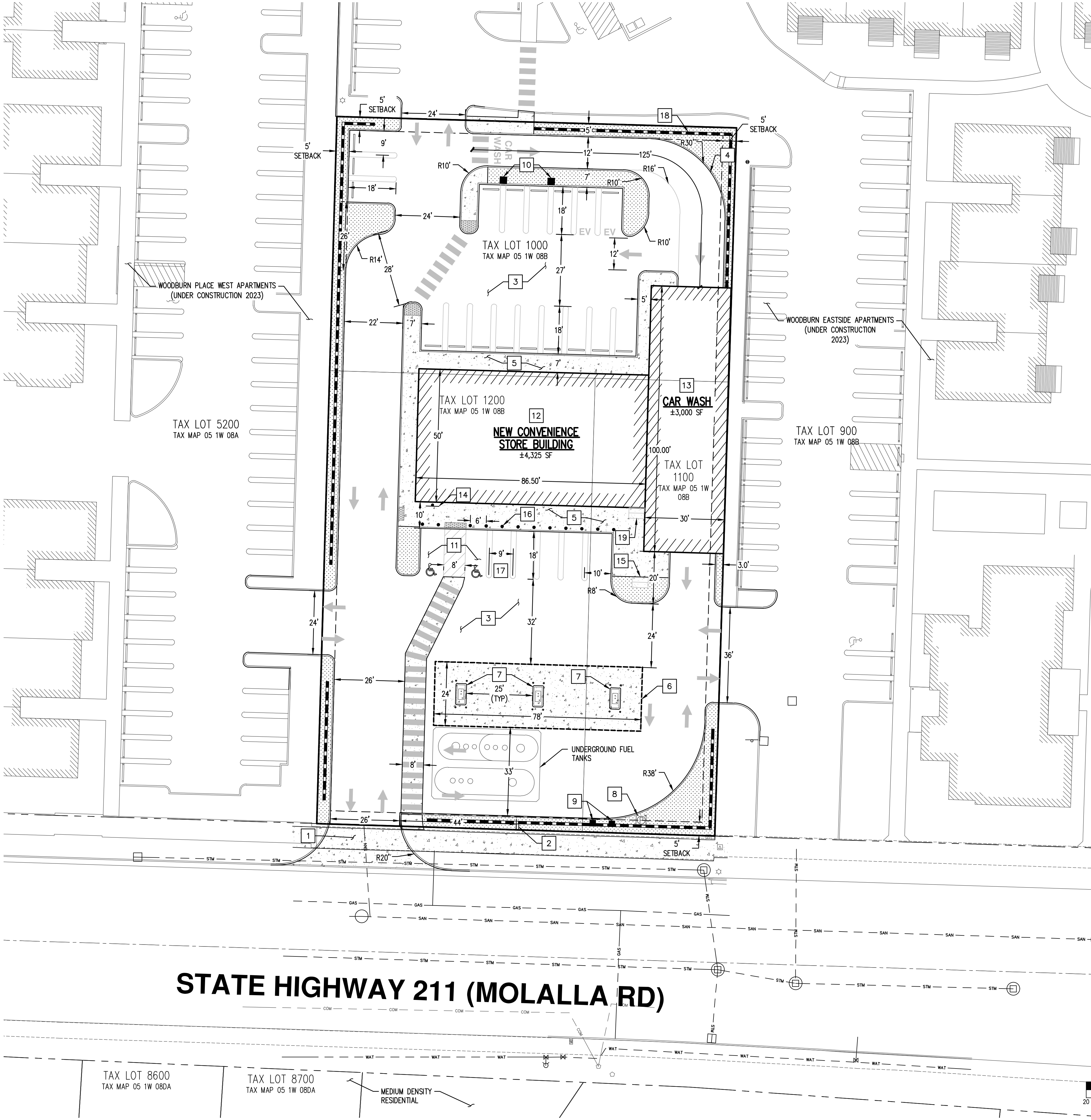
Safeway access are expected to extend into the parking lot during the evening in both future scenarios. Improvements at the signalized intersection are recommended below. No mitigation for the shopping center access is recommended because drivers have alternate options for exiting the shopping center.

- Two potential mitigation options were evaluated to address the expected deficiencies at the intersection of Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E) with the following findings and recommendations:
    - The options considered include: 1) the Woodburn TSP Project R14, which would add a second southbound left-turn lane on OR 99E and a corresponding eastbound receiving lane on OR 211, and 2) a separate westbound right-turn lane as conditioned for the Woodburn Place West apartments.
    - Both mitigation options result in a small improvement in operations during evening peak because neither the southbound left turn nor the westbound right turn is a critical movement under either future scenario. However, the addition of a westbound right-turn lane would improve intersection operations to a greater extent in the morning peak hour compared with the dual southbound left-turn lanes. The options result in similar changes in queues compared with the current configuration.
    - Given these findings, the westbound right-turn lane appears to be equally or more effective than the dual southbound left-turn lanes and it is likely to have a lower cost and fewer impacts than the TSP improvement. Therefore, the westbound right-turn lane is recommended as the preferred intersection improvement. The proposed development is estimated to contribute 1.7 percent of the total evening peak hour traffic traveling through the intersection and 3.7 percent of the traffic in the existing westbound through-right lane under year 2025 buildout conditions. This traffic estimate should be considered in the proportionate share contribution for the project.

Appendix A – Site Information

Site Plan

Trip Generation Calculations



SITE PLAN KEYED NOTES:

1. COMMERCIAL DRIVEWAY DROP AND APPROACH.
2. MONUMENT SIGN.
3. AC PAVEMENT.
4. TYPE "C" CONCRETE CURB (TYP).
5. CONCRETE SIDEWALK.
6. FUEL STATION OVERHEAD (CANOPY TO BE CONSTRUCTED DESIGN-BUILD).
7. FUEL PUMP ISLAND.
8. PROPANE TANK FILLING STATION.
9. AIR AND WATER STATION.
10. VACUUM STATION (2 STALLS EACH).
11. ADA ACCESSIBLE PARKING STALL WITH LOADING AREA.
12. CONVENIENCE STORE BUILDING.
13. DRIVE THROUGH CARWASH.
14. ADA SIGNAGE MOUNTED ON BUILDING.
15. BICYCLE PARKING.
16. BOLLARD (TYP).
17. CARPOOL/VANPOOL PARKING STALL.
18. ARCHITECTURAL WALL.
19. COVERED BICYCLE PARKING.

SITE AREA SUMMARY

AREA DESCRIPTION	AREA (SF)	% OF TOTAL AREA
TOTAL SITE AREA:	±40,000	--
STRUCTURES:	±7,465	±19%

PARKING COUNT:

TOTAL SPACES REQUIRED:	25 (1 STALL/200 SF OF RETAIL AREA + 1 STALL/PUMP STATION)
STANDARD SPACES PROVIDED:	16
ADA SPACES PROVIDED:	2
ELECTRIC VEHICLE SPACE PROVIDED:	2
CARPOOL/VANPOOL SPACE PROVIDED:	1
FUEL SPACES PROVIDED:	6
TOTAL SPACES PROVIDED:	27
BICYCLE PARKING REQUIRED:	4 (15% OF REQUIRED PARKING SPACES)
BICYCLE PARKING PROVIDED:	4

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KEIZER, OR 97303
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PRELIMINARY SITE PLAN
2115 MOLALLA RD NE
WOODBURN, OR

PRELIMINARY NOT FOR CONSTRUCTION

RENEWS: DECEMBER 31, 2024

JOB NUMBER:	9438
DATE:	08/03/2023
DESIGNED BY:	TDR
DRAWN BY:	ED
CHECKED BY:	TDR

C100

AKS DRAWING FILE: 9438 SITE PLAN.DWG | LAYOUT: LAYOUT1

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Single-Family Detached Housing
Land Use Code:	210
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	Dwelling Units
Trip Type:	Vehicle
Formula Type:	Rate
Variable Quantity:	1

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	25%	75%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Convenience Store/Gas Station
Land Use Code:	945
Land Use Subcategory:	GFA (4-5.5k)
Setting/Location	General Urban/Suburban
Variable:	Vehicle Fueling Positions
Trip Type:	Vehicle
Formula Type:	Rate
Variable Quantity:	6

AM PEAK HOUR

Trip Rate: 27.04

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	81	81	162

PM PEAK HOUR

Trip Rate: 22.76

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	69	68	137

WEEKDAY

Trip Rate: 257.13

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	771	771	1,542

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	2115 Molalla Road	**Organization:**	Lancaster Mobley
Project Location:	Woodburn, Oregon	**Performed By:**	JED
Scenario Description:		**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				190	95	95
Restaurant				0		
Cinema/Entertainment				0		
Residential				188	51	137
Hotel				0		
All Other Land Uses[2]				0		
Total				378	146	232

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	378	146	232
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips[3]	374	144	230
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	1%	1%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	2115 Molalla Road
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	95	95	1.00	95	95
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	51	51	1.00	137	137
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	28		12	0	13	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	1	27	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		30	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	8		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	16	0	0		0
Hotel	0	4	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	94	95	94	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	50	51	50	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	94	95	94	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	136	137	136	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	2115 Molalla Road	**Organization:**	Lancaster Mobley
Project Location:	Woodburn, Oregon	**Performed By:**	JED
Scenario Description:		**Date:**	
Analysis Year:	BK+Site	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail				143	72	71
Restaurant				0	0	0
Cinema/Entertainment				0	0	0
Residential				207	130	77
Hotel				0	0	0
All Other Land Uses[2]				0	0	0
Total				350	202	148

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					300	
Restaurant						
Cinema/Entertainment						
Residential		300				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	18	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	7	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	350	202	148
Internal Capture Percentage	14%	12%	17%
External Vehicle-Trips[3]	300	177	123
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	10%	25%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	14%	9%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	2115 Molalla Road
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	72	72	1.00	71	71
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	130	130	1.00	77	77
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		21	3	18	4
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	31	16	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		6	0	0	5	0
Retail	0		0	0	60	0
Restaurant	0	36		0	21	0
Cinema/Entertainment	0	3	0		5	0
Residential	0	7	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	7	65	72	65	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	18	112	130	112	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	18	53	71	53	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	70	77	70	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix B – Volumes

Traffic Counts

In-Process Trips

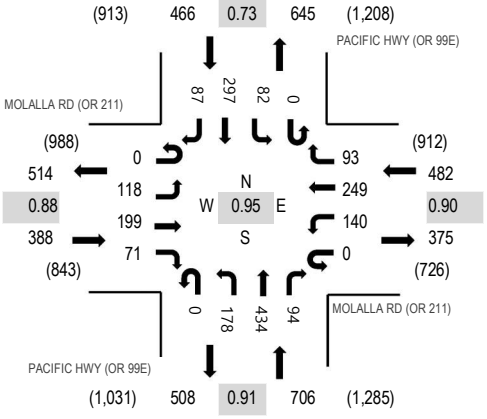
Volume Diagrams

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

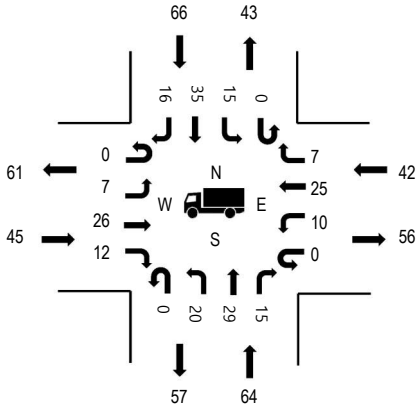
Location: 1 PACIFIC HWY (OR 99E) & MOLALLA RD (OR 211) AM
Date: Thursday, September 7, 2023
Peak Hour: 07:10 AM - 08:10 AM
Peak 15-Minutes: 07:55 AM - 08:10 AM

Peak Hour

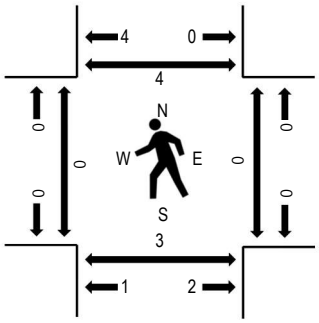
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	11.6%	0.88
WB	8.7%	0.90
NB	9.1%	0.91
SB	14.2%	0.73
All	10.6%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				PACIFIC HWY (OR 99E) Northbound				PACIFIC HWY (OR 99E) Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	10	23	8	0	7	21	11	0	3	42	9	0	3	21	13	171	2,006
7:05 AM	0	13	31	6	0	10	10	5	0	6	36	3	0	4	14	6	144	2,010
7:10 AM	0	8	14	3	0	5	18	6	0	20	41	10	0	7	20	4	156	2,042
7:15 AM	0	9	13	3	0	13	33	3	0	7	41	13	0	8	21	4	168	2,040
7:20 AM	0	6	17	7	0	9	24	11	0	18	36	9	0	9	33	9	188	2,040
7:25 AM	0	16	16	2	0	10	20	8	0	9	30	8	0	4	21	17	161	2,020
7:30 AM	0	11	24	4	0	13	26	7	0	13	28	6	0	6	15	3	156	2,022
7:35 AM	0	15	22	4	0	10	12	14	0	10	44	6	0	8	34	7	186	2,030
7:40 AM	0	8	10	7	0	18	28	9	0	9	34	5	0	3	22	5	158	1,996
7:45 AM	0	7	18	12	0	6	19	8	0	21	32	6	0	6	17	8	160	1,983
7:50 AM	0	6	14	5	0	10	16	9	0	18	35	10	0	7	32	9	171	1,993
7:55 AM	0	11	21	10	0	9	19	9	0	17	41	4	0	9	31	6	187	1,982
8:00 AM	0	9	14	7	0	19	20	3	0	13	39	11	0	9	27	4	175	1,947
8:05 AM	0	12	16	7	0	18	14	6	0	23	33	6	0	6	24	11	176	
8:10 AM	0	11	23	9	0	13	19	6	0	11	31	8	0	3	16	4	154	
8:15 AM	0	9	16	9	0	14	24	9	0	11	39	6	0	3	20	8	168	
8:20 AM	0	17	10	8	0	9	25	3	0	12	35	8	0	4	31	6	168	
8:25 AM	0	7	26	9	0	12	14	8	0	12	29	2	0	14	27	3	163	
8:30 AM	0	7	25	15	0	10	27	6	0	17	25	5	0	3	20	4	164	
8:35 AM	0	11	16	11	0	10	13	7	0	11	29	5	0	3	27	9	152	
8:40 AM	0	9	15	10	0	9	24	6	0	16	27	7	0	5	11	6	145	
8:45 AM	0	8	13	15	0	9	19	4	0	12	30	3	0	7	36	14	170	
8:50 AM	0	8	14	7	0	12	20	3	0	15	32	5	0	9	25	10	160	
8:55 AM	0	9	9	8	0	11	17	3	0	16	18	3	0	8	34	16	152	
Count Total	0	237	420	186	0	266	482	164	0	320	807	158	0	148	579	186	3,953	
Peak Hour	0	118	199	71	0	140	249	93	0	178	434	94	0	82	297	87	2,042	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

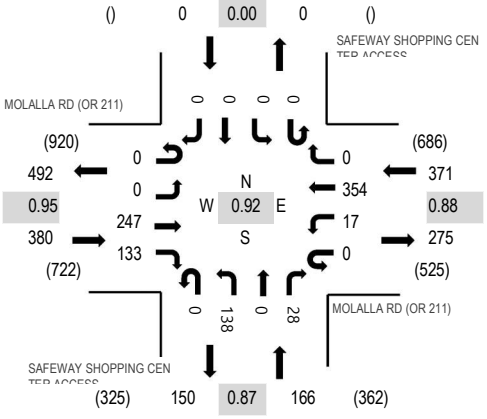
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	1	2	3	6	12	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	4	2	1	3	10	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	4	5	2	7	18	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	2	6	4	4	16	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	5	6	4	6	21	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	2	2	3	2	9	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	8	7	3	3	21	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	1	4	2	12	19	7:35 AM	0	0	0	1	1	7:35 AM	0	1	0	0	1
7:40 AM	6	3	5	1	15	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	1	1
7:45 AM	5	8	2	6	21	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	3	7	3	9	22	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	4	4	8	4	20	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	1	1
8:00 AM	2	4	5	5	16	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	2	2
8:05 AM	3	8	1	7	19	8:05 AM	0	0	0	0	0	8:05 AM	0	2	0	0	2
8:10 AM	6	8	6	3	23	8:10 AM	0	0	0	0	0	8:10 AM	0	2	0	0	2
8:15 AM	6	12	6	6	30	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	6	9	3	9	27	8:20 AM	0	0	0	0	0	8:20 AM	0	2	0	0	2
8:25 AM	6	5	7	6	24	8:25 AM	0	0	0	0	0	8:25 AM	0	1	0	0	1
8:30 AM	5	6	7	6	24	8:30 AM	1	0	0	0	1	8:30 AM	0	1	0	0	1
8:35 AM	5	5	1	4	15	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	4	8	5	1	18	8:40 AM	0	0	0	0	0	8:40 AM	1	0	0	0	1
8:45 AM	3	5	3	5	16	8:45 AM	0	0	0	0	0	8:45 AM	0	1	0	0	1
8:50 AM	5	11	6	4	26	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	4	3	4	12	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	97	141	93	123	454	Count Total	1	0	0	1	2	Count Total	1	10	0	4	15
Peak Hour	45	64	42	66	217	Peak Hour	0	0	0	1	1	Peak Hour	0	3	0	4	7

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

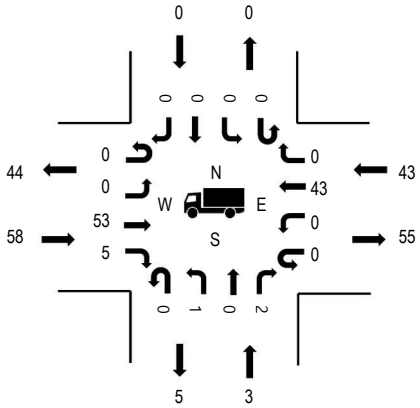
Location: 2 SAFEWAY SHOPPING CENTER ACCESS & MOLALLA RD (OR 211) AM
Date: Thursday, September 7, 2023
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour

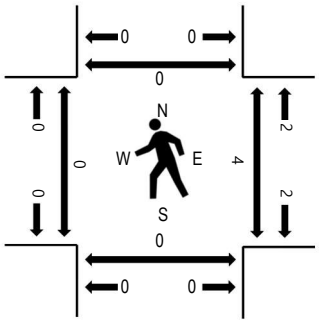
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	15.3%	0.95
WB	11.6%	0.88
NB	1.8%	0.87
SB	0.0%	0.00
All	11.3%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				SAFEWAY SHOPPING CENTER ACCESS Northbound				SAFEWAY SHOPPING CENTER ACCESS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	23	12	0	2	28	0	1	10	0	2	0	0	0	0	78	906
7:05 AM	0	0	25	11	0	3	15	0	0	10	0	1	0	0	0	0	65	912
7:10 AM	0	0	19	11	0	2	26	0	0	5	0	4	0	0	0	0	67	908
7:15 AM	0	0	27	8	0	1	38	0	0	12	0	5	0	0	0	0	91	917
7:20 AM	0	0	16	18	0	1	27	0	0	15	0	3	0	0	0	0	80	908
7:25 AM	0	0	18	11	0	2	30	0	0	12	0	5	0	0	0	0	78	894
7:30 AM	0	0	23	11	0	1	32	0	0	14	0	1	0	0	0	0	82	898
7:35 AM	0	0	24	11	0	0	23	0	0	8	0	1	0	0	0	0	67	907
7:40 AM	0	0	13	6	0	4	46	0	0	9	0	2	0	0	0	0	80	905
7:45 AM	0	0	22	9	0	2	30	0	0	7	0	1	0	0	0	0	71	890
7:50 AM	0	0	25	7	0	1	25	0	0	10	0	0	0	0	0	0	68	879
7:55 AM	0	0	16	17	0	1	33	0	0	7	0	5	0	0	0	0	79	886
8:00 AM	0	0	27	9	0	0	28	0	0	18	0	2	0	0	0	0	84	864
8:05 AM	0	0	16	11	0	3	22	0	0	8	0	1	0	0	0	0	61	
8:10 AM	0	0	20	15	0	1	20	0	0	18	0	2	0	0	0	0	76	
8:15 AM	0	0	17	8	0	4	28	0	0	20	0	5	0	0	0	0	82	
8:20 AM	0	0	11	12	0	3	24	0	0	14	0	2	0	0	0	0	66	
8:25 AM	0	0	21	21	0	4	24	0	0	9	0	3	0	0	0	0	82	
8:30 AM	0	0	24	9	0	5	31	0	0	17	0	5	0	0	0	0	91	
8:35 AM	0	0	13	10	0	6	21	0	0	12	0	3	0	0	0	0	65	
8:40 AM	0	0	18	7	0	2	17	0	0	15	0	6	0	0	0	0	65	
8:45 AM	0	0	13	9	0	5	19	0	0	13	0	1	0	0	0	0	60	
8:50 AM	0	0	15	15	0	2	24	0	0	15	0	4	0	0	0	0	75	
8:55 AM	0	0	10	8	0	3	17	0	0	14	0	5	0	0	0	0	57	
Count Total	0	0	456	266	0	58	628	0	1	292	0	69	0	0	0	0	1,770	
Peak Hour	0	0	247	133	0	17	354	0	0	138	0	28	0	0	0	0	917	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

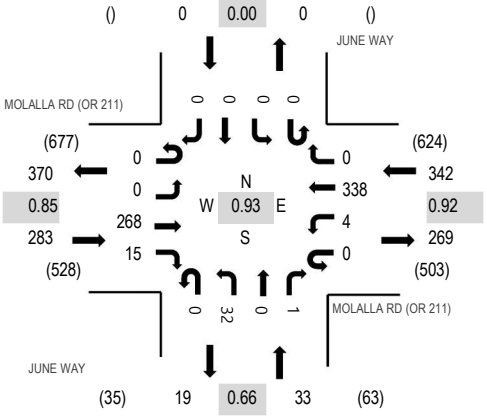
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	1	0	3	0	4	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	4	0	1	0	5	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	4	0	4	0	8	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	3	0	2	0	5	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	4	0	5	0	9	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	1	1	3	0	5	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	9	0	3	0	12	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	6	0	1	0	7	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	4	0	5	0	9	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	8	0	2	0	10	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	4	0	6	0	10	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	3	1	5	0	9	7:55 AM	0	0	0	0	0	7:55 AM	0	0	2	0	2
8:00 AM	5	1	4	0	10	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	2	2
8:05 AM	5	0	1	0	6	8:05 AM	0	0	0	0	0	8:05 AM	0	0	2	0	2
8:10 AM	6	0	6	0	12	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	4	1	5	0	10	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	2	0	3	0	5	8:20 AM	0	0	0	0	0	8:20 AM	0	0	1	0	1
8:25 AM	3	0	8	0	11	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	5	0	6	0	11	8:30 AM	0	0	0	0	0	8:30 AM	0	0	2	0	2
8:35 AM	2	1	3	0	6	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	4	0	3	0	7	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	5	1	6	0	12	8:45 AM	0	0	0	0	0	8:45 AM	0	0	1	0	1
8:50 AM	3	0	3	0	6	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	2	0	3	0	5	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	97	6	91	0	194	Count Total	0	0	0	0	0	Count Total	0	0	8	2	10
Peak Hour	58	3	43	0	104	Peak Hour	0	0	0	0	0	Peak Hour	0	0	4	2	6

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

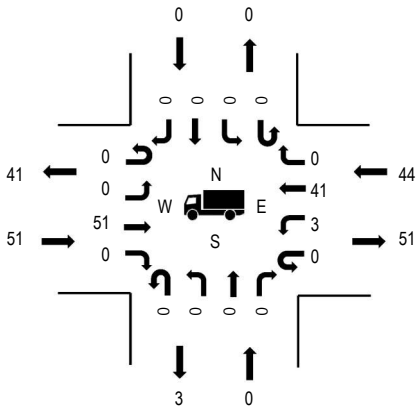
Location: 3 JUNE WAY & MOLALLA RD (OR 211) AM
Date: Thursday, September 7, 2023
Peak Hour: 07:05 AM - 08:05 AM
Peak 15-Minutes: 07:10 AM - 07:25 AM

Peak Hour

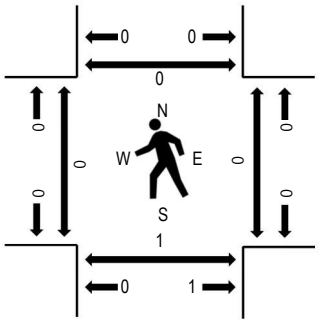
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	18.0%	0.85
WB	12.9%	0.92
NB	0.0%	0.66
SB	0.0%	0.00
All	14.4%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				JUNE WAY Northbound				JUNE WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	26	1	0	0	23	0	0	3	0	1	0	0	0	0	54	656
7:05 AM	0	0	22	1	0	1	19	0	0	1	0	0	0	0	0	0	44	658
7:10 AM	0	0	28	0	0	1	39	0	0	2	0	0	0	0	0	0	70	658
7:15 AM	0	0	30	3	0	0	21	0	0	3	0	1	0	0	0	0	58	627
7:20 AM	0	0	18	0	0	0	28	0	0	2	0	0	0	0	0	0	48	625
7:25 AM	0	0	21	1	0	1	30	0	0	3	0	0	0	0	0	0	56	623
7:30 AM	0	0	23	1	0	0	28	0	0	2	0	0	0	0	0	0	54	618
7:35 AM	0	0	25	1	0	1	26	0	0	3	0	0	0	0	0	0	56	629
7:40 AM	0	0	16	0	0	0	37	0	0	7	0	0	0	0	0	0	60	615
7:45 AM	0	0	18	3	0	0	29	0	0	4	0	0	0	0	0	0	54	595
7:50 AM	0	0	24	3	0	0	23	0	0	3	0	0	0	0	0	0	53	579
7:55 AM	0	0	19	0	0	0	30	0	0	0	0	0	0	0	0	0	49	571
8:00 AM	0	0	24	2	0	0	28	0	0	2	0	0	0	0	0	0	56	559
8:05 AM	0	0	20	1	0	0	19	0	0	4	0	0	0	0	0	0	44	
8:10 AM	0	0	16	2	0	0	20	0	0	0	0	1	0	0	0	0	39	
8:15 AM	0	0	24	1	0	0	27	0	0	4	0	0	0	0	0	0	56	
8:20 AM	0	0	13	0	0	0	29	0	0	3	0	1	0	0	0	0	46	
8:25 AM	0	0	23	1	0	0	24	0	0	2	0	1	0	0	0	0	51	
8:30 AM	0	0	27	3	0	0	34	0	0	1	0	0	0	0	0	0	65	
8:35 AM	0	0	16	0	0	0	24	0	0	2	0	0	0	0	0	0	42	
8:40 AM	0	0	21	1	0	1	17	0	0	0	0	0	0	0	0	0	40	
8:45 AM	0	0	14	1	0	0	23	0	0	0	0	0	0	0	0	0	38	
8:50 AM	0	0	15	3	0	0	24	0	0	3	0	0	0	0	0	0	45	
8:55 AM	0	0	15	1	0	0	17	0	0	4	0	0	0	0	0	0	37	
Count Total	0	0	498	30	0	5	619	0	0	58	0	5	0	0	0	0	1,215	
Peak Hour	0	0	268	15	0	4	338	0	0	32	0	1	0	0	0	0	658	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

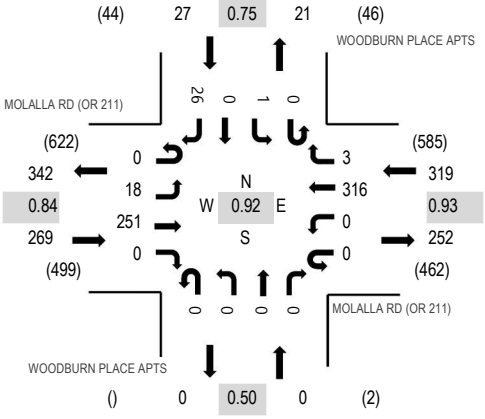
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	1	3	0	7	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	4	0	2	0	6	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	5	0	7	0	12	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	3	0	0	0	3	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	4	0	6	0	10	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	2	0	2	0	4	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	6	0	3	0	9	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	4	0	6	0	10	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	4	0	1	0	5	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	6	0	4	0	10	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	4	0	4	0	8	7:50 AM	0	0	0	0	0	7:50 AM	0	1	0	0	1
7:55 AM	4	0	5	0	9	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	2	2
8:00 AM	5	0	4	0	9	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	5	0	1	0	6	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	5	1	5	0	11	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	4	0	5	0	9	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	1	1
8:20 AM	2	1	3	0	6	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	3	0	8	0	11	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	3	0	5	0	8	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	0	3	0	6	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	2	0	4	0	6	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	6	0	5	0	11	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	3	0	3	0	6	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	2	0	3	0	5	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	92	3	92	0	187	Count Total	0	0	0	0	0	Count Total	0	1	0	3	4
Peak Hour	51	0	44	0	95	Peak Hour	0	0	0	0	0	Peak Hour	0	1	0	2	3

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

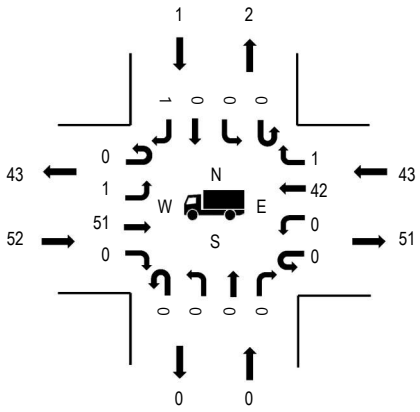
Location: 4 WOODBURN PLACE APTS & MOLALLA RD (OR 211) AM
Date: Thursday, September 7, 2023
Peak Hour: 07:05 AM - 08:05 AM
Peak 15-Minutes: 07:10 AM - 07:25 AM

Peak Hour

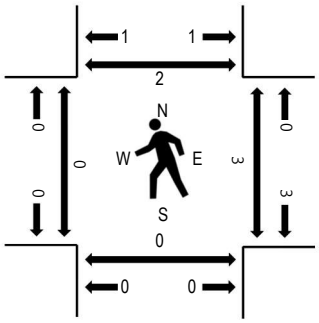
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	19.3%	0.84
WB	13.5%	0.93
NB	0.0%	0.50
SB	3.7%	0.75
All	15.6%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				WOODBURN PLACE APTS Northbound				WOODBURN PLACE APTS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	2	26	0	0	0	21	0	0	0	0	0	0	0	0	3	52	614
7:05 AM	0	2	19	0	0	0	18	1	0	0	0	0	0	0	0	2	42	615
7:10 AM	0	3	26	0	0	0	39	0	0	0	0	0	0	0	0	2	70	608
7:15 AM	0	1	31	0	0	0	18	0	0	0	0	0	0	0	0	1	51	576
7:20 AM	0	0	16	0	0	0	25	1	0	0	0	0	0	0	0	4	46	574
7:25 AM	0	2	20	0	0	0	28	0	0	0	0	0	0	0	0	2	52	572
7:30 AM	0	0	21	0	0	0	25	1	0	0	0	0	0	0	0	2	49	571
7:35 AM	0	2	22	0	0	0	26	0	0	0	0	0	0	1	0	4	55	584
7:40 AM	0	1	18	0	0	0	34	0	0	0	0	0	0	0	0	2	55	565
7:45 AM	0	2	17	0	0	0	23	0	0	0	0	0	0	0	0	3	45	553
7:50 AM	0	3	19	0	0	0	23	0	0	0	0	0	0	0	0	2	47	543
7:55 AM	0	0	21	0	0	0	27	0	0	0	0	0	0	0	0	2	50	535
8:00 AM	0	2	21	0	0	0	30	0	0	0	0	0	0	0	0	0	53	516
8:05 AM	0	1	16	0	0	0	15	1	0	0	0	1	0	0	0	1	35	
8:10 AM	0	2	13	0	0	0	21	2	0	0	0	0	0	0	0	0	38	
8:15 AM	0	2	22	0	0	0	25	0	0	0	0	0	0	0	0	0	49	
8:20 AM	0	2	12	0	0	0	29	0	0	0	0	0	0	0	0	1	44	
8:25 AM	0	0	25	0	0	0	26	0	0	0	0	0	0	0	0	0	51	
8:30 AM	0	3	25	0	0	0	34	0	0	0	0	0	0	0	0	0	62	
8:35 AM	0	1	14	0	0	0	20	0	0	0	0	0	0	0	0	1	36	
8:40 AM	0	3	19	0	0	0	18	1	0	1	0	0	0	0	0	1	43	
8:45 AM	0	1	12	0	0	0	19	0	0	0	0	0	0	0	0	3	35	
8:50 AM	0	3	12	0	0	0	19	0	0	0	0	0	0	0	0	5	39	
8:55 AM	0	1	13	0	0	0	15	0	0	0	0	0	0	0	0	2	31	
Count Total	0	39	460	0	0	0	578	7	0	1	0	1	0	1	0	43	1,130	
Peak Hour	0	18	251	0	0	0	316	3	0	0	0	0	0	1	0	26	615	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

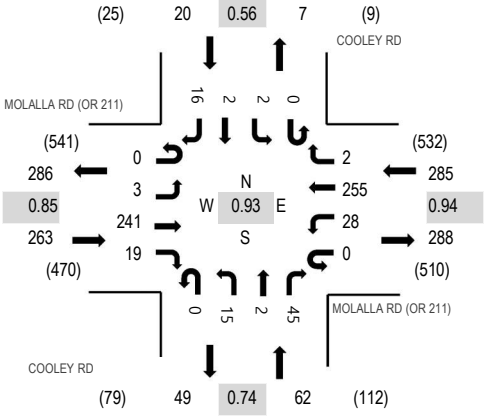
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	3	0	3	0	6	7:00 AM	0	0	0	0	0	7:00 AM	0	0	6	0	6
7:05 AM	4	0	3	0	7	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	5	0	7	0	12	7:10 AM	0	0	0	0	0	7:10 AM	0	0	3	0	3
7:15 AM	3	0	0	0	3	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	4	0	6	0	10	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	2	0	2	0	4	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	6	0	3	0	9	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	4	0	6	0	10	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	5	0	1	0	6	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	6	0	3	0	9	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	3	0	5	0	8	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	2	2
7:55 AM	5	0	4	1	10	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	2	2
8:00 AM	5	0	3	0	8	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	4	0	1	0	5	8:05 AM	0	0	0	0	0	8:05 AM	0	2	0	0	2
8:10 AM	4	0	6	0	10	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	5	0	4	0	9	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	3	0	4	0	7	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	5	0	8	0	13	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	3	0	4	0	7	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	0	3	0	6	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	2	0	4	0	6	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	5	0	4	1	10	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	3	0	3	0	6	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	2	0	3	0	5	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	94	0	90	2	186	Count Total	0	0	0	0	0	Count Total	0	2	9	4	15
Peak Hour	52	0	43	1	96	Peak Hour	0	0	0	0	0	Peak Hour	0	0	3	4	7

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

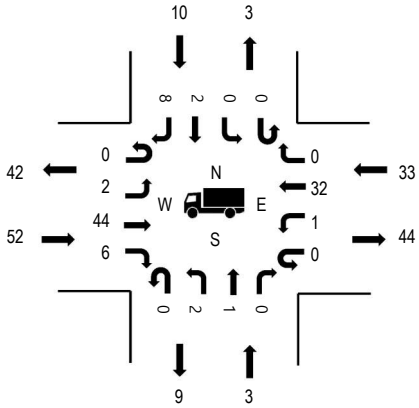
Location: 5 COOLEY RD & MOLALLA RD (OR 211) AM
Date: Thursday, September 7, 2023
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour

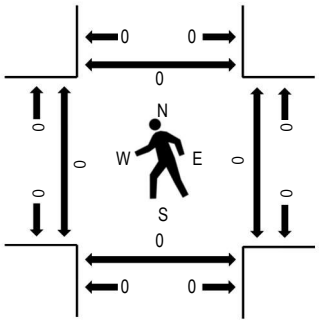
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	19.8%	0.85
WB	11.6%	0.94
NB	4.8%	0.74
SB	50.0%	0.56
All	15.6%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				COOLEY RD Northbound				COOLEY RD Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	1	22	5	0	3	17	0	0	1	1	9	0	1	0	2	62	630
7:05 AM	0	1	17	1	0	3	15	0	0	1	0	4	0	0	1	0	43	622
7:10 AM	0	1	22	0	0	2	33	0	0	1	0	4	0	0	0	1	64	613
7:15 AM	0	0	33	2	0	1	14	2	0	0	0	3	0	0	0	0	55	589
7:20 AM	0	0	16	0	0	2	16	0	0	2	0	5	0	0	0	6	47	581
7:25 AM	0	0	19	1	0	3	25	0	0	1	0	6	0	0	0	1	56	579
7:30 AM	0	0	20	1	0	1	22	0	0	0	0	3	0	1	0	1	49	578
7:35 AM	0	0	23	1	0	1	20	0	0	3	0	1	0	0	0	1	50	588
7:40 AM	0	0	18	2	0	2	30	0	0	2	0	0	0	0	1	0	55	579
7:45 AM	0	0	16	0	0	2	21	0	0	0	0	6	0	0	0	1	46	565
7:50 AM	0	0	18	1	0	4	19	0	0	2	1	3	0	0	0	2	50	553
7:55 AM	0	0	17	5	0	4	23	0	0	2	0	1	0	0	0	1	53	533
8:00 AM	0	0	22	0	0	3	25	0	0	1	0	2	0	0	0	1	54	509
8:05 AM	0	0	16	1	0	0	13	0	0	1	0	2	0	0	0	1	34	
8:10 AM	0	0	12	2	0	0	17	0	0	5	0	4	0	0	0	0	40	
8:15 AM	0	1	21	0	0	0	18	0	0	1	0	5	0	0	0	1	47	
8:20 AM	0	0	12	2	0	1	26	0	0	1	0	3	0	0	0	0	45	
8:25 AM	0	0	19	2	0	4	26	0	0	1	0	3	0	0	0	0	55	
8:30 AM	0	0	24	3	0	1	28	0	0	1	0	2	0	0	0	0	59	
8:35 AM	0	0	13	1	0	1	19	1	0	0	0	5	0	0	0	1	41	
8:40 AM	0	0	16	3	0	0	17	0	0	2	0	2	0	0	0	1	41	
8:45 AM	0	0	10	2	0	2	17	0	0	2	0	1	0	0	0	0	34	
8:50 AM	0	0	12	0	0	0	15	0	0	1	0	2	0	0	0	0	30	
8:55 AM	0	0	11	2	0	0	13	0	0	0	0	3	0	0	0	0	29	
Count Total	0	4	429	37	0	40	489	3	0	31	2	79	0	2	2	21	1,139	
Peak Hour	0	3	241	19	0	28	255	2	0	15	2	45	0	2	2	16	630	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	4	1	1	1	7	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	4	0	2	1	7	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	4	0	7	0	11	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	4	0	0	0	4	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	4	0	3	3	10	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	1	0	3	0	4	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	5	0	2	1	8	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	5	1	5	0	11	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	6	0	1	1	8	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	6	0	3	0	9	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	4	1	3	2	10	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	5	0	3	1	9	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	5	1	3	0	9	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	4	0	1	0	5	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	4	1	6	0	11	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	5	1	3	0	9	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	4	1	3	0	8	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	4	0	9	0	13	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	3	0	3	0	6	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	0	4	0	7	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	2	1	3	1	7	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	3	0	4	0	7	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	3	0	3	0	6	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	2	0	3	0	5	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	94	8	78	11	191	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	52	3	33	10	98	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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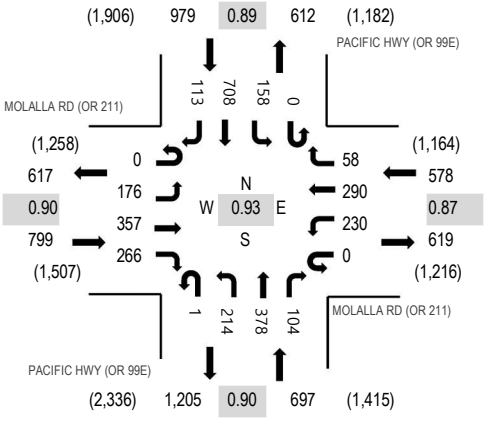
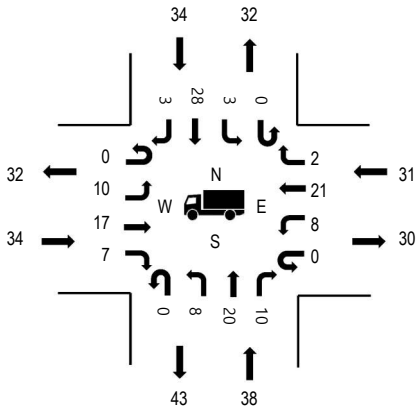
Location: 1 PACIFIC HWY (OR 99E) & MOLALLA RD (OR 211) PM
Date: Thursday, September 7, 2023
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour

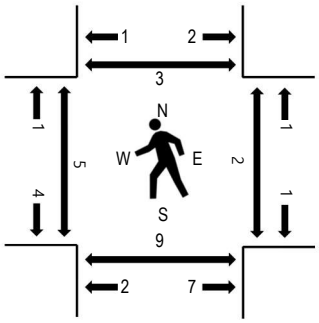
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.3%	0.90
WB	5.4%	0.87
NB	5.5%	0.90
SB	3.5%	0.89
All	4.5%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				PACIFIC HWY (OR 99E) Northbound				PACIFIC HWY (OR 99E) Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	16	39	18	0	26	21	6	0	16	31	12	0	12	56	11	264	3,048
4:05 PM	0	11	29	21	0	20	12	9	0	24	34	5	0	14	49	11	239	3,013
4:10 PM	0	15	31	17	0	17	17	1	1	28	38	11	0	15	59	18	268	3,045
4:15 PM	0	11	36	15	0	17	30	3	0	23	32	7	0	12	55	17	258	3,019
4:20 PM	0	12	28	17	0	26	17	5	0	16	28	14	0	5	60	15	243	3,009
4:25 PM	0	12	20	24	0	27	28	7	0	18	36	9	0	10	40	8	239	3,035
4:30 PM	0	13	27	21	0	14	28	5	0	12	42	8	0	9	77	4	260	3,053
4:35 PM	0	15	37	24	0	14	30	6	1	28	25	8	0	18	48	10	264	3,036
4:40 PM	0	19	22	26	0	26	19	4	0	30	35	5	0	28	71	10	295	3,020
4:45 PM	0	14	29	17	0	21	28	5	0	13	26	8	0	16	61	9	247	2,962
4:50 PM	0	12	36	19	0	8	26	3	0	20	27	9	0	12	56	7	235	2,968
4:55 PM	0	13	27	17	0	23	26	3	0	16	25	10	0	9	57	10	236	2,961
5:00 PM	0	13	32	19	0	17	20	9	0	12	31	9	0	10	47	10	229	2,944
5:05 PM	0	15	37	35	0	28	29	3	0	16	33	9	0	11	45	10	271	
5:10 PM	0	12	33	25	0	21	18	5	0	6	32	9	0	11	59	11	242	
5:15 PM	0	22	23	20	0	22	20	5	0	23	22	6	0	16	60	9	248	
5:20 PM	0	16	23	21	0	17	26	5	0	16	48	16	0	7	64	10	269	
5:25 PM	0	12	31	22	0	19	20	5	0	22	32	7	0	11	63	13	257	
5:30 PM	0	16	18	13	0	28	29	4	0	13	37	9	0	7	56	13	243	
5:35 PM	0	20	31	22	0	23	30	1	0	18	21	7	0	13	54	8	248	
5:40 PM	0	11	26	17	0	23	29	6	0	9	19	11	0	12	68	6	237	
5:45 PM	0	11	33	29	0	17	23	2	0	18	22	14	0	16	55	13	253	
5:50 PM	0	8	20	16	0	14	21	6	2	30	40	15	0	9	40	7	228	
5:55 PM	0	7	27	11	0	17	22	2	0	11	30	9	0	11	61	11	219	
Count Total	0	326	695	486	0	485	569	110	4	438	746	227	0	294	1,361	251	5,992	
Peak Hour	0	176	357	266	0	230	290	58	1	214	378	104	0	158	708	113	3,053	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	8	6	3	2	19	4:00 PM	0	0	0	0	0	4:00 PM	0	2	1	0	3
4:05 PM	3	6	2	4	15	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	8	3	1	12	4:10 PM	0	0	0	0	0	4:10 PM	0	0	1	0	1
4:15 PM	0	6	1	0	7	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	3	5	4	5	17	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	2	2
4:25 PM	1	3	2	3	9	4:25 PM	0	0	0	0	0	4:25 PM	0	1	0	0	1
4:30 PM	5	5	3	2	15	4:30 PM	0	0	0	0	0	4:30 PM	0	1	0	0	1
4:35 PM	2	0	4	3	9	4:35 PM	0	0	0	0	0	4:35 PM	0	1	0	0	1
4:40 PM	4	2	2	3	11	4:40 PM	0	0	0	0	0	4:40 PM	1	0	0	1	2
4:45 PM	3	2	1	4	10	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	2	7	4	1	14	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	1	1
4:55 PM	3	3	3	1	10	4:55 PM	0	0	0	0	0	4:55 PM	0	2	1	0	3
5:00 PM	4	1	1	3	9	5:00 PM	0	0	0	0	0	5:00 PM	1	0	1	1	3
5:05 PM	3	4	3	7	17	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	5	6	3	15	5:10 PM	0	0	0	0	0	5:10 PM	1	1	0	0	2
5:15 PM	1	2	1	1	5	5:15 PM	0	0	0	0	0	5:15 PM	2	2	0	1	5
5:20 PM	4	4	3	3	14	5:20 PM	0	1	0	0	1	5:20 PM	1	1	0	0	2
5:25 PM	2	3	0	3	8	5:25 PM	0	0	0	0	0	5:25 PM	1	2	1	1	5
5:30 PM	1	0	1	6	8	5:30 PM	0	0	0	0	0	5:30 PM	2	0	0	1	3
5:35 PM	4	2	6	2	14	5:35 PM	0	0	0	1	1	5:35 PM	0	0	0	0	0
5:40 PM	3	1	2	5	11	5:40 PM	0	0	0	0	0	5:40 PM	0	1	0	0	1
5:45 PM	3	0	2	3	8	5:45 PM	0	0	0	0	0	5:45 PM	2	1	0	0	3
5:50 PM	1	3	1	2	7	5:50 PM	0	0	0	1	1	5:50 PM	0	1	0	0	1
5:55 PM	2	2	0	3	7	5:55 PM	0	0	0	0	0	5:55 PM	0	0	1	0	1
Count Total	63	80	58	70	271	Count Total	0	1	0	2	3	Count Total	11	16	6	8	41
Peak Hour	34	38	31	34	137	Peak Hour	0	1	0	0	1	Peak Hour	7	10	3	5	25

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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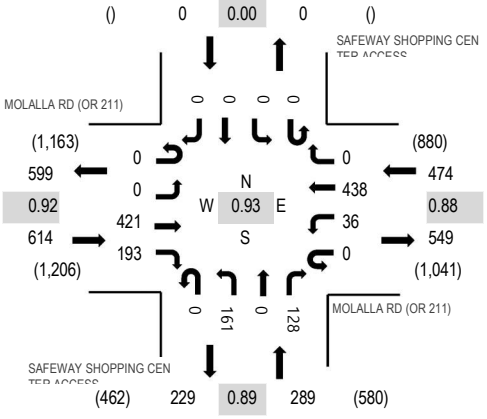
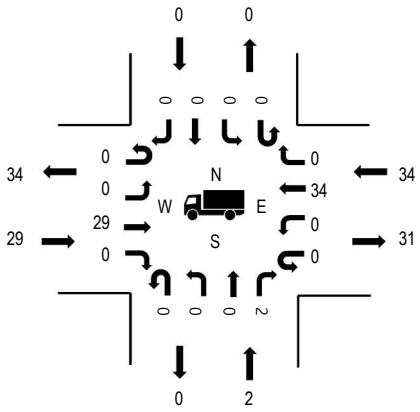
Location: 2 SAFEWAY SHOPPING CENTER ACCESS & MOLALLA RD (OR 211) PM
Date: Thursday, September 7, 2023
Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes: 04:35 PM - 04:50 PM

Peak Hour

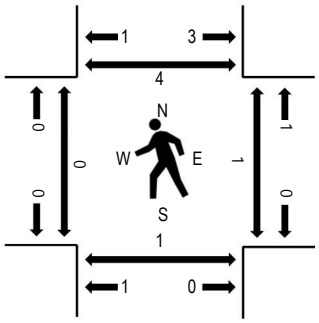
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.7%	0.92
WB	7.2%	0.88
NB	0.7%	0.89
SB	0.0%	0.00
All	4.7%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				SAFEWAY SHOPPING CENTER ACCESS Northbound				SAFEWAY SHOPPING CENTER ACCESS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	40	20	0	2	34	0	0	14	0	17	0	0	0	0	127	1,373
4:05 PM	0	0	30	21	0	5	21	0	0	13	0	5	0	0	0	0	95	1,354
4:10 PM	0	0	37	18	0	6	33	0	0	13	0	11	0	0	0	0	118	1,377
4:15 PM	0	0	37	17	0	1	27	0	0	19	0	9	0	0	0	0	110	1,361
4:20 PM	0	0	35	13	0	2	34	0	0	17	0	10	0	0	0	0	111	1,354
4:25 PM	0	0	24	13	0	2	44	0	0	17	0	6	0	0	0	0	106	1,356
4:30 PM	0	0	31	11	0	6	36	0	0	7	0	12	0	0	0	0	103	1,366
4:35 PM	0	0	46	17	0	5	42	0	0	7	0	11	0	0	0	0	128	1,362
4:40 PM	0	0	38	19	0	2	42	0	0	17	0	10	0	0	0	0	128	1,350
4:45 PM	0	0	32	17	0	4	37	0	0	16	0	9	0	0	0	0	115	1,328
4:50 PM	0	0	36	24	0	1	24	0	0	13	0	9	0	0	0	0	107	1,322
4:55 PM	0	0	34	12	0	4	38	0	0	14	0	23	0	0	0	0	125	1,313
5:00 PM	0	0	39	12	0	0	35	0	0	11	0	11	0	0	0	0	108	1,293
5:05 PM	0	0	32	20	0	3	46	0	0	10	0	7	0	0	0	0	118	
5:10 PM	0	0	38	16	0	0	25	0	0	17	0	6	0	0	0	0	102	
5:15 PM	0	0	32	13	0	3	33	0	0	14	0	8	0	0	0	0	103	
5:20 PM	0	0	33	15	0	5	38	0	0	16	0	6	0	0	0	0	113	
5:25 PM	0	0	26	23	0	8	34	0	0	16	0	9	0	0	0	0	116	
5:30 PM	0	0	26	8	0	0	34	0	0	22	0	9	0	0	0	0	99	
5:35 PM	0	0	29	21	0	4	43	0	0	9	0	10	0	0	0	0	116	
5:40 PM	0	0	36	11	0	2	32	0	0	20	0	5	0	0	0	0	106	
5:45 PM	0	0	40	22	0	1	21	0	0	18	0	7	0	0	0	0	109	
5:50 PM	0	0	31	13	0	3	29	0	0	14	0	8	0	0	0	0	98	
5:55 PM	0	0	32	16	0	1	28	0	0	19	0	9	0	0	0	0	105	
Count Total	0	0	814	392	0	70	810	0	0	353	0	227	0	0	0	0	2,666	
Peak Hour	0	0	421	193	0	36	438	0	0	161	0	128	0	0	0	0	1,377	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

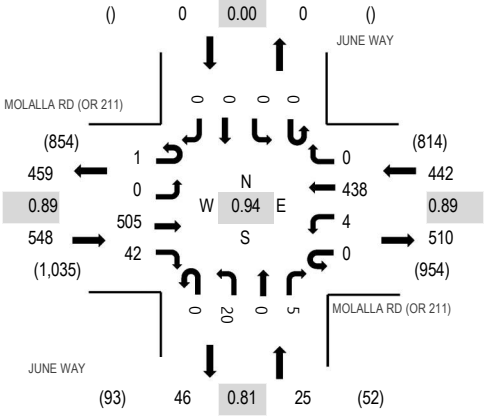
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	5	0	2	0	7	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	3	0	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	0	3	0	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	0	2	0	3	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	5	0	2	0	7	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	2	2
4:25 PM	1	0	4	0	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	2	0	4	0	6	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	1	4	0	7	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	3	0	3	0	6	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	1	1
4:45 PM	2	0	2	0	4	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	4	0	3	0	7	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	3	1	3	0	7	4:55 PM	0	0	0	0	0	4:55 PM	0	0	1	1	2
5:00 PM	3	0	2	0	5	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	0	2	0	4	5:05 PM	0	0	0	0	0	5:05 PM	0	1	0	1	2
5:10 PM	4	1	5	0	10	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	2	0	1	0	3	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	1	1
5:20 PM	2	1	2	0	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	1	1	2
5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	4	0	4	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	3	0	4	0	7	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	5	0	1	0	6	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	2	0	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	1	0	2	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	2	0	1	0	3	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	56	4	60	0	120	Count Total	0	0	0	0	0	Count Total	0	1	2	7	10
Peak Hour	29	2	34	0	65	Peak Hour	0	0	0	0	0	Peak Hour	0	1	1	5	7

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

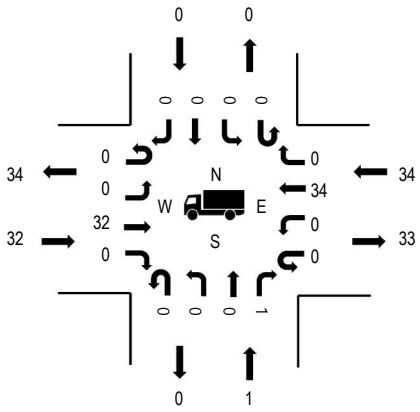
Location: 3 JUNE WAY & MOLALLA RD (OR 211) PM
Date: Thursday, September 7, 2023
Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour

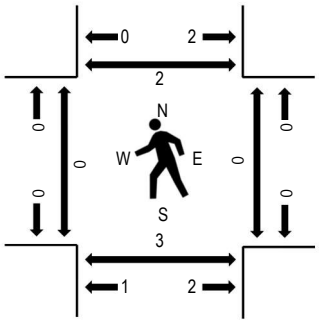
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	5.8%	0.89
WB	7.7%	0.89
NB	4.0%	0.81
SB	0.0%	0.00
All	6.6%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				JUNE WAY Northbound				JUNE WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	46	5	0	1	29	0	0	5	0	0	0	0	0	0	86	995
4:05 PM	0	0	35	4	0	0	21	0	0	2	0	0	0	0	0	0	62	1,002
4:10 PM	0	0	47	2	0	2	37	0	0	2	0	0	0	0	0	0	90	1,015
4:15 PM	0	0	40	5	0	0	26	0	0	3	0	0	0	0	0	0	74	992
4:20 PM	0	0	44	0	0	1	37	0	0	1	0	3	0	0	0	0	86	995
4:25 PM	0	0	29	1	0	0	43	0	0	0	0	0	0	0	0	0	73	988
4:30 PM	0	0	38	4	0	0	43	0	0	2	0	0	0	0	0	0	87	996
4:35 PM	0	0	48	5	0	0	34	0	0	3	0	0	0	0	0	0	90	977
4:40 PM	0	0	42	7	0	1	42	0	0	1	0	1	0	0	0	0	94	974
4:45 PM	0	0	38	5	0	0	36	0	0	2	0	0	0	0	0	0	81	949
4:50 PM	0	0	41	5	0	0	25	0	0	0	0	0	0	0	0	0	71	937
4:55 PM	0	0	55	2	0	0	40	0	0	4	0	0	0	0	0	0	101	939
5:00 PM	0	0	45	6	0	0	39	0	0	2	0	1	0	0	0	0	93	906
5:05 PM	1	0	38	0	0	0	36	0	0	0	0	0	0	0	0	0	75	
5:10 PM	0	0	36	5	0	0	25	0	0	1	0	0	0	0	0	0	67	
5:15 PM	0	0	40	2	0	0	34	0	0	1	0	0	0	0	0	0	77	
5:20 PM	0	0	36	2	0	0	38	0	0	3	0	0	0	0	0	0	79	
5:25 PM	0	0	33	4	0	1	42	0	0	1	0	0	0	0	0	0	81	
5:30 PM	0	0	32	3	0	0	30	0	0	2	0	1	0	0	0	0	68	
5:35 PM	1	0	34	4	0	0	45	0	0	2	0	1	0	0	0	0	87	
5:40 PM	0	0	36	3	0	0	27	0	0	3	0	0	0	0	0	0	69	
5:45 PM	0	0	44	4	0	0	20	0	0	1	0	0	0	0	0	0	69	
5:50 PM	0	0	35	3	0	0	33	0	0	2	0	0	0	0	0	0	73	
5:55 PM	0	0	35	5	0	1	25	0	0	2	0	0	0	0	0	0	68	
Count Total	2	0	947	86	0	7	807	0	0	45	0	7	0	0	0	0	1,901	
Peak Hour	1	0	505	42	0	4	438	0	0	20	0	5	0	0	0	0	1,015	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

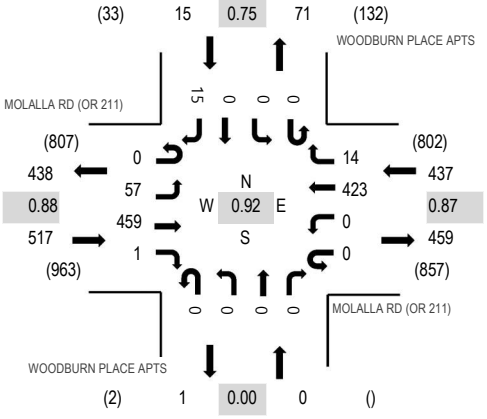
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	6	1	3	0	10	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	2	0	4	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	0	3	0	4	4:10 PM	0	0	0	0	0	4:10 PM	0	2	0	0	2
4:15 PM	1	0	4	0	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	5	1	0	0	6	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	1	0	4	0	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	1	1
4:30 PM	2	0	3	0	5	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	3	0	4	0	7	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	3	0	3	0	6	4:40 PM	0	0	1	0	1	4:40 PM	0	0	0	0	0
4:45 PM	2	0	3	0	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	0	2	0	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	5	0	3	0	8	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	3	0	5	0	8	5:00 PM	0	0	0	0	0	5:00 PM	0	1	0	0	1
5:05 PM	3	0	0	0	3	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	1	1
5:10 PM	3	0	5	0	8	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	2	0	1	0	3	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	1	0	2	0	3	5:20 PM	0	0	1	0	1	5:20 PM	0	0	0	0	0
5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	4	0	4	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	2	0	3	0	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	5	0	1	0	6	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	2	0	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	1	0	2	5:50 PM	0	0	0	0	0	5:50 PM	0	1	0	0	1
5:55 PM	2	0	1	0	3	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	57	2	59	0	118	Count Total	0	0	2	0	2	Count Total	0	4	0	2	6
Peak Hour	32	1	34	0	67	Peak Hour	0	0	1	0	1	Peak Hour	0	3	0	2	5

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

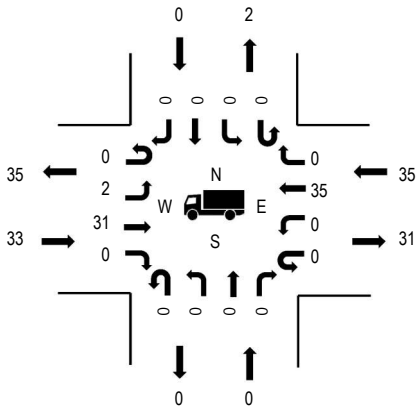
Location: 4 WOODBURN PLACE APTS & MOLALLA RD (OR 211) PM
Date: Thursday, September 7, 2023
Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes: 04:55 PM - 05:10 PM

Peak Hour

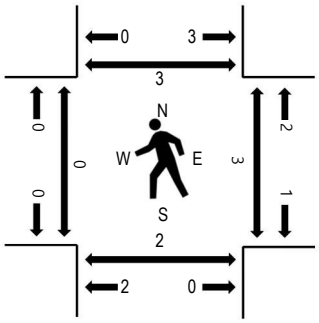
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	6.4%	0.88
WB	8.0%	0.87
NB	0.0%	0.00
SB	0.0%	0.75
All	7.0%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				WOODBURN PLACE APTS Northbound				WOODBURN PLACE APTS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	1	44	0	0	0	30	2	0	0	0	0	0	1	0	0	78	938
4:05 PM	0	1	34	0	0	0	21	0	0	0	0	0	0	0	0	1	57	953
4:10 PM	0	2	42	0	0	0	38	0	0	0	0	0	0	0	0	0	82	969
4:15 PM	0	11	31	0	0	0	24	0	0	0	0	0	0	0	0	1	67	947
4:20 PM	0	2	47	0	0	0	38	2	0	0	0	0	0	0	0	1	90	961
4:25 PM	0	2	27	0	0	0	44	1	0	0	0	0	0	0	0	2	76	943
4:30 PM	0	3	35	0	0	0	38	3	0	0	0	0	0	0	0	1	80	946
4:35 PM	0	6	40	0	0	0	36	0	0	0	0	0	0	0	0	0	82	928
4:40 PM	0	7	38	0	0	0	40	2	0	0	0	0	0	0	0	0	87	925
4:45 PM	0	7	32	0	0	0	35	1	0	0	0	0	0	0	0	1	76	903
4:50 PM	0	4	34	0	0	0	23	0	0	0	0	0	0	0	0	4	65	890
4:55 PM	0	7	51	0	0	0	36	2	0	0	0	0	0	0	0	2	98	895
5:00 PM	0	4	45	0	0	0	40	3	0	0	0	0	0	0	0	1	93	860
5:05 PM	0	2	37	1	0	0	31	0	0	0	0	0	0	0	0	2	73	
5:10 PM	0	1	33	0	0	0	23	1	0	0	0	0	0	1	0	1	60	
5:15 PM	0	7	36	0	0	0	37	1	0	0	0	0	0	0	0	0	81	
5:20 PM	0	6	31	0	0	0	31	2	0	0	0	0	0	0	0	2	72	
5:25 PM	0	2	33	0	0	0	43	1	0	0	0	0	0	0	0	0	79	
5:30 PM	0	1	31	1	0	0	27	0	0	0	0	0	0	0	0	2	62	
5:35 PM	0	3	30	0	0	0	41	1	0	0	0	0	0	0	0	4	79	
5:40 PM	0	7	31	0	0	0	26	0	0	0	0	0	0	0	0	1	65	
5:45 PM	0	8	32	0	0	0	22	0	0	0	0	0	0	0	0	1	63	
5:50 PM	0	1	36	0	0	0	27	3	0	0	0	0	0	0	0	3	70	
5:55 PM	0	11	25	0	0	0	25	1	0	0	0	0	0	0	0	1	63	
Count Total	0	106	855	2	0	0	776	26	0	0	0	0	0	2	0	31	1,798	
Peak Hour	0	57	459	1	0	0	423	14	0	0	0	0	0	0	0	15	969	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

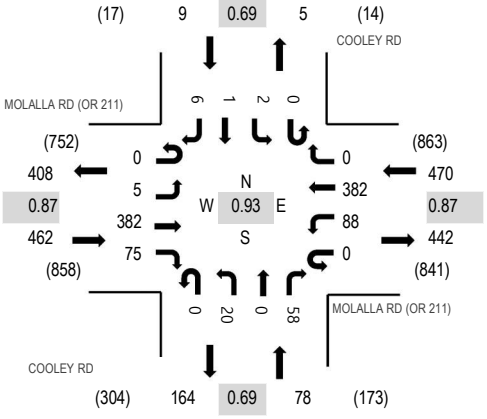
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	5	0	3	0	8	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	3	0	2	0	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	0	3	0	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	0	4	0	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	6	0	1	0	7	4:20 PM	0	0	0	0	0	4:20 PM	0	1	2	0	3
4:25 PM	1	0	4	0	5	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	2	2
4:30 PM	2	0	2	0	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	1	1
4:35 PM	2	0	5	0	7	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	4	0	2	0	6	4:40 PM	0	0	1	0	1	4:40 PM	0	0	0	0	0
4:45 PM	2	0	3	0	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	2	0	4	0	6	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	5	0	1	0	6	4:55 PM	0	0	0	0	0	4:55 PM	0	1	1	0	2
5:00 PM	4	0	5	0	9	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	3	0	1	0	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	4	0	4	0	8	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	1	1
5:15 PM	2	0	2	0	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	1	1
5:20 PM	1	0	1	0	2	5:20 PM	0	0	1	0	1	5:20 PM	0	0	0	1	1
5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	1	1
5:30 PM	0	0	4	0	4	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	2	0	3	0	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	5	0	1	0	6	5:40 PM	0	0	0	0	0	5:40 PM	1	0	0	0	1
5:45 PM	0	0	3	0	3	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	2	0	1	0	3	5:55 PM	0	0	0	0	0	5:55 PM	1	1	1	0	3
Count Total	58	0	59	0	117	Count Total	0	0	2	0	2	Count Total	2	3	4	7	16
Peak Hour	33	0	35	0	68	Peak Hour	0	0	1	0	1	Peak Hour	0	2	3	3	8

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

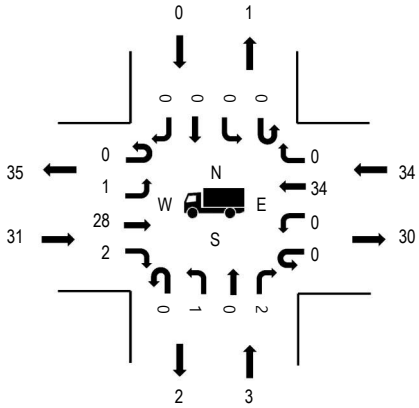
Location: 5 COOLEY RD & MOLALLA RD (OR 211) PM
Date: Thursday, September 7, 2023
Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes: 04:55 PM - 05:10 PM

Peak Hour

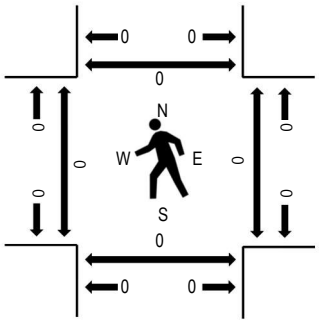
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	6.7%	0.87
WB	7.2%	0.87
NB	3.8%	0.69
SB	0.0%	0.69
All	6.7%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	MOLALLA RD (OR 211) Eastbound				MOLALLA RD (OR 211) Westbound				COOLEY RD Northbound				COOLEY RD Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	35	10	0	3	31	0	0	1	0	4	0	0	0	0	84	1,004
4:05 PM	0	0	30	4	0	16	19	0	0	0	0	3	0	1	0	1	74	1,015
4:10 PM	0	1	36	7	0	7	32	0	0	2	0	4	0	0	0	1	90	1,019
4:15 PM	0	0	27	2	0	6	21	0	0	4	0	9	0	0	0	0	69	998
4:20 PM	0	0	38	8	0	11	41	0	0	0	0	4	0	1	0	0	103	1,016
4:25 PM	0	0	21	8	0	6	39	0	0	2	0	3	0	0	0	0	79	980
4:30 PM	0	0	29	7	0	6	34	0	0	2	0	2	0	0	0	1	81	980
4:35 PM	0	1	37	2	0	10	32	0	0	1	0	4	0	0	0	0	87	977
4:40 PM	0	1	28	8	0	5	35	0	0	2	0	9	0	0	0	2	90	980
4:45 PM	0	0	28	2	0	6	32	0	0	2	0	4	0	0	0	1	75	957
4:50 PM	0	2	30	6	0	8	19	0	0	1	0	5	0	1	0	0	72	941
4:55 PM	0	0	40	9	0	12	29	0	0	3	0	6	0	0	0	1	100	943
5:00 PM	0	0	37	8	0	6	39	0	0	1	0	4	0	0	0	0	95	907
5:05 PM	0	0	31	8	0	5	29	0	0	0	0	4	0	0	1	0	78	
5:10 PM	0	1	23	7	0	10	24	0	0	0	0	3	0	0	1	0	69	
5:15 PM	0	0	29	6	0	5	32	0	0	1	0	12	0	0	2	0	87	
5:20 PM	0	1	27	3	0	2	26	0	0	3	0	5	0	0	0	0	67	
5:25 PM	0	0	24	3	0	4	37	0	0	2	0	9	0	0	0	0	79	
5:30 PM	0	1	27	8	0	8	24	1	0	3	0	5	0	0	0	1	78	
5:35 PM	0	1	25	4	0	7	34	0	0	6	0	12	0	0	0	1	90	
5:40 PM	0	4	22	6	0	4	24	0	0	1	0	6	0	0	0	0	67	
5:45 PM	0	0	26	6	0	2	21	0	0	0	0	4	0	0	0	0	59	
5:50 PM	0	0	29	5	0	7	24	0	0	4	0	5	0	0	0	0	74	
5:55 PM	0	0	26	3	0	4	24	0	0	0	0	6	0	1	0	0	64	
Count Total	0	13	705	140	0	160	702	1	0	41	0	132	0	4	4	9	1,911	
Peak Hour	0	5	382	75	0	88	382	0	0	20	0	58	0	2	1	6	1,019	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	5	1	2	0	8	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	3	0	5	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	0	3	0	5	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	2	3	0	5	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	7	0	2	0	9	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	1	0	3	0	4	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	2	0	2	0	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	0	5	0	7	4:35 PM	0	0	0	1	1	4:35 PM	0	0	0	0	0
4:40 PM	2	0	2	0	4	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	2	0	3	0	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	2	0	4	0	6	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	4	1	1	0	6	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	4	0	5	0	9	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	3	0	1	0	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	4	0	4	0	8	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	2	0	2	0	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	1	0	1	0	2	5:20 PM	0	1	0	0	1	5:20 PM	0	0	0	0	0
5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	5	0	5	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	1	2	0	4	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	4	0	2	0	6	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	3	0	3	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	0	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	4	0	1	0	5	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	56	5	59	0	120	Count Total	0	1	0	1	2	Count Total	0	0	0	0	0
Peak Hour	31	3	34	0	68	Peak Hour	0	0	0	1	1	Peak Hour	0	0	0	0	0

24-001 OR99E; MP 34.03; PACIFIC HIGHWAY EAST NO. 81; 0.11 miles south of NE Belle Passi Rd

		2019	2018	2017	2016	2015	(3-Yr Average)	
June		117	109	109	111	113	111.0	1.000
July		114	109	113	108	113	110.0	1.009
August		112	109	117	109	109	110.0	1.009
September		109	106	109	106	105	107.0	1.037

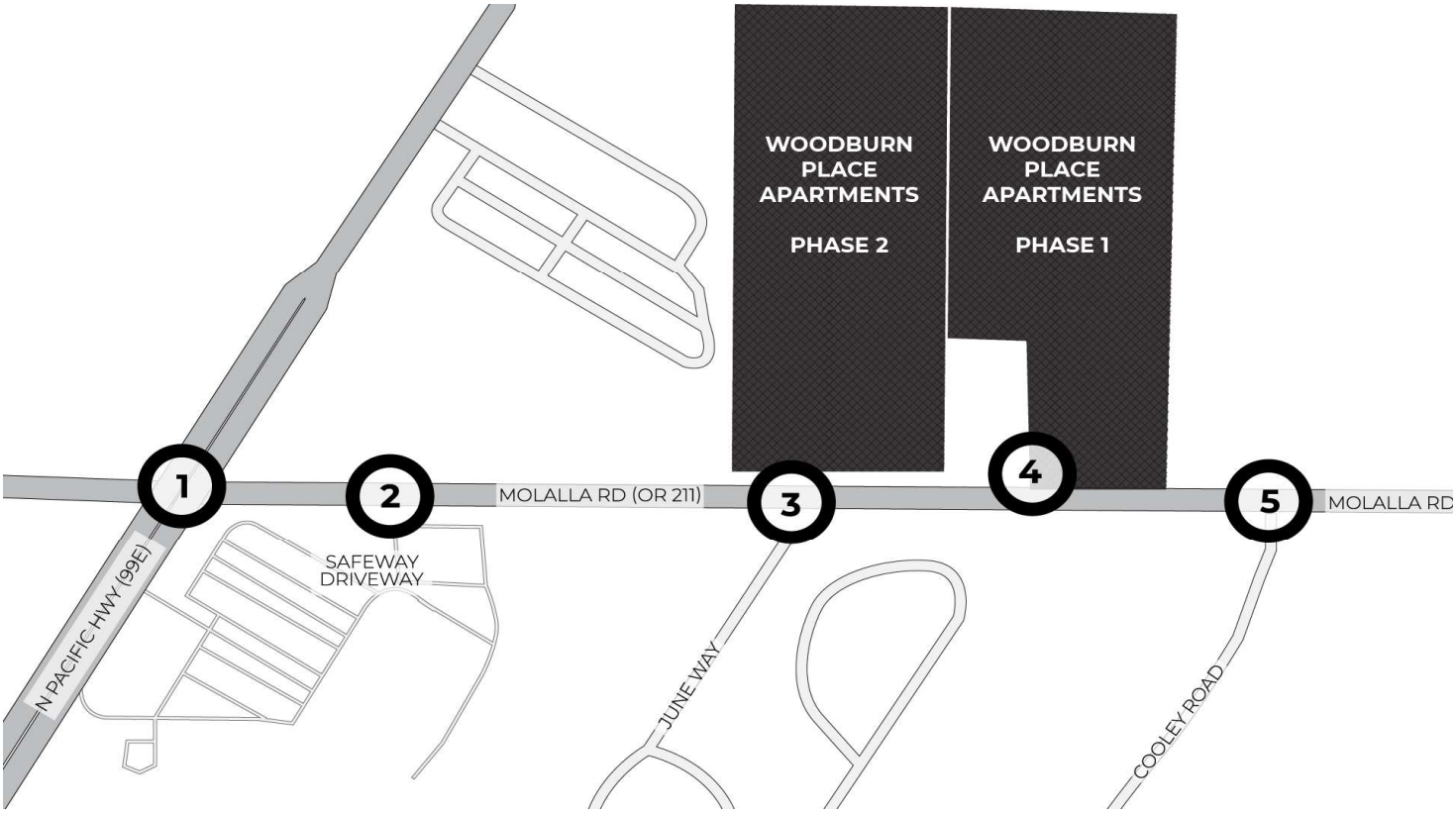
	2021	2019	2018	2017	2016		(3-Yr Average)		
June	112	117	109	109	111		110.7	1.006	USE
July	112	114	109	113	108		111.3	1.000	
August	112	112	109	117	109		111.0	1.003	
September	108	109	106	109	106		107.7	1.034	

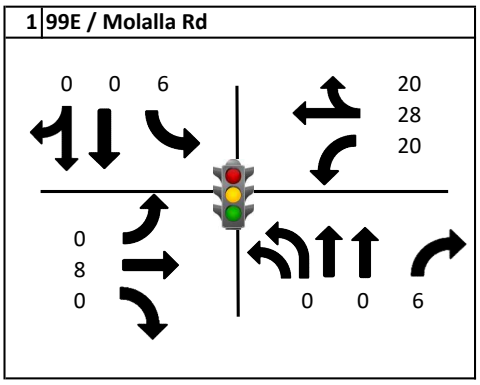
Notes: Year 2020 data is excluded from all calculations

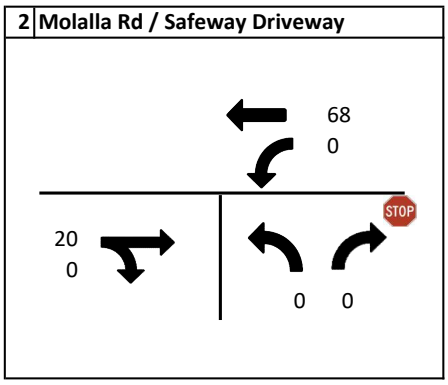
* 2041 Future Volume values may not match 2041 TransGIS/TVT Web volumes due to FHWA requirements that there be no negative growth values. This requirement is not valid in some areas of Oregon.

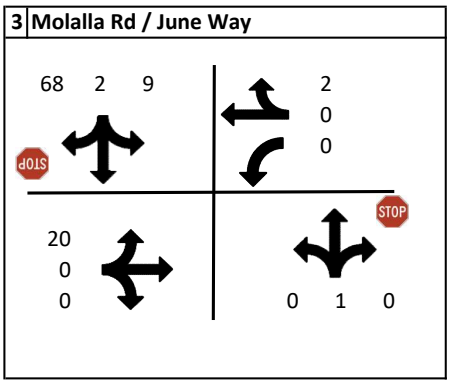
Site id	HWY	MP	DIR	HS	Description	2017	2019	2021	2041*	RSQ		
199	081	31.65	1		North of Woodburn-Estacada Highway (OR211) and Hillsboro-Silverton Highway (OR214) [0.05 mile]		17500		21500	MODEL	1.0%	
200	081	31.80	1		South of Woodburn-Estacada Highway (OR211) [0.10 mile]		20100		27800	MODEL	1.7%	
3235	140	39.24	1		West of Pacific Highway East (OR99E) [0.05 mile]		14100		14000	MODEL	0.0%	1.17%
3446	161	0.15	1		East of Pacific Highway East (OR99E) and Hillsboro-Silverton Highway (OR214) [0.15 mile]		8000		11400	MODEL	1.9%	

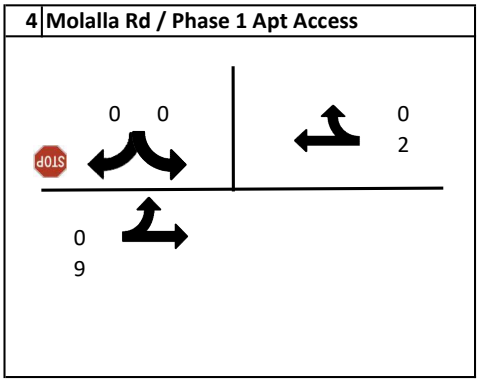
Figure 6: Site Generated Volumes AM Peak Hour











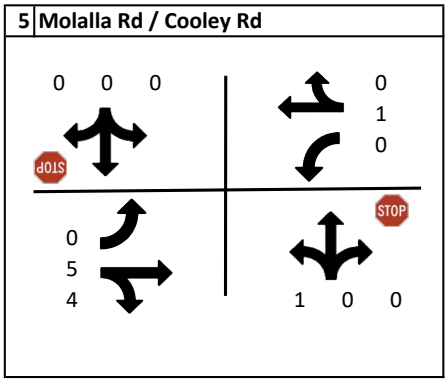
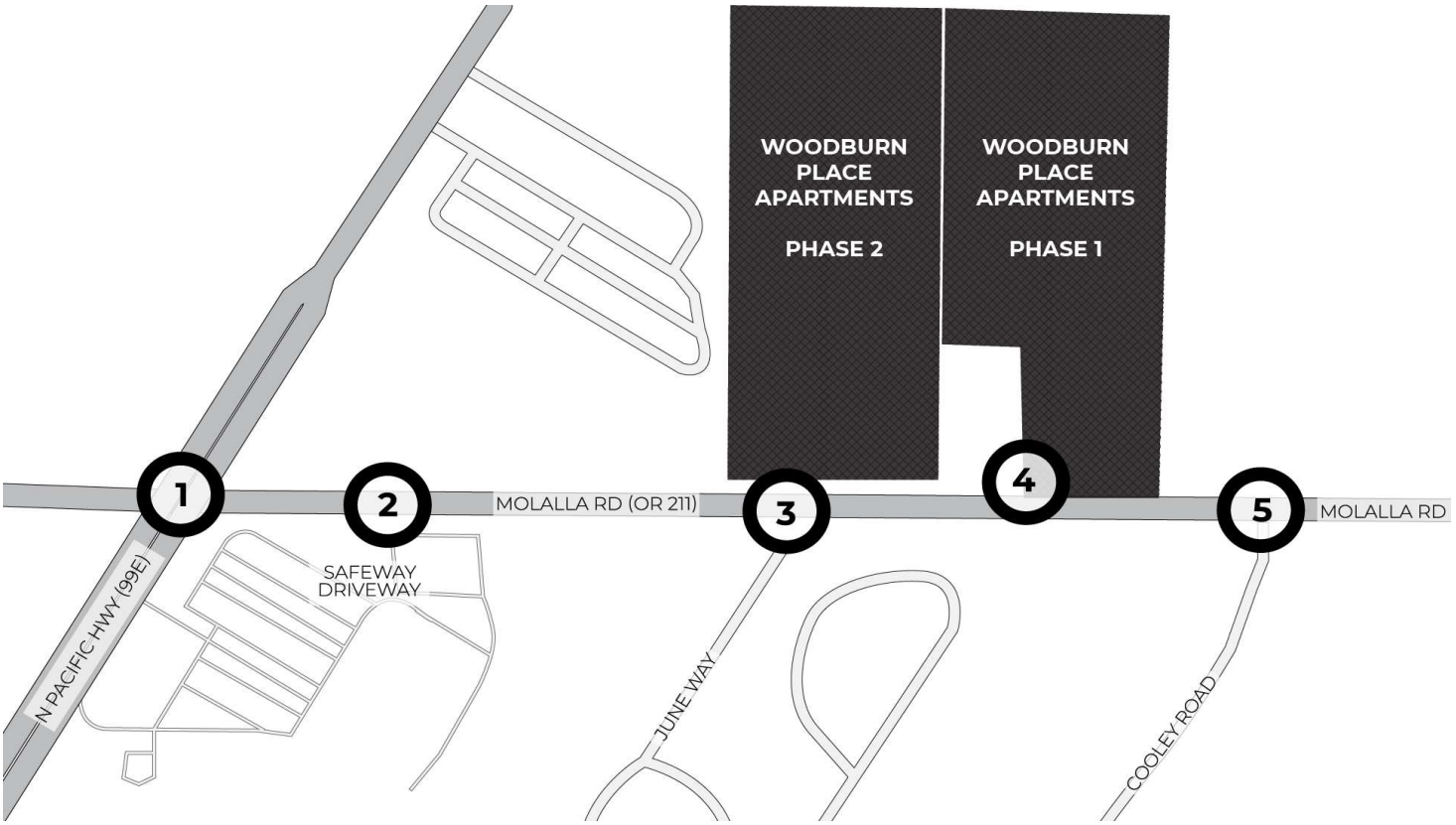
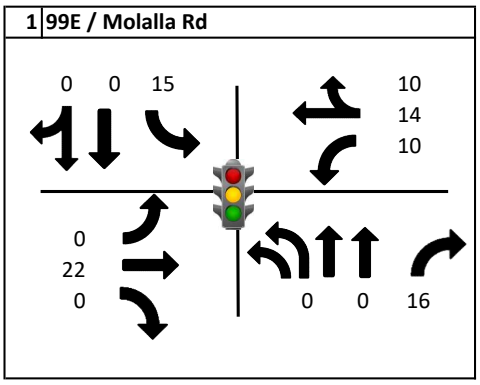
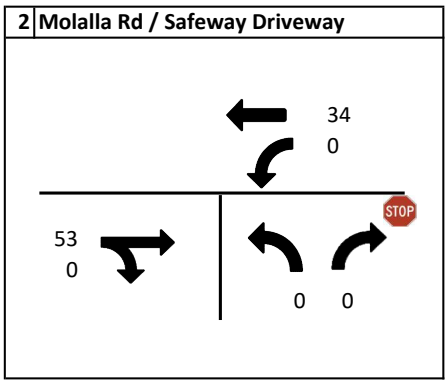
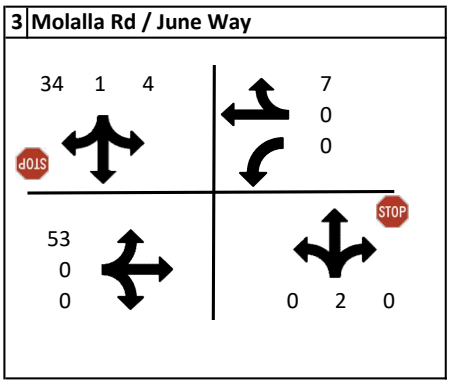


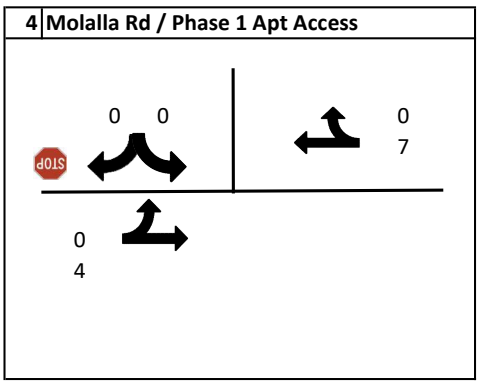
Figure 7: Site Generated Volumes PM Peak Hour

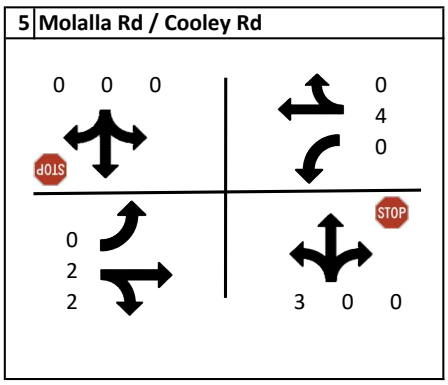










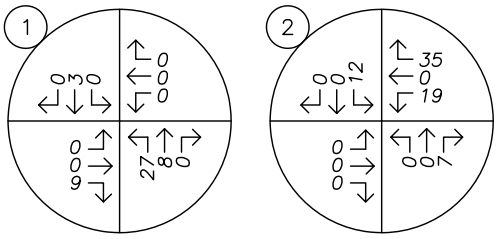


LEGEND

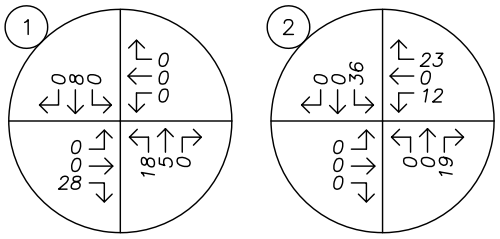
XX% PERCENT OF PROJECT TRIPS

TRIP GENERATION			
	IN	OUT	TOTAL
AM	19	54	73
PM	55	35	90

AM PEAK HOUR



PM PEAK HOUR



SITE TRIP DISTRIBUTION & ASSIGNMENT
Proposed Development Plan – Site Trips
AM & PM Peak Hours

no scale

FIGURE 3

January 10, 2020

Randy Saunders
RSS Architecture, PC
2225 Country Club Rd
Woodburn, OR 97071

ASSOCIATED TRANSPORTATION ENGINEERING & PLANNING INC.

Re: Woodburn Housing Development TIA Letter

Mr Saunders,

At the December 18, 2019 Pre-application meeting with Woodburn officials, they asked the applicant to submit a traffic memo to determine whether or not a traffic impact analysis (TIA) will be required. The Woodburn Development Ordinance is as follows:

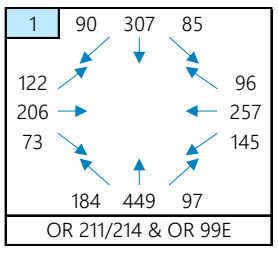
> ***3.04.05 Traffic Impact Analysis***
> *A. A Traffic Impact Analysis (TIA) may be required by the Director prior to the approval of a City access permit when the Director estimates a development proposal may generate either 100 or more additional, peak hour trips, or 1,000 or more additional daily trips, within ten years of a development application.*
> *B. A TIA shall evaluate the traffic impacts projected of a development proposal and the estimated effectiveness of potential traffic impact mitigation measures.*
> *C. The methodology for a TIA shall be consistent with City standards.*

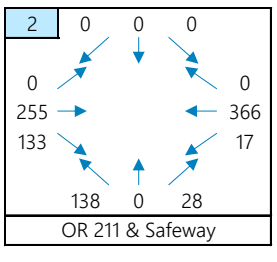
The proposed project is to build three story units with a total 42 apartment units. In the 10th Edition of the ITE Trip Generation Manual, this type of project falls within the Multifamily (Mid-rise) classification, ITE Code 221. Per the ITE the trip rates per unit are: daily - 5.44; AM peak - 0.36; and PM peak - 0.44. Based on these rates the following table compares the estimated site developed trips versus the Woodburn Development Code criteria that triggers a TIA.

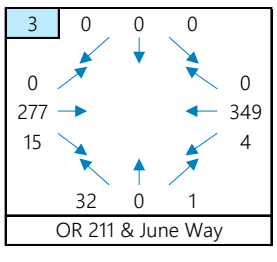
Period	Woodburn Threshold	Site Generation
Daily	1,000	228
AM Peak	100	15
PM Peak	100	18

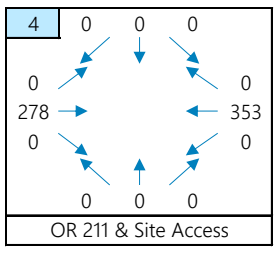
AM PEAK HOUR

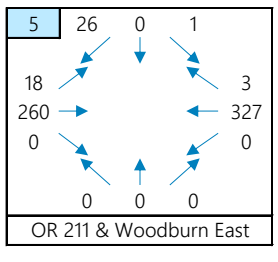
2023 Existing Volumes

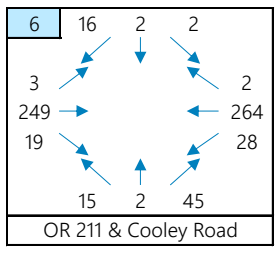




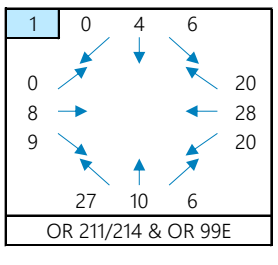


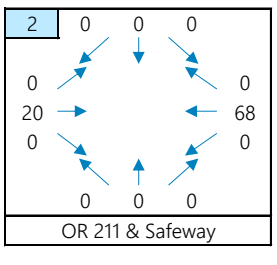


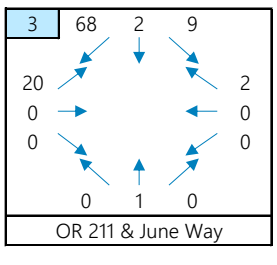


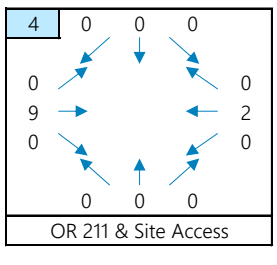


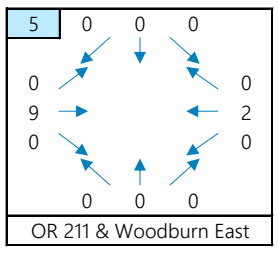
In Process Traffic

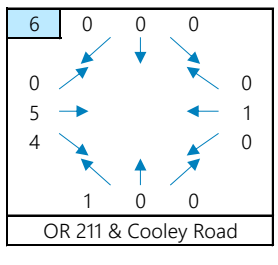




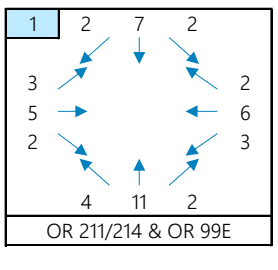


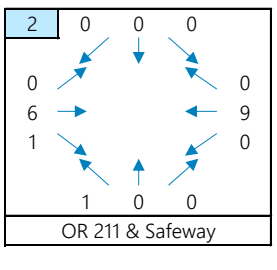


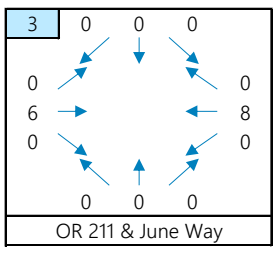


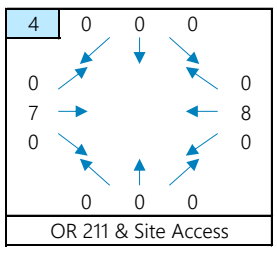


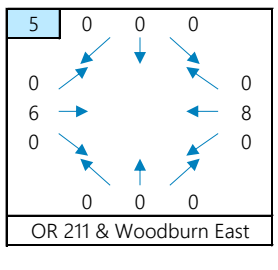
Background Growth

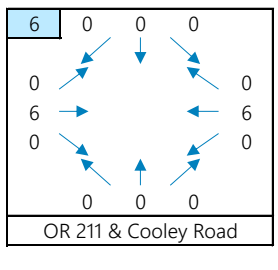




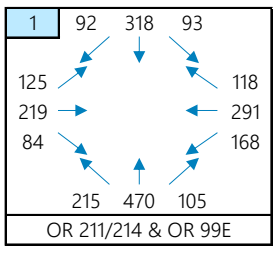


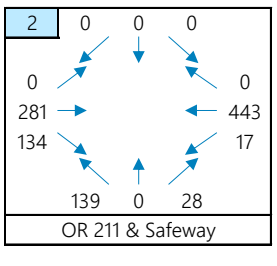


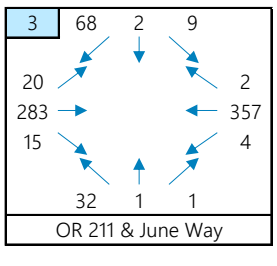


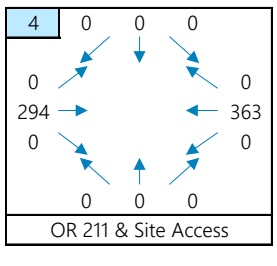


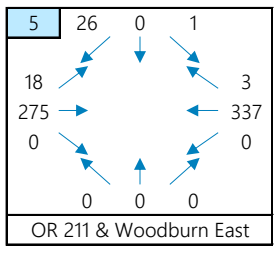
2025 Background Volumes

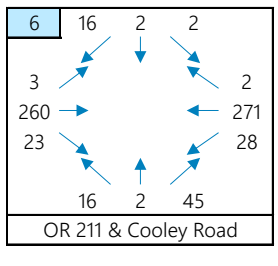




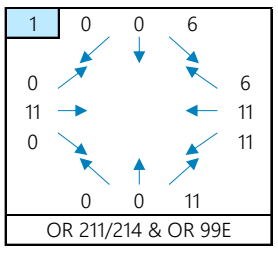


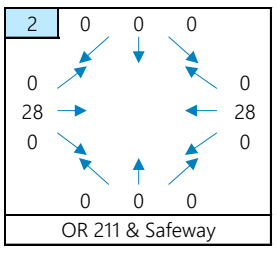


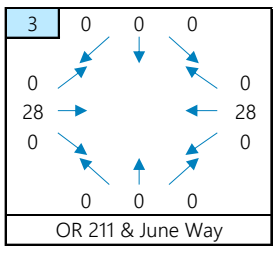


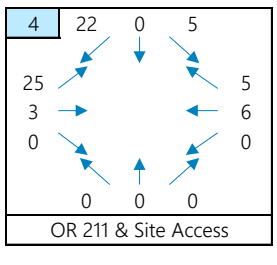


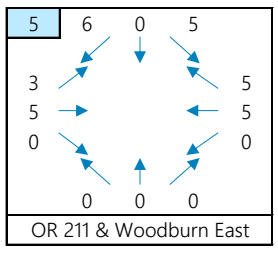
Primary Trips

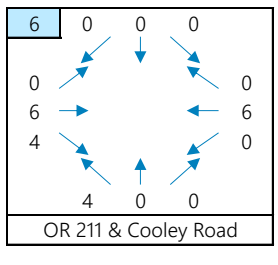




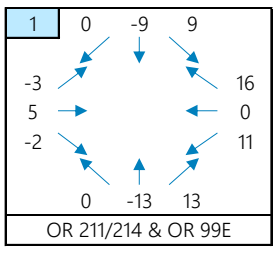


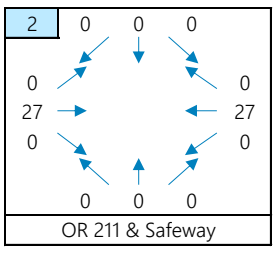


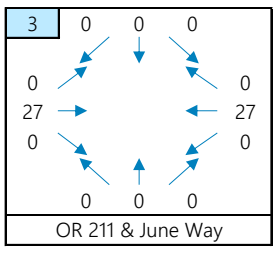


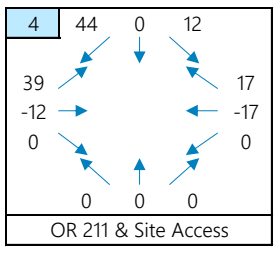


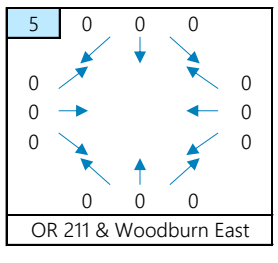
Pass-By Trips

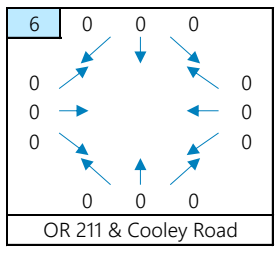




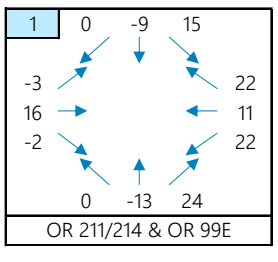


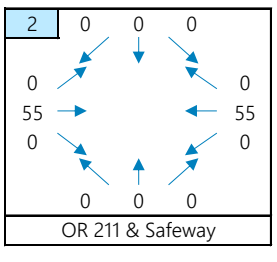


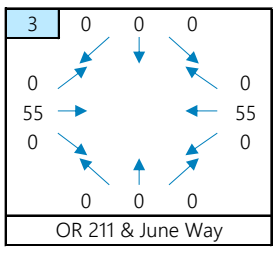


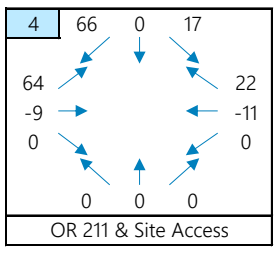


Total Site Trips







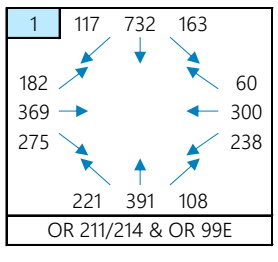


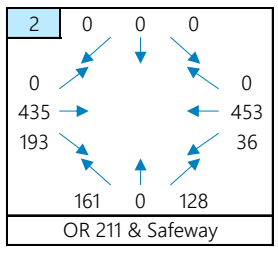
Internal Reassignment

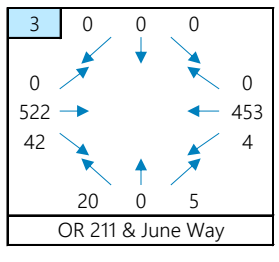
2025 Buildout

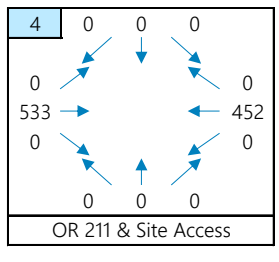
PM PEAK HOUR

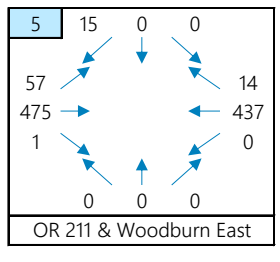
2023 Existing Volumes

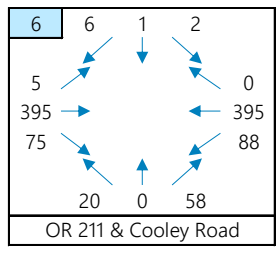




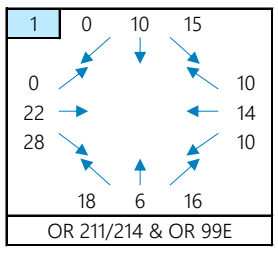


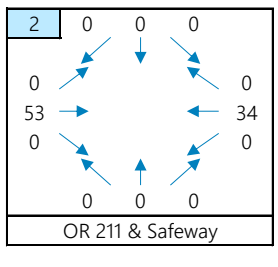


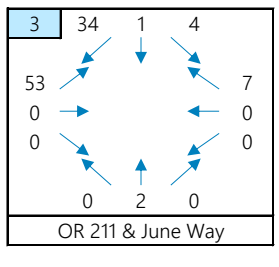


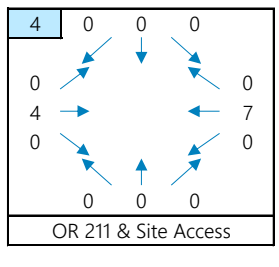


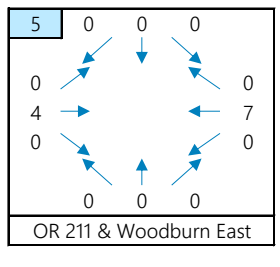
In Process Traffic

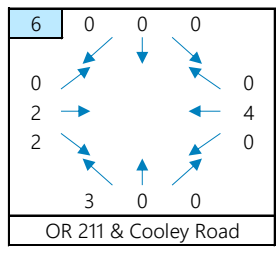




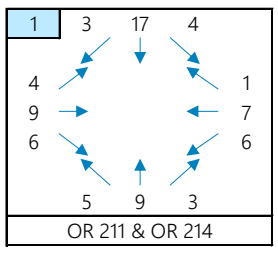


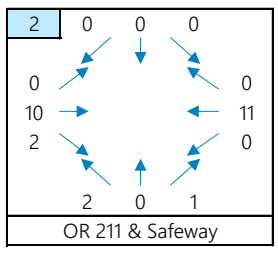


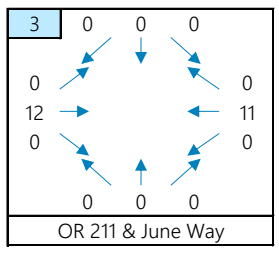


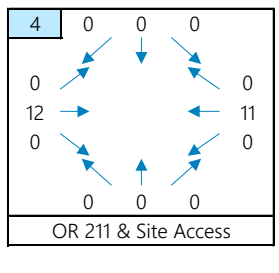


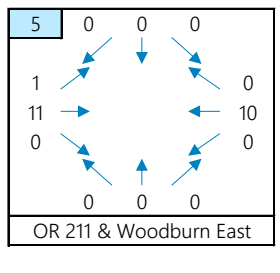
Background Growth

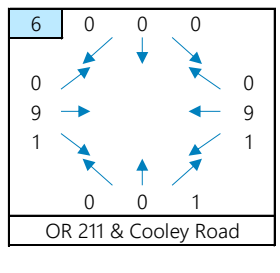




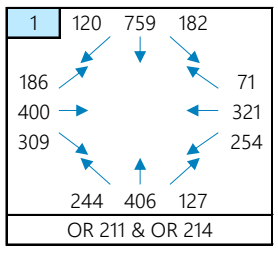


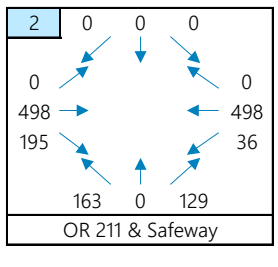


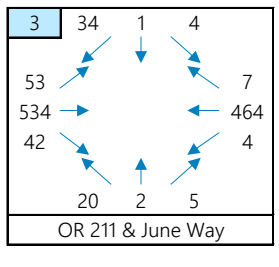


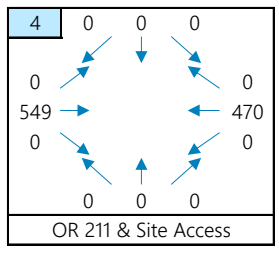


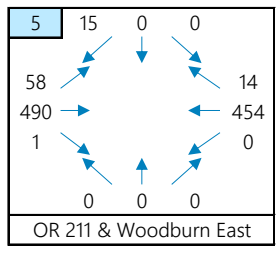
2025 Background Volumes

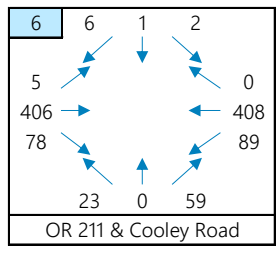




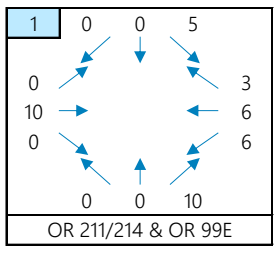


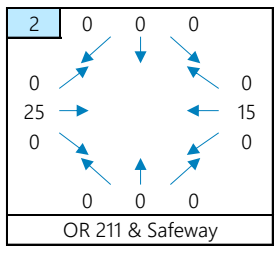


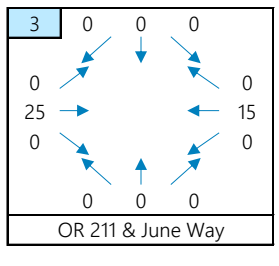


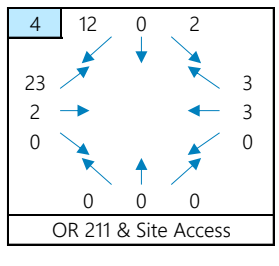


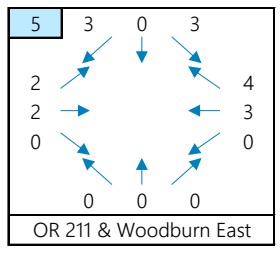
Primary Trips

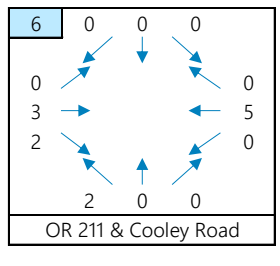




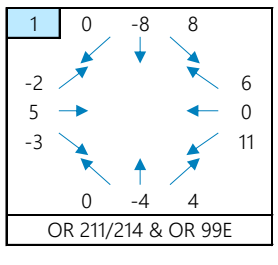


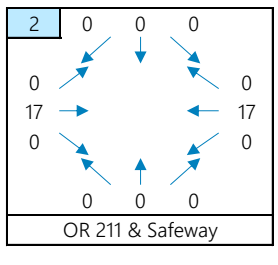


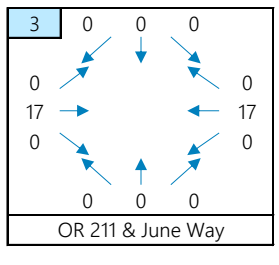


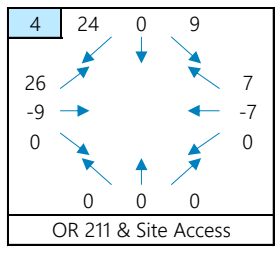


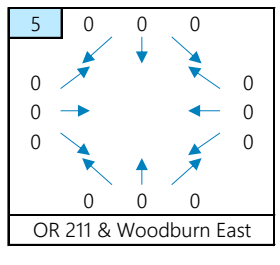
Pass-By Trips

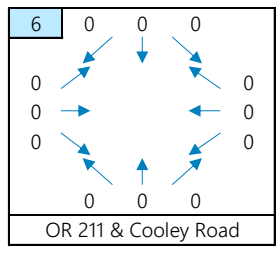




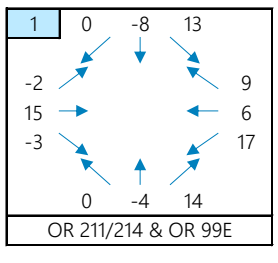


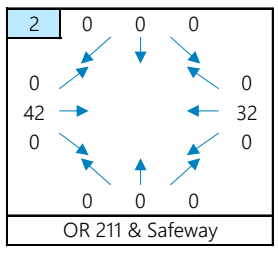


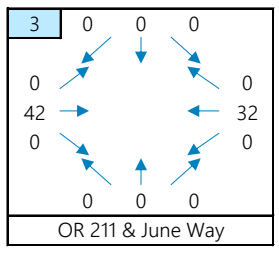


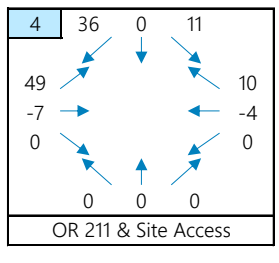


Total Site Trips









Internal Reassignment

2025 Buildout

Appendix C - Safety

Crash History Data

Left-Turn Lane Warrant Analysis

Preliminary Signal Warrant Analysis

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R E A	M J L G	S U N H	W I C R	DATE / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05247	N	N	N	N		12/05/2017	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						TU		PACIFIC HY 99E	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
N						2P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		026	000		29
N						45 9 4.66	-122 49 52.38	008100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	26	F	OR-Y		000	000		00
																							OR<25					
00248	N	N	N	N		01/23/2018	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	RAIN	ANGL-STP	01	NONE 0	TURN-L											08
NONE						TU		PACIFIC HY 99E	NE		TRF SIGNAL	N	WET	TURN		PRVTE	W -NE									000		00
N						7A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	48	F	OR-Y		002,026	000		08
N						45 9 4.67	-122 49 52.39	008100100S00															OR<25					
															01	NONE 0	TURN-L											
																PRVTE	W -NE									000		00
																PSNGR CAR		02	PSNG	INJB	13	F			000	000		00
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		01	DRVR	NONE	38	M	OR-Y		000	000		00
																							OR<25					
02698	N	N	N	N		07/24/2018	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NO RPT						TU		PACIFIC HY 99E	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
N						4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	51	M	OR-Y		026	000		29
N						45 9 4.66	-122 49 52.38	008100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	60	F	OR-Y		000	000		00
																							OR<25					
04933	N	N	N	N		12/23/2018	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NONE						SU		PACIFIC HY 99E	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW									000		00
N						6P			06	1		N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		026	000		29
N						45 9 4.66	-122 49 52.38	008100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	39	M	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		02	PSNG	INJC	00	F			000	000		00
03590	N	N	N	N		10/12/2021	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						TU		PACIFIC HY 99E	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
N						1P			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		026	000		29
N						45 9 4.67	-122 49 52.36	008100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	33	F	OR-Y		000	000		00

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

																	OR<25			
03029	N N N N	07/26/2017	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT								29
NONE		WE		PACIFIC HY 99E	W		TRF SIGNAL	N	DRY	REAR	PRVTE	W -E							000	00
N		3P			06	1		N	DAY	INJ	SEMI TOW		01 DRVR	NONE	48	M	OR-Y	026	000	29
N		45 9 4.66	-122 49 52.38	014000100S00													OR>25			
											02 NONE 0	STOP								
											PRVTE	W -E							011	00
											PSNGR CAR		01 DRVR	INJC	36	M	OR-Y	000	000	00
																	OR>25			
03108	N N N N N N	08/01/2017	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 1	STRGHT								07
CITY		TU		PACIFIC HY 99E	W		L-GRN-SIG	N	DRY	REAR	PRVTE	W -E							000	00
N		1P			06	1		N	DAY	INJ	SEMI TOW		01 DRVR	INJC	55	M	OTH-Y	043,026	000	07
N		45 9 4.66	-122 49 52.38	014000100S00													N-RES			
											02 NONE 0	STOP								
											PRVTE	W -E							011	00
											PSNGR CAR		01 DRVR	INJC	20	F	OR-Y	000	000	00
																	OR<25			
02059	N N N N N N	06/10/2018	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT								27,29
NO RPT		SU		PACIFIC HY 99E	W		TRF SIGNAL	N	DRY	REAR	PRVTE	W -E							000	00
N		4P			06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	37	F	OTH-Y	016,026	038	27,29
N		45 9 4.66	-122 49 52.38	014000100S00													N-RES			
											01 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		02 PSNG	INJC	10	M		000	000	00
											02 NONE 0	STOP								
											PRVTE	W -E							012	00
											PSNGR CAR		01 DRVR	INJC	33	M	OR-Y	000	000	00
																	OR<25			
											02 NONE 0	STOP								
											PRVTE	W -E							012	00
											PSNGR CAR		02 PSNG	INJC	33	F		000	000	00
02894	N N N N	08/05/2018	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT								29
CITY		SU		PACIFIC HY 99E	W		TRF SIGNAL	N	DRY	REAR	PRVTE	W -E							000	00
N		7P			06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	20	M	OR-Y	026	000	29
N		45 9 4.66	-122 49 52.38	014000100S00													OR<25			
											02 NONE 0	STOP								
											PRVTE	W -E							011	00
											PSNGR CAR		01 DRVR	INJC	23	M	OR-Y	000	000	00
																	OR<25			
											02 NONE 0	STOP								
											PRVTE	W -E							011	00
											PSNGR CAR		02 PSNG	INJC	50	F		000	000	00
											02 NONE 0	STOP								
											PRVTE	W -E							011	00
											PSNGR CAR		03 PSNG	NONE	01	M		000	000	00
00985	N N N N	03/23/2018	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 9	STRGHT								07
NO RPT		FR		PACIFIC HY 99E	W		TRF SIGNAL	N	WET	REAR	N/A	W -E							000	00
N		11A			06	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00

N 45 9 4.66 -122 49 52.37 014000100S00 UNK

02 NONE 9 STOP
N/A W -E 011 00
SEMI TOW 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

00522 N N N N 02/10/2019 14 HILLSBORO-SILV HY INTER CROSS N N CLR S-1STOP 01 NONE 0 STRGHT 29
CITY SU PACIFIC HY 99E W TRF SIGNAL N DRY REAR PRVTE W -E 000 00
N 2P 06 1 N DAY INJ PSNGR CAR 01 DRVR NONE 29 M OR-Y 026 000 29
N 45 9 4.66 -122 49 52.38 014000100S00 OR<25

02 NONE 0 STOP
PRVTE W -E 011 00
PSNGR CAR 01 DRVR NONE 53 M NONE 000 000 00
OR<25

02 NONE 0 STOP
PRVTE W -E 011 00
PSNGR CAR 02 PSNG INJC 62 F 000 000 00

03385 N N N N N N 11/08/2020 14 HILLSBORO-SILV HY INTER CROSS N N CLR S-1STOP 01 NONE 0 STRGHT 07
CITY SU PACIFIC HY 99E W STOP SIGN N DRY REAR PRVTE W -E 000 00
N 2P 09 1 N DAY INJ PSNGR CAR 01 DRVR NONE 24 M SUSP 043,026 000 07
N 45 9 4.67 -122 49 52.39 014000100S00 OR<25

02 NONE 0 STOP
PRVTE W -E 011 00
PSNGR CAR 01 DRVR INJC 64 M OR-Y 000 000 00
OR<25

02 NONE 0 STOP
PRVTE W -E 011 00
PSNGR CAR 02 PSNG INJC 64 F 000 000 00

03438 N N N N N N 11/18/2020 14 HILLSBORO-SILV HY INTER CROSS N N RAIN S-1STOP 01 NONE 9 STRGHT 27
CITY WE PACIFIC HY 99E W STOP SIGN N WET REAR N/A W -E 000 00
N 7P 09 1 N DLIT PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
N 45 9 4.67 -122 49 52.38 014000100S00 UNK

02 NONE 9 STOP
N/A W -E 011 00
PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

00746 N N N N N N 03/10/2021 14 HILLSBORO-SILV HY INTER CROSS N N CLR S-1STOP 01 NONE 0 STRGHT 07
CITY WE PACIFIC HY 99E W TRF SIGNAL N DRY REAR PRVTE W -E 000 00
N 1P 06 1 N DAY INJ PSNGR CAR 01 DRVR NONE 32 M OR-Y 043,026 000 07
N 45 9 4.67 -122 49 52.41 014000100S00 OR>25

02 NONE 0 STOP
PRVTE W -E 011 00
PSNGR CAR 01 DRVR NONE 26 F OR-Y 000 000 00
OR<25

02 NONE 0 STOP
PRVTE W -E 011 00
PSNGR CAR 02 PSNG INJC 61 F 000 000 00

04764 N N N N 12/24/2021 14 HILLSBORO-SILV HY INTER CROSS N N CLR S-1STOP 01 NONE 9 STRGHT 004 29
CITY FR PACIFIC HY 99E W STOP SIGN N DRY REAR N/A W -E 000 00
N 6P 09 1 N DLIT PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00

Gray fill indicates crashes that are duplicates or not intersection-related.

N		45 9 4.68	-122 49 52.4	014000100S00													UNK			
											02 NONE 9	STOP								
											N/A	W -E							011	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
00009	N N N N N N	01/02/2018	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	O-1 L-TURN	01 NONE 0	STRGHT								27,02
CITY		TU		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	NE-SW							000	00
N		7A			01	0		N	DAWN	INJ	PSNGR CAR		01 DRVR	NONE	41	F	OR-Y	000	000	00
N		45 9 4.66	-122 49 52.38	008100100S00													OR<25			
											01 NONE 0	STRGHT								
											PRVTE	NE-SW							000	00
											PSNGR CAR		02 PSNG	NONE	04	M		000	000	00
											02 NONE 0	TURN-L								
											PRVTE	SW-W							000	00
											PSNGR CAR		01 DRVR	INJC	26	F	OR-Y	016,028,004	038	27,02
																	OR<25			
03454	N Y N N N N	09/14/2018	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1TURN	01 NONE 0	STRGHT								33,04,05
CITY		FR		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	NE-SW							031	00
N		11P			04	1		N	DLIT	INJ	PSNGR CAR		01 DRVR	INJA	18	M	NONE	051,020,034	000	33,04,05
N		45 9 4.66	-122 49 52.38	008100100S00													OR<25			
											02 NONE 0	TURN-L								
											PRVTE	NE-E							000	00
											PSNGR CAR		01 DRVR	INJA	24	F	OR-Y	000	000	00
																	OR<25			
											02 NONE 0	TURN-L								
											PRVTE	NE-E							000	00
											PSNGR CAR		02 PSNG	INJB	24	M		000	000	00
											02 NONE 0	TURN-L								
											PRVTE	NE-E							000	00
											PSNGR CAR		03 PSNG	INJC	22	F		000	000	00
											02 NONE 0	TURN-L								
											PRVTE	NE-E							000	00
											PSNGR CAR		04 PSNG	INJC	19	M		000	000	00
00976	N N N N	03/16/2019	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	O-1 L-TURN	01 NONE 0	TURN-L								02
CITY		SA		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	NE-E							000	00
N		11A			04	0		N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	57	F	OR-Y	028,004	000	02
N		45 8 13.29	-122 50 38.06	008100100S00													OR>25			
											02 NONE 0	STRGHT								
											PRVTE	SW-NE							000	00
											PSNGR CAR		01 DRVR	INJC	27	M	OR-Y	000	000	00
																	OR<25			
04717	N N N N N N	11/25/2019	14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT								32,04,27
CITY		MO		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL	N/A	N -S							000	00
N		9P			01	0		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.67	-122 49 52.4	008100100S00													UNK			
											02 NONE 9	STRGHT								
											N/A	E -W							000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

01521	N	N	N	N	N	N	05/11/2021		14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	PED	01	NONE	0	TURN-L											40,02
CITY							TU			PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	PED		PRVTE		W -NE											00		00
N							7A				02	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	21	M	OR-Y		029		026		40,02
N							45 8 13.3		-122 50 38.06	008100100S00																OR<25					
																				-											
																				STRGHT	01	PED	INJB	15	M		I	XWLK	000	000		00
																				UN UN											
03374	N	Y	N	N	N	N	09/28/2021		14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE	0	STRGHT											29
CITY							TU			PACIFIC HY 99E	CN		UNKNOWN	N	DRY	REAR		PRVTE		W -E											00		00
N							7P				04	0		N	DUSK	INJ		PSNGR CAR			01	DRVR	INJB	18	M	NONE		042		000		29
N							45 9 4.68		-122 49 52.38	008100100S00																OR<25					
																	02	NONE	0	STRGHT											
																		PRVTE		W -E											00		00
																		PSNGR CAR			01	DRVR	NONE	27	F	NONE		000		000		00
																										OR<25					
04409	N	N	N	N			12/03/2021		14	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	9	STRGHT											02
NO RPT							FR			PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		N/A		E -W											00		00
N							9P				02	0		N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000		000		00
N							45 8 13.28		-122 50 38.09	008100100S00																UNK					
																	02	NONE	9	TURN-L											
																		N/A		W -NE											00		00
																		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000		000		00
																										UNK					
04610	N	N	N	N	N	N	12/15/2021		14	HILLSBORO-SILV HY	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE	9	TURN-L											04
CITY							WE			PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN		N/A		SW-W											00		00
N							7P				01	0		N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000		000		00
N							45 9 4.64		-122 49 52.37	008100100S00																UNK					
																	02	NONE	9	STRGHT											
																		N/A		NE-SW											00		00
																		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000		000		00
																										UNK					
01946	N	N	N	N			05/18/2017		16	PACIFIC HY 99E	ALLEY		N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT										087	02
CITY							TH			HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE		NE-SW									000	087	00
N							5P				03			N	DAY	INJ		PSNGR CAR			01	DRVR	INJB	75	F	OR-Y		000		000		00
N							45 9 9.61		-122 49 48.06	008100100S00		(04)														OR<25					
																	02	NONE	0	TURN-L											
																		PRVTE		SW-W									018	087	00
																		PSNGR CAR			01	DRVR	NONE	18	M	OR-Y		028,004		000		02
																										OR<25					
04413	N	N	N	N	N	N	10/18/2017		16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT											02
CITY							WE			HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE		NE-SW									000		00
N							4P				03			N	DAY	INJ		PSNGR CAR			01	DRVR	INJB	34	F	OR-Y		000		000		00
N							45 9 10.06		-122 49 47.67	008100100S00		(04)														OR<25					
																	01	NONE	0	STRGHT											
																		PRVTE		NE-SW									000		00
																		PSNGR CAR			02	PSNG	NO<5	02	M			000		000		00
																	02	NONE	0	TURN-L											
																		PRVTE		W -NE									018		00
																		PSNGR CAR			01	DRVR	NONE	74	M	OR-Y		028		000		02

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

OR<25

01367 N N N N N N 04/08/2017 16 PACIFIC HY 99E ALLEY N N RAIN ANGL-OTH 01 NONE 9 STRGHT 082 02
CITY SA HILLSBORO-SILV HY NE (NONE) UNKNOWN N WET TURN N/A NE-SW 000 00
N 12P 04 N DAY PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
N 45 9 11.86 -122 49 46.09 008100100S00 (04) UNK
02 NONE 9 TURN-L
N/A W -NE 018 00
PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

00751 Y N N N N N 03/04/2018 16 HILLSBORO-SILV HY ALLEY N Y CLR ANGL-OTH 01 NONE 0 TURN-R 01,08
CITY SU PACIFIC HY 99E NE (NONE) UNKNOWN N DRY TURN PRVTE NE-W 018 00
N 8P 01 N DLIT INJ PSNGR CAR 01 DRVR INJB 18 M NONE 047,001 000 01,08
N 45 9 9.62 -122 49 48.05 008100100S00 (04) OR<25
02 NONE 0 STRGHT
PRVTE W -E 000 00
PSNGR CAR 01 DRVR NONE 31 M SUSP 000 000 00
OR<25
02 NONE 0 STRGHT
PRVTE W -E 000 00
PSNGR CAR 02 PSNG INJA 43 F 000 000 00
02 NONE 0 STRGHT
PRVTE W -E 000 00
PSNGR CAR 03 PSNG NONE 02 F 000 000 00
02 NONE 0 STRGHT
PRVTE W -E 000 00
PSNGR CAR 04 PSNG INJB 13 F 000 000 00
02 NONE 0 STRGHT
PRVTE W -E 000 00
PSNGR CAR 05 PSNG INJA 15 F 000 000 00

01139 N N N N N N 04/06/2018 16 HILLSBORO-SILV HY ALLEY N N CLR ANGL-OTH 01 NONE 0 STRGHT 082 27,02
CITY FR PACIFIC HY 99E NE (NONE) UNKNOWN N DRY TURN PRVTE NE-SW 000 00
N 2P 04 N DAY INJ PSNGR CAR 01 DRVR INJC 39 F OR-Y 000 000 00
N 45 9 9.63 -122 49 48.04 008100100S00 (04) OR<25
02 NONE 0 TURN-L
PRVTE W -NE 018 00
PSNGR CAR 01 DRVR INJC 17 F OR-Y 028 000 082 02
OR<25

02951 N N N N N N 08/10/2018 16 PACIFIC HY 99E ALLEY N N CLR ANGL-OTH 01 NONE 0 TURN-L 02
CITY FR HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY TURN PRVTE W -NE 018 00
N 5P 00 N DAY INJ PSNGR CAR 01 DRVR NONE 61 F OR-Y 028 000 02
N 45 9 9.61 -122 49 48.06 008100100S00 (04) OR>25
02 NONE 0 STRGHT
PRVTE NE-SW 000 00
PSNGR CAR 01 DRVR NONE 29 M OR-Y 000 000 00
OR<25
02 NONE 0 STRGHT
PRVTE NE-SW 000 00
PSNGR CAR 02 PSNG INJC 24 F 000 000 00

															02	NONE	0	STRGHT												
																PRVTE		NE-SW											000	00
																PSNGR CAR			03	PSNG	NONE	01	M		000	000			00
04918	N	N	N	N	N	N	12/21/2018		16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01	NONE	0	TURN-L									082	02
CITY							FR			HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE		W -NE									018	00
N							5P				04			N	DLIT	INJ		PSNGR CAR			01	DRVR	INJA	31	F	OR-Y	028	000	082	02
N							45 9 9.64	-122 49 48.04		008100100S00		(04)														OR<25				
															02	NONE	0	STRGHT												
																PRVTE		NE-SW											000	00
																PSNGR CAR			01	DRVR	INJC	28	F	OR-Y	000	000			00
																								OR<25						
															02	NONE	0	STRGHT												
																PRVTE		NE-SW											000	00
																PSNGR CAR			02	PSNG	INJC	18	F		000	000			00
															02	NONE	0	STRGHT												
																PRVTE		NE-SW											000	00
																PSNGR CAR			03	PSNG	INJC	06	F		000	000			00
03137	N	N	N	N	N	N	08/23/2018		16	PACIFIC HY 99E	ALLEY		N	N	CLD	ANGL-OTH	01	NONE	9	TURN-L										02
CITY							TH			HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN		N/A		W -NE									018	00
N							1P				04			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000		00
N							45 9 9.6	-122 49 48.06		008100100S00		(04)														UNK				
															02	NONE	9	STRGHT												
																N/A		NE-SW											000	00
																PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000			00
																								UNK						
03633	N	N	N	N			09/26/2018		16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01	NONE	9	STRGHT										02
NONE							WE			HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN		N/A		NE-SW									000	00
N							6P				04			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000		00
N							45 9 9.62	-122 49 48.05		008100100S00		(04)														UNK				
															02	NONE	9	TURN-L												
																N/A		W -NE											018	00
																PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000			00
																								UNK						
00351	N	N	N	N	N	N	01/29/2019		16	PACIFIC HY 99E	ALLEY		N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT										02
CITY							TU			HILLSBORO-SILV HY	NE	(NONE)	STOP SIGN	N	DRY	TURN		PRVTE		NE-SW									000	00
N							3P				04			N	DAY	INJ		PSNGR CAR			01	DRVR	INJC	22	F	OR-Y	000	000		00
N							45 9 9.62	-122 49 48.09		008100100S00		(04)														OR<25				
															01	NONE	0	STRGHT												
																PRVTE		NE-SW											000	00
																PSNGR CAR			02	PSNG	INJC	46	F		000	000			00
															01	NONE	0	STRGHT												
																PRVTE		NE-SW											000	00
																PSNGR CAR			03	PSNG	INJC	26	F		000	000			00
															02	NONE	0	TURN-L												
																PRVTE		SW-W											019	00
																PSNGR CAR			01	DRVR	NONE	55	M	OR-Y	028	000			02
																								OR<25						

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

00913	N N N N N N	03/11/2019	16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT							50
CITY		MO		HILLSBORO-SILV HY	NE	(NONE)	L-TURN REF	N	DRY	TURN	PRVTE	NE-SW						031	00
N		5P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	35 M	OR-Y	032	000	50
N		45 9 10.06	-122 49 47.7	008100100S00		(05)										OR<25			
											02 NONE 0	TURN-L							
											PRVTE	W -NE						018	00
											PSNGR CAR		01 DRVR	INJC	32 M	OR-Y	028	000	00
																OR<25			
03418	N N N N N N	09/06/2019	16	PACIFIC HY 99E	ALLEY		N	N	CLD	ANGL-OTH	01 NONE 0	TURN-L							02
CITY		FR		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	W -NE						018	00
N		6A			03			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	58 M	OR-Y	028	000	02
N		45 9 9.63	-122 49 48.07	008100100S00		(04)										OR<25			
											02 NONE 0	TURN-L							
											PRVTE	SW-W						019	00
											PSNGR CAR		01 DRVR	INJC	55 F	OR-Y	000	000	00
																OR<25			
03537	N N N N N N	09/13/2019	16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT							02
CITY		FR		HILLSBORO-SILV HY	NE	(NONE)	L-TURN REF	N	DRY	TURN	N/A	NE-SW						000	00
N		4P			05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 10.09	-122 49 47.65	008100100S00		(04)										UNK			
											02 NONE 9	TURN-L							
											N/A	W -NE						018	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
04864	N N N N	12/05/2019	16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	TURN-L							02
NONE		TH		HILLSBORO-SILV HY	NE	(NONE)	L-TURN REF	N	DRY	TURN	N/A	E -SW						018	00
N		5P			05			N	DUSK	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 9.6	-122 49 48.05	008100100S00		(05)										UNK			
											02 NONE 9	STRGHT							
											N/A	SW-NE						000	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
01910	N N N N N N	06/30/2020	16	PACIFIC HY 99E	ALLEY		N	N	CLD	ANGL-OTH	01 NONE 0	TURN-L							02
CITY		TU		HILLSBORO-SILV HY	NE	(NONE)	L-TURN REF	N	DRY	TURN	PRVTE	W -NE						018	00
N		10A			05			N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	50 M	OR-Y	028	000	02
N		45 9 9.61	-122 49 48.07	008100100S00		(05)										OR<25			
											02 NONE 0	STRGHT							
											PRVTE	NE-SW						000	00
											PSNGR CAR		01 DRVR	INJB	28 F	OR-Y	000	000	00
																OR<25			
03972	Y N N N N N	12/30/2020	16	PACIFIC HY 99E	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 9	STRGHT						082	30
CITY		WE		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	WET	TURN	N/A	NE-SW						000	00
N		3P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 9.62	-122 49 48.08	008100100S00		(04)										UNK			
											02 NONE 9	TURN-L							
											N/A	W -NE						018	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
01810	N N N N	06/03/2021	16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT						082	27,02,40
CITY		TH		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	NE-SW						000	00
N		4P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJA	36 M	OR-Y	000	000	00

Gray fill indicates crashes that are duplicates or not intersection-related.

N		45 9 9.61	-122 49 48.1	008100100S00		(04)										OR<25			
											01 NONE 0	STRGHT							
											PRVTE	NE-SW						000	00
											PSNGR CAR		02 PSNG	INJA	64 M		000	000	00
											02 NONE 0	TURN-L							
											PRVTE	W -NE						018	00
											PSNGR CAR		01 DRVR	NONE	73 M	OR-Y	028,016	038 082	27,02,40
																OR<25			
02817	N N N N	08/18/2021	16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	TURN-L							02
NO RPT		WE		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN	N/A	W -NE						018	00
N		4P			05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 9.63	-122 49 48.05	008100100S00		(05)										UNK			
											02 NONE 9	STRGHT							
											N/A	NE-SW						000	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
03941	N N N N	11/04/2021	16	PACIFIC HY 99E	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 9	TURN-R							02
NONE		TH		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	WET	TURN	N/A	W -SW						018	00
N		12P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 6.91	-122 49 50.45	008100100S00		(04)										UNK			
											02 NONE 9	STRGHT							
											N/A	NE-SW						000	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
04345	N N N N N N	12/01/2021	16	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT							02
CITY		WE		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	TURN	N/A	NE-SW						000	00
N		10A			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 9.62	-122 49 48.09	008100100S00		(04)										UNK			
											02 NONE 9	TURN-L							
											N/A	W -NE						018	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
03587	N N N N	08/31/2017	14	PACIFIC HY 99E	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L							02
CITY		TH		HILLSBORO-SILV HY	SW	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	W -NE						018	00
N		3P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	56 M	OR-Y	028	000	02
N		45 9 2.01	-122 49 54.77	008100100S00		(04)										OR<25			
											02 NONE 0	STRGHT							
											PRVTE	NE-SW						000	00
											PSNGR CAR		01 DRVR	NONE	63 M	OR-Y	000	000	00
																OR<25			
											02 NONE 0	STRGHT							
											PRVTE	NE-SW						000	00
											PSNGR CAR		02 PSNG	INJC	85 M		000	000	00
01647	N N N N N N	04/29/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L							02
CITY		SA		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	SW-W						018	00
N		3P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	70 M	OR-Y	028	000	02
N		45 9 4.85	-122 49 59.98	014000100S00		(04)										OR<25			
											02 NONE 0	STRGHT							
											PRVTE	W -E						000	00
											PSNGR CAR		01 DRVR	INJB	70 M	OR-Y	000	000	00

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

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																	OR<25				
02374	N N N N N N	06/16/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLD	ANGL-OTH	01 NONE 0	STRGHT									32,02
CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	W -E							000		00
N		2P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	21	F	OR-Y	000	000		00
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25				
											02 NONE 0	TURN-L									
											PRVTE	S -W							018		00
											PSNGR CAR		01 DRVR	INJA	60	M	OR-Y	052,028	000		32,02
																	OR<25				
03017	N N N N	07/25/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L									02
CITY		TU		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	NE-E							000		00
N		9A			00			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	18	F	OR-Y	028	000		02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25				
											02 NONE 0	STRGHT									
											PRVTE	E -W							000		00
											PSNGR CAR		01 DRVR	INJC	21	F	OR-Y	000	000		00
																	OR<25				
04265	N N N N N N	10/10/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 0	TURN-L								082	02
CITY		TU		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	TURN	PRVTE	NE-E							018		00
N		5P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	19	M	OR-Y	028	000	082	02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25				
											02 NONE 0	STRGHT									
											PRVTE	E -W							000		00
											PSNGR CAR		01 DRVR	INJB	25	M	OR-Y	000	000		00
																	OR<25				
05058	N N N N N N	11/22/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-R									02
CITY		WE		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	NE-W							018		00
N		11A			06			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	00	M	UNK	028	000		02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											UNK				
											02 NONE 0	STRGHT									
											PRVTE	E -W							000		00
											PSNGR CAR		01 DRVR	NONE	76	M	OR-Y	000	000		00
																	OR<25				
											02 NONE 0	STRGHT									
											PRVTE	E -W							000		00
											PSNGR CAR		02 PSNG	INJC	75	F		000	000		00
05125	N N N N N N	11/28/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLD	O-1 L-TURN	01 NONE 0	STRGHT									10
CITY		TU		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	WET	TURN	PRVTE	W -E							000		00
N		5P			03			N	DUSK	INJ	PSNGR CAR		01 DRVR	NONE	17	F	OR-Y	015	000		10
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25				
											01 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		02 PSNG	INJC	38	F		000	000		00
											02 NONE 0	TURN-L									
											PRVTE	E -S							019		00
											PSNGR CAR		01 DRVR	INJC	69	M	OR-Y	028	000		00
																	OR>25				
05402	N N N N	12/13/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L									02
CITY		WE		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	NE-E							018		00
N		6P			03			N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	18	F	NONE	028	000		02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25				

Gray fill indicates crashes that are duplicates or not intersection-related.

											02 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		01 DRVR	INJB	51	F	OR-Y	000	000	00
																	OR>25			
											02 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		02 PSNG	INJB	74	F		000	000	00
											02 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		03 PSNG	INJC	21	F		000	000	00
00551	N N N N N N	02/12/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	UNK	ANGL-OTH	01 NONE 9	STRGHT								02
CITY		SU		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	ANGL	N/A	N -S							018	00
N		2P			00			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											UNK			
											02 NONE 9	STRGHT								
											N/A	E -W							000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
01271	N N N N	04/03/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT								02
CITY		MO		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	ANGL	N/A	N -S							019	00
N		3P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											UNK			
											02 NONE 9	STRGHT								
											N/A	W -E							000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
02890	N N N N N N	07/17/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT								02
CITY		MO		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	ANGL	N/A	NE-SW							018	00
N		9A			06			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											UNK			
											02 NONE 9	STRGHT								
											N/A	E -W							000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
03705	N N N N N N	09/08/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 9	STRGHT								02
CITY		FR		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	TURN	N/A	W -E							000	00
N		11A			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.91	-122 50 2.26	014000100S00		(04)											UNK			
											02 NONE 9	TURN-L								
											N/A	E -S							019	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
05079	N N N N	11/24/2017	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	TURN-L								02
NONE		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	N/A	NE-E							018	00
N		12P			06			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											UNK			
											02 NONE 9	STRGHT								
											N/A	E -W							000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
00888	N N N N N N	03/15/2018	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	O-1 L-TURN	01 NONE 0	STRGHT							082	02

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

CITY		TH		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	TURN	PRVTE	W -E							000	00
N		6P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	48	M	OR-Y	000	000	00
N		45 9 4.78	-122 49 56.94	014000100S00		(04)											OR<25			
											01 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		02 PSNG	INJC	16	F		000	000	00
											01 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		03 PSNG	INJC	15	M		000	000	00
											01 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		04 PSNG	INJC	13	F		000	000	00
											02 NONE 0	TURN-L								
											PRVTE	E -SW							019	00
											PSNGR CAR		01 DRVR	NONE	45	M	SUSP	028,004	000 082	02
																	OR<25			
01284	N N N N	04/16/2018	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 0	STRGHT								02
CITY		MO		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	TURN	PRVTE	E -W							000	00
N		1P			06			N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	80	M	OR-Y	028	000	02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR>25			
											01 NONE 0	STRGHT								
											PRVTE	E -W							000	00
											PSNGR CAR		02 PSNG	INJB	71	F		000	000	00
											02 NONE 0	TURN-L								
											PRVTE	NE-E							018	00
											PSNGR CAR		01 DRVR	NONE	21	M	OR-Y	000	000	00
																	OR>25			
01347	N N N N	04/21/2018	14	HILLSBORO-SILV HY	ALLEY		N	N	CLD	O-1 L-TURN	01 NONE 0	TURN-L								02
CITY		SA		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	E -SW							019	00
N		10A			00			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	22	M	OTH-Y	028,004	000	02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25			
											02 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		01 DRVR	INJC	34	F	OR-Y	000	000	00
																	OR<25			
											02 NONE 0	STRGHT								
											PRVTE	W -E							000	00
											PSNGR CAR		02 PSNG	INJC	33	M		000	000	00
03777	N N N N N N	10/06/2018	14	HILLSBORO-SILV HY	ALLEY		N	N	CLD	ANGL-OTH	01 NONE 0	STRGHT								02
CITY		SA		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	ANGL	PRVTE	NE-SW							018	00
N		12P			06			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	64	F	OR-Y	028	000	02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25			
											02 NONE 0	STRGHT								
											PRVTE	E -W							000	00
											PSNGR CAR		01 DRVR	NONE	55	M	OR-Y	000	000	00
																	OR<25			
											02 NONE 0	STRGHT								
											PRVTE	E -W							000	00
											PSNGR CAR		02 PSNG	INJC	26	F		000	000	00

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

02006	N N N N N N	06/07/2018		14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE	9	TURN-L									02
NONE		TH			PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	N/A		E -SW							019		00
N		5P				03			N	DAY	PDO	PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.78	-122 49 56.93		014000100S00		(04)												UNK				
												02 NONE	9	STRGHT									
												N/A		W -E							000		00
												PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000		00
																			UNK				
03930	N N N N	10/16/2018		14	HILLSBORO-SILV HY	ALLEY		N	N	UNK	ANGL-OTH	01 NONE	9	UNK									02
NONE		TU			PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	UNK	TURN	N/A		UN-UN							018		00
N		8P				00			N	DLIT	PDO	PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.89	-122 50 1.51		014000100S00		(04)												UNK				
												02 NONE	9	STRGHT									
												N/A		UN-UN							000		00
												PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000		00
																			UNK				
04978	N N N N	12/26/2018		14	HILLSBORO-SILV HY	ALLEY		N	N	CLD	O-1 L-TURN	01 NONE	9	STRGHT									02
NONE		WE			PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	TURN	N/A		W -E							000		00
N		12P				03			N	DAY	PDO	PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.89	-122 50 1.5		014000100S00		(04)												UNK				
												02 NONE	9	TURN-L									
												N/A		E -SW							019		00
												PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000		00
																			UNK				
00819	N N N N N N	03/04/2019		14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE	0	TURN-L									02
CITY		MO			PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE		SW-W							018		00
N		1P				04			N	DAY	INJ	PSNGR CAR			01 DRVR	NONE	21	M	SUSP	028	000		02
N		45 9 4.9	-122 50 1.51		014000100S00		(04)												OR<25				
												02 NONE	0	STRGHT									
												PRVTE		W -E							000		00
												PSNGR CAR			01 DRVR	NONE	74	M	OR-Y	000	000		00
																			OR<25				
												02 NONE	0	STRGHT									
												PRVTE		W -E							000		00
												PSNGR CAR			02 PSNG	INJC	72	F		000	000		00
												02 NONE	0	STRGHT									
												PRVTE		W -E							000		00
												PSNGR CAR			03 PSNG	INJC	10	F		000	000		00
00887	N N N N	03/09/2019		14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE	0	UNK									02
NONE		SA			PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE		UN-UN							018		00
N		9A				00			N	DAY	INJ	PSNGR CAR			01 DRVR	INJC	21	F	OR-Y	028	000		02
N		45 9 4.89	-122 50 1.47		014000100S00		(04)												OR<25				
												01 NONE	0	UNK									
												PRVTE		UN-UN							018		00
												PSNGR CAR			02 PSNG	INJC	43	F		000	000		00
												02 NONE	0	STRGHT									
												PRVTE		UN-UN							000		00
												PSNGR CAR			01 DRVR	NONE	32	F	OR-Y	000	000		00
																			OR<25				
03748	N N N N N N	09/27/2019		14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE	0	STRGHT								082	02
CITY		FR			PACIFIC HY 99E	W	(NONE)	L-GRN-SIG	N	WET	TURN	PRVTE		W -E							000		00

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

N		4P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	17	F	OR-Y	000	000		00
N		45 9 4.79	-122 49 56.92	014000100S00		(05)											OR<25				
											01 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		02 PSNG	INJC	52	M		000	000		00
											02 NONE 0	TURN-L									
											PRVTE	SW-W							018		00
											PSNGR CAR		01 DRVR	INJC	30	F	OR-Y	028	000	082	02
																	OR<25				
											02 NONE 0	TURN-L									
											PRVTE	SW-W							018		00
											PSNGR CAR		02 PSNG	INJC	48	F		000	000		00
											02 NONE 0	TURN-L									
											PRVTE	SW-W							018		00
											PSNGR CAR		03 PSNG	INJC	08	F		000	000		00
											02 NONE 0	TURN-L									
											PRVTE	SW-W							018		00
											PSNGR CAR		04 PSNG	INJC	02	F		000	000		00
											02 NONE 0	TURN-L									
											PRVTE	SW-W							018		00
											PSNGR CAR		05 PSNG	INJC	01	F		000	000		00
03856	N N N N N N	10/04/2019	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 0	TURN-L									02
CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	E -SW							019		00
N		5P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	37	M	OR-Y	028,004	000		02
N		45 9 4.79	-122 49 56.92	014000100S00		(04)											OR<25				
											02 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		01 DRVR	INJB	25	F	OR-Y	000	000		00
																	OR<25				
00856	N N N N	03/08/2019	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	O-1 L-TURN	01 NONE 9	TURN-L									02
CITY		FR		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	WET	TURN	N/A	W -NE							000		00
N		5P			06			N	DUSK	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.91	-122 50 1.5	014000100S00		(04)											UNK				
											02 NONE 9	STRGHT									
											N/A	E -W							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
01057	N N N N	03/22/2019	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	O-OTHER	01 NONE 9	TURN-L									02
NONE		FR		PACIFIC HY 99E	W	(NONE)	R-GRN-SIG	N	DRY	TURN	N/A	E -SW							019		00
N		4P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.77	-122 49 56.94	014000100S00		(04)											UNK				
											02 NONE 9	TURN-R									
											N/A	W -SW							019		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
01857	N N N N	05/02/2019	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT									02
NONE		TH		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	N/A	E -W							000		00
N		11A			05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.88	-122 50 1.51	014000100S00		(04)											UNK				

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

											02 NONE 9	TURN-L								
											N/A	N -E							018	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
01710	N N N N N N	06/12/2020	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 0	STRGHT								02
CITY		FR		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	WET	TURN	PRVTE	E -W							000	00
N		9A			00			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	23	F	OR-Y	000	000	00
N		45 9 4.89	-122 50 1.49	014000100S00		(04)											OR>25			
											01 NONE 0	STRGHT								
											PRVTE	E -W							000	00
											PSNGR CAR		02 PSNG	INJC	34	F		000	000	00
											02 NONE 0	TURN-L								
											PRVTE	NE-E							018	00
											PSNGR CAR		01 DRVR	INJC	16	M	OR-Y	028	000	02
																	OR<25			
											02 NONE 0	TURN-L								
											PRVTE	NE-E							018	00
											PSNGR CAR		02 PSNG	INJC	45	F		000	000	00
03728	N N N N	12/11/2020	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 0	STRGHT								02
CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	TURN	PRVTE	E -W							000	00
N		12P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	70	M	OR-Y	028	000	02
N		45 9 4.89	-122 50 1.5	014000100S00		(04)											OR<25			
											02 NONE 0	TURN-L								
											PRVTE	NE-E							018	00
											PSNGR CAR		01 DRVR	INJC	28	F	OR-Y	000	000	00
																	OR<25			
01824	N N N N N N	06/23/2020	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	TURN-L							082	02
CITY		TU		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	TURN	N/A	S -W							018	00
N		9A			00			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.51	014000100S00		(04)											UNK			
											02 NONE 9	STRGHT								
											N/A	W -E							000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
00764	N N N N N N	03/12/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT								02
CITY		FR		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	ANGL	PRVTE	W -E							000	00
N		3P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	53	F	SUSP	000	000	00
N		45 9 4.89	-122 50 1.49	014000100S00		(04)											OR<25			
											02 NONE 0	STRGHT								
											PRVTE	N -S							019	00
											PSNGR CAR		01 DRVR	NONE	24	M	OR-Y	028	000	02
																	OR<25			
01305	N N N N N N	04/23/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 0	STRGHT								02
CITY		FR		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	W -E							000	00
N		11A			00			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	43	M	OR-Y	000	000	00
N		45 9 4.9	-122 50 1.52	014000100S00		(04)											OR<25			
											02 NONE 0	TURN-L								
											PRVTE	E -S							019	00
											PSNGR CAR		01 DRVR	INJB	26	M	SUSP	028,004	000	02
																	OR<25			
00148	N N N N N N	01/15/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 9	TURN-L								02,27

Gray fill indicates crashes that are duplicates or not intersection-related.

CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	TURN	N/A	NE-E						018	00
N		12P			00			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 4.88	-122 50 1.52	014000100S00		(04)										UNK			
											02 NONE 9	STRGHT							
											N/A	E -W						000	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
01781	N N N N	06/01/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 9	STRGHT						082	40,02
CITY		TU		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	N/A	W -E						000	00
N		2P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 4.88	-122 50 1.51	014000100S00		(04)										UNK			
											02 NONE 9	TURN-L							
											N/A	E -SW						019	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
03393	N N N N N N	09/01/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-R							02
CITY		WE		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	N -W						018	00
N		10A			00			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	20 F	OR-Y	028	000	02
N		45 9 4.9	-122 50 1.51	014000100S00		(04)										OR<25			
											02 NONE 0	STRGHT							
											PRVTE	E -W						000	00
											PSNGR CAR		01 DRVR	NONE	30 F	OR-Y	000	000	00
																OR<25			
											02 NONE 0	STRGHT							
											PRVTE	E -W						000	00
											PSNGR CAR		02 PSNG	INJC	01 M		000	000	00
											02 NONE 0	STRGHT							
											PRVTE	E -W						000	00
											PSNGR CAR		03 PSNG	INJC	05 F		000	000	00
04117	N N N N	11/15/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	TURN-L							02
CITY		MO		PACIFIC HY 99E	W	(NONE)	R-GRN-SIG	N	DRY	TURN	N/A	S -W						000	00
N		3P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.51	014000100S00		(04)										UNK			
											02 NONE 9	STRGHT							
											N/A	W -E						000	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
04181	N N N N N N	11/20/2021	14	HILLSBORO-SILV HY	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT							02
CITY		SA		PACIFIC HY 99E	W	(NONE)	STOP SIGN	N	DRY	TURN	N/A	E -W						000	00
N		10A			05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 4.89	-122 50 1.52	014000100S00		(04)										UNK			
											02 NONE 9	TURN-L							
											N/A	N -E						018	00
											PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																UNK			
00941	N N N N	03/10/2017	16	PACIFIC HY 99E	STRGHT		N	N	CLR	S-STRGHT	01 NONE 0	STRGHT							29
NONE		FR		HILLSBORO-SILV HY	NE	(NONE)	L-TURN REF	N	DRY	REAR	PRVTE	SW-NE						000	00
N		8A			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	33 F	OR-Y	042	000	29
N		45 9 7.36	-122 49 50.02	008100100S00		(05)										OR>25			
											02 NONE 0	STRGHT							
											PRVTE	SW-NE						000	00
											PSNGR CAR		01 DRVR	INJC	37 F	OR-Y	000	000	00

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

OR<25

04036 N N N N 09/26/2017 16 PACIFIC HY 99E STRGHT Y N CLR D-1STOP 01 NONE 9 BACK 10
CITY TU HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY BACK N/A UN-UN 000 00
N 3P 00 N DAY PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
N 45 9 6.01 -122 49 51.2 008100100S00 (04) UNK
02 NONE 9 STOP
N/A UN-UN 011 00
PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

01795 N N N N 05/25/2018 16 PACIFIC HY 99E STRGHT Y N CLR S-1STOP 01 NONE 0 STRGHT 29
NONE FR HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY REAR PRVTE NE-SW 000 00
N 4P 00 N DAY INJ PSNGR CAR 01 DRVR NONE 39 M OR-Y 026 000 29
N 45 9 6.01 -122 49 51.2 008100100S00 (04) OR<25
02 NONE 0 STOP
PRVTE NE-SW 011 00
PSNGR CAR 01 DRVR INJC 64 F OR-Y 000 000 00
OR<25

03079 N N N N 08/20/2018 16 PACIFIC HY 99E STRGHT Y N CLR S-1STOP 01 NONE 0 STRGHT 29
NONE MO HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY REAR PRVTE NE-SW 000 00
N 12P 00 N DAY INJ PSNGR CAR 01 DRVR NONE 47 M OR-Y 026 000 29
N 45 9 6.46 -122 49 50.81 008100100S00 (04) OR<25
02 NONE 0 STOP
PRVTE NE-SW 011 00
PSNGR CAR 01 DRVR INJC 48 M OR-Y 000 000 00
OR>25

01459 N N N N 04/30/2018 16 PACIFIC HY 99E STRGHT Y N CLR S-1STOP 01 NONE 9 STRGHT 29
NONE MO HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY REAR N/A NE-SW 000 00
N 3P 00 N DAY PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
N 45 9 7.39 -122 49 50.02 008100100S00 (04) UNK
02 NONE 9 STOP
N/A NE-SW 011 00
PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

02935 N N N N 08/09/2018 16 PACIFIC HY 99E STRGHT N N CLR S-1STOP 01 NONE 9 STRGHT 29
NONE TH HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY REAR N/A NE-SW 000 00
N 3P 00 N DAY PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
N 45 9 5.56 -122 49 51.59 008100100S00 (04) UNK
02 NONE 9 STOP
N/A NE-SW 011 00
PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

02981 N N N N 08/12/2018 16 PACIFIC HY 99E STRGHT Y N CLR S-STRGHT 01 NONE 9 STRGHT 22
NONE SU HILLSBORO-SILV HY NE (NONE) UNKNOWN N DRY REAR N/A NE-SW 000 00
N UNK 04 N DAY PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
N 45 9 6.00 -122 49 51.21 008100100S00 (04) UNK
02 NONE 9 STRGHT
N/A NE-SW 006 00
PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00
UNK

04261 N N N N N N 10/28/2019 16 PACIFIC HY 99E STRGHT Y N CLR S-1STOP 01 NONE 0 STRGHT 13

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

CITY		MO		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW							000		00
N		1P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	20	F	OR-Y	045	000		13
N		45 9 6.46	-122 49 50.81	008100100S00		(04)											OR<25				
											01 NONE 0	STRGHT									
											PRVTE	NE-SW							000		00
											PSNGR CAR		02 PSNG	INJC	46	F		000	000		00
											02 NONE 0	STRGHT									
											PRVTE	NE-SW							000		00
											PSNGR CAR		01 DRVR	NONE	37	M	OR-Y	000	000		00
																	OR<25				
02138	N N N N	06/06/2019	16	PACIFIC HY 99E	STRGHT		Y	N	CLD	S-1STOP	01 NONE 9	STRGHT									07
CITY		TH		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	REAR	N/A	NE-SW							000		00
N		12P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 5.56	-122 49 51.59	008100100S00		(04)											UNK				
											02 NONE 9	STOP									
											N/A	NE-SW							011		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
01845	N Y N N N N	06/21/2020	16	PACIFIC HY 99E	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
CITY		SU		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW							000		00
N		3P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	64	M	OR-Y	026	000		29
N		45 9 5.58	-122 49 51.62	008100100S00		(04)											OR<25				
											02 NONE 0	STOP									
											PRVTE	NE-SW							011		00
											PSNGR CAR		01 DRVR	INJC	26	M	OR-Y	000	000		00
																	OR<25				
01279	N N N N N N	04/21/2021	16	PACIFIC HY 99E	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT									16
CITY		WE		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW							000		00
N		5P			00			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	52	F	OR-Y	026	025		16
N		45 9 6.46	-122 49 50.83	008100100S00		(04)											OR<25				
											02 NONE 0	STOP									
											PRVTE	NE-SW							011		00
											PSNGR CAR		01 DRVR	INJB	54	F	OR-Y	000	000		00
																	OR<25				
02776	N N N N N N	07/12/2017	14	PACIFIC HY 99E	STRGHT		N	Y	CLR	FIX OBJ	01 NONE 0	STRGHT								050,001	10
CITY		WE		HILLSBORO-SILV HY	SW	(NONE)	UNKNOWN	N	DRY	FIX	PRVTE	NE-SW							000	050	00
Y		9P			04			N	DUSK	INJ	MTRCYCLE		01 DRVR	INJA	45	M	OR-Y	081	000	001	10
N		45 9 .23	-122 49 56.35	008100100S00		(04)											OR<25				
04642	N N N N	12/05/2018	14	PACIFIC HY 99E	STRGHT		Y	N	FOG	S-1STOP	01 NONE 0	STRGHT									29
NONE		WE		HILLSBORO-SILV HY	SW	(NONE)	UNKNOWN	N	ICE	REAR	PRVTE	SW-NE							000		00
N		5A			05			N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	28	F	OR-Y	026	000		29
N		45 9 3.79	-122 49 53.16	008100100S00		(04)											OR<25				
											01 NONE 0	STRGHT									
											PRVTE	SW-NE							000		00
											PSNGR CAR		02 PSNG	NONE	01	M		000	000		00
											02 NONE 0	STOP									
											PRVTE	SW-NE							011		00
											PSNGR CAR		01 DRVR	INJC	61	M	OR-Y	000	000		00
																	OR<25				

URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

00432	Y Y N N N N	02/04/2019	14	PACIFIC HY 99E	STRGHT		N	Y	RAIN	FIX OBJ	01 NONE 0	STRGHT								040,001	33,30
CITY		MO		HILLSBORO-SILV HY	SW	(NONE)	UNKNOWN	N	WET	FIX	PRVTE	UN-UN							000	040	00
Y		1A			00			N	DLIT	INJ	MTRCYCLE		01 DRVR	INJB	22	M	OR-Y	051,050,081	000	001	33,30
N		45 9 2.02	-122 49 54.76	008100100S00		(04)											OR<25				
01559	N N N N	04/27/2019	14	PACIFIC HY 99E	STRGHT		N	N	CLR	S-STRGHT	01 NONE 9	STRGHT									13
NONE		SA		HILLSBORO-SILV HY	SW	(NONE)	UNKNOWN	N	DRY	SS-O	N/A	NE-SW							000		00
N		11A			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 2.43	-122 49 54.37	008100100S00		(04)											UNK				
											02 NONE 9	STRGHT									
											N/A	NE-SW							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
01231	N N N N N N	04/11/2020	14	PACIFIC HY 99E	STRGHT		N	N	CLR	S-1STOP	01 NONE 0	STRGHT									27,29
CITY		SA		HILLSBORO-SILV HY	SW	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW							000		00
N		11A			03			Y	DAY	INJ	PSNGR CAR		01 DRVR	INJC	22	F	OR-Y	016,026	038		27,29
N		45 9 2.46	-122 49 54.4	008100100S00		(04)											OR<25				
											02 NONE 0	STOP									
											PRVTE	NE-SW							011		00
											PSNGR CAR		01 DRVR	INJC	31	M	OR-Y	000	000		00
																	OR<25				
02285	N Y N N	08/02/2020	14	PACIFIC HY 99E	STRGHT		N	Y	CLR	FIX OBJ	01 NONE 9	STRGHT								050	10
CITY		SU		HILLSBORO-SILV HY	SW	(RSDMD)	UNKNOWN	N	DRY	FIX	N/A	NE-SW							000		00
Y		8P			04			N	DUSK	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 2.88	-122 49 53.98	008100100S00		(04)											UNK				
00994	N N N N	03/14/2017	14	HILLSBORO-SILV HY	STRGHT		N	N	RAIN	S-STRGHT	01 NONE 0	STRGHT								087	13
CITY		TU		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	SS-O	PRVTE	W -E							000	087	00
N		5P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	75	M	OR-Y	045	000		13
N		45 9 4.85	-122 49 59.98	014000100S00		(04)											OR<25				
											01 NONE 0	STRGHT									
											PRVTE	W -E							000	087	00
											PSNGR CAR		02 PSNG	INJC	74	F		000	000		00
											02 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		01 DRVR	INJC	41	M	OTH-Y	000	000		00
																	N-RES				
00265	N N N N	01/20/2017	14	HILLSBORO-SILV HY	STRGHT		Y	N	CLD	S-1STOP	01 NONE 9	STRGHT									07
CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	REAR	N/A	W -E							000		00
N		7A			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.74	-122 49 55.42	014000100S00		(04)											UNK				
											02 NONE 9	STOP									
											N/A	W -E							011		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
04450	N N N N N N	11/19/2018	14	HILLSBORO-SILV HY	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT									27,29
CITY		MO		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	W -E							000		00
N		5P			04			N	DLIT	INJ	PSNGR CAR		01 DRVR	INJC	36	F	OR-Y	016,026	038		27,29
N		45 9 4.87	-122 50 .75	014000100S00		(04)											OR<25				
											02 NONE 0	STOP									
											PRVTE	W -E							011		00

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

											PSNGR CAR		01 DRVR	INJC	52	M	OR-Y	000	000		00
																	OR<25				
01209	N N N N N N	04/04/2019	14	HILLSBORO-SILV HY	STRGHT		Y	N	CLD	S-1STOP	01 NONE 0	STRGHT									16
CITY		TH		PACIFIC HY 99E	W	(NONE)	L-GRN-SIG	N	WET	REAR	PRVTE	W -E							000		00
N		12P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	31	M	OR-Y	026	025		16
N		45 9 4.71	-122 49 54.66	014000100S00		(04)											OR<25				
											02 NONE 0	STOP									
											PRVTE	W -E							012		00
											PSNGR CAR		01 DRVR	INJC	53	M	OR-Y	000	000		00
																	OR<25				
03192	N N N N N N	10/23/2020	14	HILLSBORO-SILV HY	STRGHT		N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT									02,27
CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	E -W							000		00
N		10A			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	84	M	OR-Y	000	000		00
N		45 9 4.89	-122 50 1.51	014000100S00		(04)											OR<25				
											01 NONE 0	STRGHT									
											PRVTE	E -W							000		00
											PSNGR CAR		02 PSNG	INJB	83	F		000	000		00
											02 NONE 0	TURN-L									
											PRVTE	N -E							018		00
											PSNGR CAR		01 DRVR	NONE	25	M	SUSP	016,028	038		02,27
																	OR<25				
03535	N N N N N N	11/20/2020	14	HILLSBORO-SILV HY	STRGHT		Y	N	FOG	S-1STOP	01 NONE 0	STRGHT									29
CITY		FR		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	W -E							000		00
N		8P			03			N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	69	F	OTH-Y	026	000		29
N		45 9 4.71	-122 49 53.9	014000100S00		(04)											N-RES				
											02 NONE 0	STOP									
											PRVTE	W -E							011		00
											PSNGR CAR		01 DRVR	INJC	20	F	OR-Y	000	000		00
																	OR<25				
00183	N N N N N N	01/20/2021	14	HILLSBORO-SILV HY	STRGHT		N	Y	CLD	FIX OBJ	01 NONE 0	STRGHT								040,062	17
CITY		WE		PACIFIC HY 99E	W	(NONE)	UNKNOWN	N	WET	FIX	PRVTE	W -E							000	040,062	00
Y		10P			00			N	DLIT	INJ	PSNGR CAR		01 DRVR	INJA	25	M	NONE	083,081	028		17
N		45 9 5.04	-122 50 7.59	014000100S00		(04)											OR>25				
											01 NONE 0	STRGHT									
											PRVTE	W -E							000	040,062	00
											PSNGR CAR		02 PSNG	INJC	00	F		000	000		00
02140	N N N N N N	06/28/2021	14	HILLSBORO-SILV HY	STRGHT		Y	N	CLR	ANGL-STP	01 NONE 0	TURN-L								082	40,02
CITY		MO		PACIFIC HY 99E	W	(NONE)	L-TURN REF	N	DRY	TURN	PRVTE	SW-W							018		00
N		11A			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	66	M	OR-Y	028	000	082	40,02
N		45 9 4.91	-122 50 1.53	014000100S00		(05)											OR<25				
											01 NONE 0	TURN-L									
											PRVTE	SW-W							018		00
											PSNGR CAR		02 PSNG	INJB	63	F		000	000		00
											02 NONE 0	STOP									
											PRVTE	W -E							012		00
											PSNGR CAR		01 DRVR	NONE	26	M	OR-Y	000	000		00
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	W -E							012		00
											PSNGR CAR		02 PSNG	INJC	24	F		000	000		00

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and HILLSBORO-SILV HY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 106 of 106 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

00889	N	N	N	N	03/24/2021		14	HILLSBORO-SILV HY	STRGHT		Y	N	CLD	S-STRGHT	01	NONE	9	STRGHT											13
CITY					WE			PACIFIC HY 99E	W	(NONE)	L-GRN-SIG	N	WET	SS-O		N/A		W -E										000	00
N					11A				04			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00
N					45 9 4.7		-122 49 53.89	014000100S00		(04)														UNK				
															02	NONE	9	STRGHT											
																N/A		W -E										000	00
																PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and WOODBURN-ESTACADA H, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 44 of 44 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

SER# / INVEST / RD DPT / UNLOC?	S P E D C	D R A L S	M J U G V	S I N L	W C H K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03473	N	N	N	N		08/06/2017	16	WOODBURN-ESTACADA H	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 9	STRGHT											29
NONE						SU		PACIFIC HY 99E	E		TRF SIGNAL	N	UNK	REAR		N/A	E -W									000		00
N						12P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N						45 9 4.66	-122 49 52.38	016100100S00															UNK					
															02	NONE 9	STOP											
																N/A	E -W								011		00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																							UNK					
00100	N	N	N	N		01/11/2018	16	WOODBURN-ESTACADA H	INTER	CROSS	N	N	RAIN	O-1STOP	01	NONE 0	BACK											10
NO RPT						TH		PACIFIC HY 99E	E		TRF SIGNAL	N	WET	BACK		PRVTE	W -E								000		00
N						6A			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		011	000		10
N						45 9 4.66	-122 49 52.38	016100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	E -W								011		00
																PSNGR CAR		01	DRVR	INJC	48	F	OR-Y		000	000		00
																							OR<25					
00346	N	N	N	N	N	01/27/2017	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT											07
CITY						FR		PACIFIC HY 99E	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N								000		00
N						10A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		043,026	000		07
N						45 9 4.66	-122 49 52.38	008100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	S -N								011		00
																PSNGR CAR		01	DRVR	INJC	29	F	OR-Y		000	000		00
																							OR<25					
03610	N	N	N	N		09/25/2018	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	CLR	S-1STOP	01	UNKN 0	STRGHT											29
NO RPT						TU		PACIFIC HY 99E	S		TRF SIGNAL	N	DRY	REAR		UNKN	S -N								000		00
N						8P			06	0		N	DLIT	INJ		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		026	000		29
N						45 9 4.66	-122 49 52.38	008100100S00															UNK					
															02	NONE 0	STOP											
																PRVTE	S -N								011		00
																PSNGR CAR		01	DRVR	INJC	40	M	OR-Y		000	000		00
																							OR<25					
01056	N	N	N	N		03/30/2018	14	PACIFIC HY 99E	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE						FR		WOODBURN-ESTACADA H	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N								000		00
N						1P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N						45 9 4.66	-122 49 52.38	008100100S00															UNK					
															02	NONE 9	STOP											
																N/A	S -N								012		00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																							UNK					
00184	N	N	N	N	N	01/13/2020	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 1	STRGHT											10
CITY						MO		PACIFIC HY 99E	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N								000		00
N						3P			06	1		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	56	M	OR-Y		026	000		00
N						45 9 4.67	-122 49 52.39	008100100S00															OR<25					
															02	NONE 0	STOP											

Gray fill indicates crashes that are duplicates or not intersection-related.

											PRVTE	S -N							011	00
											PSNGR CAR		01 DRVR	INJC	29	M	NONE	009	000	10
																	OR<25			
00540	N N N N	02/07/2020	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	CLR	S-1STOP	01 UNKN 0	STRGHT								29
NO RPT		FR		PACIFIC HY 99E	S		TRF SIGNAL	N	DRY	REAR	UNKN	S -N							000	00
N		5A			06	1		N	DLIT	INJ	UNKNOWN		01 DRVR	NONE	00	M	UNK	026	000	29
N		45 9 4.65	-122 49 52.39	008100100S00													UNK			
											02 NONE 0	STOP								
											PRVTE	S -N							011	00
											PSNGR CAR		01 DRVR	INJC	41	M	OTH-Y	000	000	00
																	N-RES			
04760	N N N N N N	12/24/2021	16	WOODBURN-ESTACADA H	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 1	STRGHT								07
CITY		FR		PACIFIC HY 99E	S		TRF SIGNAL	N	WET	REAR	PRVTE	S -N							000	00
N		12P			06	1		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	31	M	SUSP	043,026	000	07
N		45 9 4.66	-122 49 52.41	008100100S00													OR<25			
											02 NONE 0	STOP								
											PRVTE	S -N							011	00
											PSNGR CAR		01 DRVR	NONE	52	M	OR-Y	000	000	00
																	OR<25			
											02 NONE 0	STOP								
											PRVTE	S -N							011	00
											PSNGR CAR		02 PSNG	INJA	58	F		000	000	00
01457	N N N N N N	05/07/2021	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	STRGHT								33,27,29
CITY		FR		PACIFIC HY 99E	S		TRF SIGNAL	N	DRY	REAR	N/A	S -N							000	00
N		8P			06	1		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
N		45 9 4.68	-122 49 52.37	008100100S00													UNK			
											02 NONE 9	STOP								
											N/A	S -N							011	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000	00
																	UNK			
04476	N N N N	10/21/2017	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	RAIN	ANGL-OTH	01 NONE 0	TURN-R								02
NO RPT		SA		PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN	PRVTE	E -N							000	00
N		7P			02	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	29	M	OR-Y	028	000	02
N		45 9 4.66	-122 49 52.38	008100100S00													OR<25			
											02 NONE 1	STRGHT								
											PRVTE	S -N							000	00
											PSNGR CAR		01 DRVR	INJB	59	F	OR-Y	000	000	00
																	OR<25			
05532	N N N N N N	12/21/2017	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	CLD	O-1 L-TURN	01 NONE 0	TURN-L								04
CITY		TH		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	N -E							022	00
N		5P			04	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	42	F	OR-Y	020	022	04
N		45 9 4.66	-122 49 52.38	008100100S00													OR<25			
											02 NONE 0	STRGHT								
											PRVTE	S -N							000	00
											PSNGR CAR		01 DRVR	INJC	70	F	OR-Y	000	000	00
																	OR<25			
											03 NONE 0	STRGHT								
											PRVTE	S -N							022	00
											PSNGR CAR		01 DRVR	NONE	26	M	OR-Y	000	022	00
																	OR<25			

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and WOODBURN-ESTACADA H, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 44 of 44 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

04442	N N N N	10/20/2017	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	TURN-R									02
NONE		FR		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	N/A	E -N							000		00
N		2P			02	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.66	-122 49 52.38	008100100S00													UNK				
											02 NONE 9	STRGHT									
											N/A	S -N							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
01605	N N N N	05/31/2020	14	WOODBURN-ESTACADA H	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT									04
CITY		SU		PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	W -E							000		00
N		7P			04	1		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	24	M	OTH-Y	020	000		04
N		45 9 4.65	-122 49 52.38	014000100S00													OR<25				
											02 NONE 0	TURN-L									
											PRVTE	S -W							000		00
											PSNGR CAR		01 DRVR	INJC	38	F	OR-Y	000	000		00
																	OR<25				
01913	Y N N N N N	06/17/2021	16	PACIFIC HY 99E	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 0	STRGHT								001,010	01,06,50
CITY		TH		WOODBURN-ESTACADA H	N	(NONE)	L-TURN REF	N	DRY	TURN	PRVTE	S -N							031	010	00
N		6A			07			N	DAWN	FAT	MTRCYCLE		01 DRVR	KILL	36	M	OR-Y	047,031,042	000	001	01,06,50
N		45 9 9.6	-122 49 48.06	008100100S00		(04)											OR<25				
											02 NONE 0	TURN-L									
											PRVTE	N -E							019		00
											PSNGR CAR		01 DRVR	INJA	21	M	OR-Y	000	000		00
																	OR<25				
04591	N N N N N N	10/28/2017	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	S-1TURN	01 NONE 0	STRGHT								001	06
CITY		SA		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	W -E							031		00
N		6P			04			N	DUSK	INJ	MTRCYCLE		01 DRVR	INJB	60	M	OR-Y	032	000	001	06
N		45 9 4.48	-122 49 48.84	016100100S00		(02)											OR<25				
											02 NONE 0	TURN-L									
											PRVTE	W -N							000		00
											PSNGR CAR		01 DRVR	NONE	21	F	OR-Y	000	000		00
																	OR<25				
01221	N N N N N N	03/30/2017	16	WOODBURN-ESTACADA H	ALLEY		N	Y	CLR	O-OTHER	01 NONE 9	TURN-L									02
STATE		TH		PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	E -S							019		00
N		2P			02			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 47.42	016100100S00		(02)											UNK				
											02 NONE 9	STRGHT									
											N/A	W -E							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
04085	N N N N	08/30/2018	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L									02
NONE		TH		PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	S -W							018		00
N		3P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	71	F	OTH-Y	028	000		02
N		45 9 4.45	-122 49 46.7	016100100S00		(02)											N-RES				
											02 NONE 0	TURN-L									
											PRVTE	E -S							019		00
											PSNGR CAR		01 DRVR	INJC	43	F	OR-Y	000	000		00
																	OR<25				
04853	N N N N	12/17/2018	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L									02
NONE		MO		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	S -W							018		00
N		7A			04			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	48	F	OR-Y	028	000		02

Gray fill indicates crashes that are duplicates or not intersection-related.

N		45 9 4.45	-122 49 46.71	016100100S00		(02)											OR<25				
											02 NONE 0	STRGHT									
											PRVTE	E -W							000		00
											PSNGR CAR		01 DRVR	INJC	18	M	OR-Y	000	000		00
																	OR<25				
02091	N N N N	06/11/2018	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 9	STRGHT									02
CITY		MO		PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	W -E							000		00
N		7P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 46.7	016100100S00		(02)											UNK				
											02 NONE 9	TURN-L									
											N/A	E -S							019		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
00435	N N N N N N	02/04/2019	16	WOODBURN-ESTACADA H	ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 0	TURN-L								013	02
CITY		MO		PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	WET	TURN	PRVTE	S -W							018	013	00
N		12P			03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	18	F	OR-Y	028	022		02
N		45 9 4.45	-122 49 46.71	016100100S00		(02)											OR<25				
											02 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		01 DRVR	INJC	46	F	OR-Y	000	000		00
																	OR<25				
											02 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		02 PSNG	INJC	83	F		000	000		00
											03 NONE 0	STRGHT									
											PRVTE	E -W							022		00
											PSNGR CAR		01 DRVR	NONE	49	M	OR-Y	000	022		00
																	OR<25				
02135	N N N N	06/03/2019	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 9	TURN-L									02
NONE		MO		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	TURN	N/A	W -N							019		00
N		3P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 44.5	016100100S00		(02)											UNK				
											02 NONE 9	STRGHT									
											N/A	E -W							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
02682	N N N N	07/17/2019	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT									02
NO RPT		WE		PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	W -E							000		00
N		6A			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.45	-122 49 46.68	016100100S00		(02)											UNK				
											02 NONE 9	TURN-R									
											N/A	S -E							018		00
											SEMI TOW		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
04802	N N N N	12/01/2019	16	WOODBURN-ESTACADA H	ALLEY		N	N	CLD	ANGL-OTH	01 NONE 9	UNK									02
NONE		SU		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	WET	TURN	N/A	N -UN							018		00
N		1P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.47	-122 49 44.53	016100100S00		(02)											UNK				
											02 NONE 9	STRGHT									
											N/A	E -W							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00

Gray fill indicates crashes that are duplicates or not intersection-related.

																								UNK							
00273	N N N N N N	01/18/2020		16	WOODBURN-ESTACADA H	ALLEY		N	N	CLD	ANGL-OTH	01	NONE	0	STRGHT														02	
CITY		SA			PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	WET	TURN		PRVTE		W -E													000		00	
N		11A				03			N	DAY	INJ		PSNGR CAR			01	DRVR	INJB	67	F	OR-Y	000		000		00	
N		45 9 4.44	-122 49 46.71		016100100S00		(02)														OR<25									
												02	NONE	0	TURN-L															
													PRVTE		S -W													018		00	
													PSNGR CAR			01	DRVR	NONE	38	F	OR-Y	028		000		02	
																					OR<25									
00566	N N N N N N	02/08/2020		16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	ANGL-OTH	01	NONE	0	TURN-L														27,02	
CITY		SA			PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN		PRVTE		S -W													018		00	
N		6P				03			N	DUSK	INJ		PSNGR CAR			01	DRVR	NONE	62	F	OR-Y	016,028		038		27,02	
N		45 9 4.47	-122 49 46.72		016100100S00		(02)														OR<25									
												02	NONE	0	STRGHT															
													PRVTE		W -E													000		00	
													PSNGR CAR			01	DRVR	INJC	24	M	OR-Y	000		000		00	
																					OR<25									
02022	N N N N N N	07/11/2020		16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	ANGL-OTH	01	NONE	0	TURN-L														02	
CITY		SA			PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN		PRVTE		S -W													018		00	
N		12P				03			N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	94	F	OR-Y	028		000		02	
N		45 9 4.46	-122 49 46.71		016100100S00		(02)														OR<25									
												02	NONE	0	STRGHT															
													PRVTE		W -E													000	013	00	
													PSNGR CAR			01	DRVR	INJC	22	F	OR-Y	000		022		00	
																					OR<25									
												02	NONE	0	STRGHT															
													PRVTE		W -E													000	013	00	
													PSNGR CAR			02	PSNG	INJC	56	F		000		000		00	
												03	NONE	0	STOP															
													PRVTE		E -W													012		00	
													PSNGR CAR			01	DRVR	NONE	54	M	OTH-Y	000		000		00	
																					N-RES									
03733	N N N N	12/11/2020		16	WOODBURN-ESTACADA H	ALLEY		N	N	RAIN	ANGL-OTH	01	NONE	9	TURN-L														02	
CITY		FR			PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	WET	TURN		N/A		S -W													018		00	
N		7P				03			N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000		000		00	
N		45 9 4.42	-122 49 46.73		016100100S00		(02)														UNK									
												02	NONE	9	STRGHT															
													N/A		W -E													000		00	
													PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000		000		00	
																					UNK									
00226	N N N N N N	01/23/2021		16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	O-1 L-TURN	01	NONE	9	TURN-L														02	
CITY		SA			PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	TURN		N/A		W -N													000		00	
N		5P				04			N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000		000		00	
N		45 9 4.48	-122 49 48.85		016100100S00		(02)														UNK									
												02	NONE	9	STRGHT															
													N/A		E -W													000		00	
													PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000		000		00	
																					UNK									
00930	N N N N N N	03/27/2021		16	WOODBURN-ESTACADA H	ALLEY		N	N	CLR	O-1 L-TURN	01	NONE	9	STRGHT														02	
CITY		SA			PACIFIC HY 99E	E	(NONE)	STOP SIGN	N	DRY	TURN		N/A		W -E													000		00	

CITY OF WOODBURN, MARION COUNTY

PACIFIC HY 99E and WOODBURN-ESTACADA H, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 44 of 44 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

N		7P			03			N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 46.71	016100100S00		(02)											UNK				
											02 NONE 9	TURN-L									
											N/A	E -S							019		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
01436	N N N N N N	04/17/2019	16	PACIFIC HY 99E	STRGHT		N	N	CLD	S-STRGHT	01 NONE 0	STRGHT								013	13
CITY		WE		WOODBURN-ESTACADA H	N	(NONE)	UNKNOWN	N	DRY	SS-O	PRVTE	S -N							000		00
N		6P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	28	F	OR-Y	045	000		13
N		45 9 5.56	-122 49 51.6	008100100S00		(04)											OR<25				
											02 NONE 0	STRGHT									
											PRVTE	S -N							000	013	00
											PSNGR CAR		01 DRVR	NONE	48	F	OR-Y	000	022		00
																	OR<25				
											03 NONE 0	STOP									
											PRVTE	N -S							012		00
											PSNGR CAR		01 DRVR	INJC	21	F	OR-Y	000	000		00
																	OR<25				
01902	N N N N	05/16/2017	16	WOODBURN-ESTACADA H	STRGHT		Y	N	RAIN	S-1STOP	01 NONE 0	STRGHT									07
CITY		TU		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	WET	REAR	PRVTE	E -W							000		00
N		7A			04			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	19	F	OR-Y	043,026	000		07
N		45 9 4.49	-122 49 49.55	016100100S00		(02)											OR<25				
											02 NONE 0	STOP									
											PRVTE	E -W							011		00
											PSNGR CAR		01 DRVR	INJC	24	F	OR-Y	000	000		00
																	OR<25				
04942	N N N N	11/16/2017	16	WOODBURN-ESTACADA H	STRGHT		Y	N	CLD	S-1STOP	01 NONE 0	STRGHT									29
NO RPT		TH		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	WET	REAR	PRVTE	E -W							000		00
N		3P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	66	M	OR-Y	026	000		29
N		45 9 4.49	-122 49 49.55	016100100S00		(02)											OR<25				
											02 NONE 0	STOP									
											PRVTE	E -W							011		00
											PSNGR CAR		01 DRVR	NONE	46	M	OR-Y	000	000		00
																	OR<25				
03355	N N N N N N	08/18/2017	16	WOODBURN-ESTACADA H	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT									29
CITY		FR		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	REAR	N/A	E -W							000		00
N		4P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.48	-122 49 48.84	016100100S00		(02)											UNK				
											02 NONE 9	STOP									
											N/A	E -W							011		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
03650	N N N N N N	09/28/2018	16	WOODBURN-ESTACADA H	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT								058,079,093	27,29
CITY		FR		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	E -W							000	058,079	00
N		4P			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJA	57	F	OR-Y	016,026	038	093	27,29
N		45 9 4.47	-122 49 43.04	016100100S00		(02)											OR<25				
											02 NONE 0	STOP									
											PRVTE	E -W							011		00
											PSNGR CAR		01 DRVR	NONE	41	F	OR-Y	000	000		00
																	OR>25				
											02 NONE 0	STOP									
											PRVTE	E -W							011		00

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E and WOODBURN-ESTACADA H, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 44 of 44 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

											PSNGR CAR		02 PSNG	NONE	03	M		000	000		00
01055	N N N N	03/30/2018	16	WOODBURN-ESTACADA H	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT									29
NONE		FR		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	REAR	N/A	E -W							000		00
N		1P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 45.24	016100100S00		(02)											UNK				
											02 NONE 9	STOP									
											N/A	E -W							011		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
02545	N N N N	07/14/2018	16	WOODBURN-ESTACADA H	STRGHT		Y	N	UNK	S-STRGHT	01 NONE 9	STRGHT									13
NONE		SA		PACIFIC HY 99E	E	(NONE)	L-GRN-SIG	N	UNK	SS-O	N/A	E -W							000		00
N		2P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.55	-122 49 50.97	016100100S00		(03)											UNK				
											02 NONE 9	STRGHT									
											N/A	E -W							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
83599	N N N N	10/18/2019	16	WOODBURN-ESTACADA H	STRGHT		N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									29
NONE		FR		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	WET	REAR	PRVTE	E -W							000		00
N		7P			04			N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	79	M	OR-Y	026	000		29
N		45 9 4.52	-122 49 50.27	016100100S00		(02)											OR<25				
											02 NONE 0	STOP									
											PRVTE	E -W							011		00
											PSNGR CAR		01 DRVR	INJC	26	M	OR-Y	000	000		00
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	E -W							011		00
											PSNGR CAR		02 PSNG	INJC	25	F		000	000		00
02578	N N N N	07/09/2019	16	WOODBURN-ESTACADA H	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT									29
NO RPT		TU		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	REAR	N/A	E -W							000		00
N		2P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.49	-122 49 48.16	016100100S00		(02)											UNK				
											02 NONE 9	STOP									
											N/A	E -W							011		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				
04403	N N N N	12/03/2021	16	WOODBURN-ESTACADA H	STRGHT		N	N	CLR	S-STRGHT	01 NONE 0	STRGHT									29
CITY		FR		PACIFIC HY 99E	E	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	W -E							000		00
N		5P			03			N	DARK	INJ	PSNGR CAR		01 DRVR	INJC	46	F	OR-Y	042	000		29
N		45 9 4.47	-122 49 45.24	016100100S00		(02)											N-RES				
											02 NONE 0	STRGHT									
											PRVTE	W -E							000		00
											PSNGR CAR		01 DRVR	NONE	67	F	OR-Y	000	000		00
																	OR<25				
05491	N N N N N N	12/20/2017	14	PACIFIC HY 99E	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT								013	07
CITY		WE		WOODBURN-ESTACADA H	S	(NONE)	L-GRN-SIG	N	DRY	REAR	PRVTE	S -N							000		00
N		10A			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	19	M	OR-Y	043,026	000		07
N		45 9 3.78	-122 49 53.17	008100100S00		(05)											OR<25				

PACIFIC HY 99E and WOODBURN-ESTACADA H, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 44 of 44 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

											02 NONE 0	STOP									
											PRVTE	S -N							012	013	00
											PSNGR CAR		01 DRVR	INJC	39	F	OR-Y	000	022		00
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	S -N							012	013	00
											PSNGR CAR		02 PSNG	INJC	14	F		000	000		00
											02 NONE 0	STOP									
											PRVTE	S -N							012	013	00
											PSNGR CAR		03 PSNG	INJC	13	F		000	000		00
											03 NONE 0	STOP									
											PRVTE	S -N							012		00
											PSNGR CAR		01 DRVR	INJC	24	F	OR-Y	000	000		00
																	OR<25				
01126	N N N N N N	04/05/2018	14	PACIFIC HY 99E	STRGHT		Y	N	RAIN	S-1STOP	01 NONE 0	STRGHT								013	27,29
CITY		TH		WOODBURN-ESTACADA H	S	(NONE)	L-GRN-SIG	N	WET	REAR	PRVTE	S -N							000		00
N		5P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	30	M	OR-Y	016,026	038		27,29
N		45 9 3.77	-122 49 53.18	008100100S00		(05)											OR<25				
											02 NONE 0	STOP									
											PRVTE	S -N							012	013	00
											PSNGR CAR		01 DRVR	NONE	19	F	OR-Y	000	022		00
																	OR<25				
											03 NONE 0	STOP									
											PRVTE	S -N							012		00
											PSNGR CAR		01 DRVR	INJC	28	F	OR-Y	000	000		00
																	OR<25				
03694	N N N N N N	10/01/2018	14	PACIFIC HY 99E	STRGHT		N	Y	CLD	FIX OBJ	01 NONE 0	STRGHT								044	17
CITY		MO		WOODBURN-ESTACADA H	S	(RSDMD)	UNKNOWN	N	DRY	FIX	PRVTE	S -N							000	044	00
Y		7A			05			N	DAY	INJ	PSNGR CAR		01 DRVR	INJA	52	F	OR-Y	081	028		17
N		45 9 3.78	-122 49 53.18	008100100S00		(04)											OR<25				
03872	N N N N	10/12/2018	14	PACIFIC HY 99E	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
NO RPT		FR		WOODBURN-ESTACADA H	S	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	S -N							000		00
N		5P			00			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	78	F	OR-Y	026	000		29
N		45 9 3.78	-122 49 53.17	008100100S00		(04)											OR<25				
											02 NONE 0	STOP									
											PRVTE	S -N							011		00
											PSNGR CAR		01 DRVR	INJC	25	F	OR-Y	000	000		00
																	OR<25				
03258	N N N N	08/31/2018	14	PACIFIC HY 99E	STRGHT		Y	N	CLR	S-STRGHT	01 NONE 9	STRGHT									13
NONE		FR		WOODBURN-ESTACADA H	S	(NONE)	UNKNOWN	N	DRY	SS-O	N/A	S -N							000		00
N		5P			06			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 2.89	-122 49 53.97	008100100S00		(04)											UNK				
											02 NONE 9	STRGHT									
											N/A	S -N							000		00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																	UNK				

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.03 to 0.13 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

Gray fill indicates crashes that are duplicates or not intersection-related.

1 - 23 of 23 Crash records shown.

SER# INVEST RD DPT UNLOC?	S P E A U I C O / D R J S W / E L G N H R / D C S V L K	DATE DAY TIME LAT	COUNTY CITY URBAN AREA LONG	RD# FC COMPNT MLG TYP MILEPNT	CONN# FIRST STREET SECOND STREET LRS	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V#	SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
83599	N N N N	10/18/2019	MARION	1 16		STRGHT		N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NONE		FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	E -W									000		00
N		7P	WOODBURN UA	0.03	PACIFIC HY 99E	04			N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	79	M	OR-Y		026	000		29
N		45 9 4.52	-122 49 50.27		016100100S00		(02)													OR<25					
												02	NONE 0	STOP											
													PRVTE	E -W									011		00
													PSNGR CAR		01	DRVR	INJC	26	M	OR-Y		000	000		00
																				OR<25					
												02	NONE 0	STOP											
													PRVTE	E -W									011		00
													PSNGR CAR		02	PSNG	INJC	25	F			000	000		00
01902	N N N N	05/16/2017	MARION	1 16		STRGHT		Y	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
CITY		TU	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	E -W									000		00
N		7A	WOODBURN UA	0.04	PACIFIC HY 99E	04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		043,026	000		07
N		45 9 4.49	-122 49 49.55		016100100S00		(02)													OR<25					
												02	NONE 0	STOP											
													PRVTE	E -W									011		00
													PSNGR CAR		01	DRVR	INJC	24	F	OR-Y		000	000		00
																				OR<25					
04942	N N N N	11/16/2017	MARION	1 16		STRGHT		Y	N	CLD	S-1STOP	01	NONE 0	STRGHT											29
NO RPT		TH	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	E -W									000		00
N		3P	WOODBURN UA	0.04	PACIFIC HY 99E	04			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	66	M	OR-Y		026	000		29
N		45 9 4.49	-122 49 49.55		016100100S00		(02)													OR<25					
												02	NONE 0	STOP											
													PRVTE	E -W									011		00
													PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		000	000		00
																				OR<25					
04591	N N N N N N	10/28/2017	MARION	1 16		ALLEY		N	N	CLR	S-1TURN	01	NONE 0	STRGHT										001	06
CITY		SA	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	W -E									031		00
N		6P	WOODBURN UA	0.05	PACIFIC HY 99E	04			N	DUSK	INJ		MTRCYCLE		01	DRVR	INJB	60	M	OR-Y		032	000	001	06
N		45 9 4.48	-122 49 48.84		016100100S00		(02)													OR<25					
												02	NONE 0	TURN-L											
													PRVTE	W -N									000		00
													PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		000	000		00
																				OR<25					
03355	N N N N N N	08/18/2017	MARION	1 16		STRGHT		Y	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
CITY		FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR		N/A	E -W									000		00
N		4P	WOODBURN UA	0.05	PACIFIC HY 99E	04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N		45 9 4.48	-122 49 48.84		016100100S00		(02)													UNK					
												02	NONE 9	STOP											
													N/A	E -W									011		00
													PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																				UNK					
00226	N N N N N N	01/23/2021	MARION	1 16		ALLEY		N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L											02
CITY		SA	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	TURN		N/A	W -N									000		00

Gray fill indicates crashes that are duplicates or not intersection-related.

1 - 23 of 23 Crash records shown.

N		5P	WOODBURN UA	0.05	PACIFIC HY 99E	04			N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.48	-122 49 48.85		016100100S00		(02)											UNK				
												02 NONE 9	STRGHT									
												N/A	E -W							000		00
												PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																		UNK				
02578	N N N N	07/09/2019	MARION	1 16		STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT									29
NO RPT		TU	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR	N/A	E -W							000		00
N		2P	WOODBURN UA	0.06	PACIFIC HY 99E	04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.49	-122 49 48.16		016100100S00		(02)											UNK				
												02 NONE 9	STOP									
												N/A	E -W							011		00
												PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																		UNK				
01221	N N N N N N	03/30/2017	MARION	1 16		ALLEY		N	Y	CLR	O-OTHER	01 NONE 9	TURN-L									02
STATE		TH	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	E -S							019		00
N		2P	WOODBURN UA	0.07	PACIFIC HY 99E	02			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 47.42		016100100S00		(02)											UNK				
												02 NONE 9	STRGHT									
												N/A	W -E							000		00
												PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																		UNK				
02091	N N N N	06/11/2018	MARION	1 16		ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 9	STRGHT									02
CITY		MO	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	W -E							000		00
N		7P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.46	-122 49 46.7		016100100S00		(02)											UNK				
												02 NONE 9	TURN-L									
												N/A	E -S							019		00
												PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
																		UNK				
00435	N N N N N N	02/04/2019	MARION	1 16		ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 0	TURN-L								013	02
CITY		MO	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	WET	TURN	PRVTE	S -W							018	013	00
N		12P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	18	F	OR-Y	028	022		02
N		45 9 4.45	-122 49 46.71		016100100S00		(02)											OR<25				
												02 NONE 0	STRGHT									
												PRVTE	W -E							000		00
												PSNGR CAR		01 DRVR	INJC	46	F	OR-Y	000	000		00
																		OR<25				
												02 NONE 0	STRGHT									
												PRVTE	W -E							000		00
												PSNGR CAR		02 PSNG	INJC	83	F		000	000		00
												03 NONE 0	STRGHT									
												PRVTE	E -W							022		00
												PSNGR CAR		01 DRVR	NONE	49	M	OR-Y	000	022		00
																		OR<25				
02682	N N N N	07/17/2019	MARION	1 16		ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT									02
NO RPT		WE	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	W -E							000		00
N		6A	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK	000	000		00
N		45 9 4.45	-122 49 46.68		016100100S00		(02)											UNK				
												02 NONE 9	TURN-R									
												N/A	S -E							018		00

Highway 161 ALL ROAD TYPES, MP 0.03 to 0.13 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

Gray fill indicates crashes that are duplicates or not intersection-related.

1 - 23 of 23 Crash records shown.

												SEMI TOW		01 DRVR	NONE	00 Unk	UNK	000	000	00
																	UNK			
00273	N N N N N N	01/18/2020	MARION	1 16		ALLEY		N	N	CLD	ANGL-OTH	01 NONE 0	STRGHT							02
CITY		SA	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	WET	TURN	PRVTE	W -E						000	00
N		11A	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	67 F	OR-Y	000	000	00
N		45 9 4.44	-122 49 46.71		016100100S00		(02)										OR<25			
												02 NONE 0	TURN-L							
												PRVTE	S -W						018	00
												PSNGR CAR		01 DRVR	NONE	38 F	OR-Y	028	000	02
																	OR<25			
00566	N N N N N N	02/08/2020	MARION	1 16		ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L							27,02
CITY		SA	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	S -W						018	00
N		6P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DUSK	INJ	PSNGR CAR		01 DRVR	NONE	62 F	OR-Y	016,028	038	27,02
N		45 9 4.47	-122 49 46.72		016100100S00		(02)										OR<25			
												02 NONE 0	STRGHT							
												PRVTE	W -E						000	00
												PSNGR CAR		01 DRVR	INJC	24 M	OR-Y	000	000	00
																	OR<25			
02022	N N N N N N	07/11/2020	MARION	1 16		ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L							02
CITY		SA	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	S -W						018	00
N		12P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	94 F	OR-Y	028	000	02
N		45 9 4.46	-122 49 46.71		016100100S00		(02)										OR<25			
												02 NONE 0	STRGHT							
												PRVTE	W -E						000 013	00
												PSNGR CAR		01 DRVR	INJC	22 F	OR-Y	000	022	00
																	OR<25			
												02 NONE 0	STRGHT							
												PRVTE	W -E						000 013	00
												PSNGR CAR		02 PSNG	INJC	56 F		000	000	00
												03 NONE 0	STOP							
												PRVTE	E -W						012	00
												PSNGR CAR		01 DRVR	NONE	54 M	OTH-Y	000	000	00
																	N-RES			
03733	N N N N	12/11/2020	MARION	1 16		ALLEY		N	N	RAIN	ANGL-OTH	01 NONE 9	TURN-L							02
CITY		FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	WET	TURN	N/A	S -W						018	00
N		7P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 4.42	-122 49 46.73		016100100S00		(02)										UNK			
												02 NONE 9	STRGHT							
												N/A	W -E						000	00
												PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																	UNK			
00930	N N N N N N	03/27/2021	MARION	1 16		ALLEY		N	N	CLR	O-1 L-TURN	01 NONE 9	STRGHT							02
CITY		SA	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	N/A	W -E						000	00
N		7P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
N		45 9 4.46	-122 49 46.71		016100100S00		(02)										UNK			
												02 NONE 9	TURN-L							
												N/A	E -S						019	00
												PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
																	UNK			
04085	N N N N	08/30/2018	MARION	1 16		ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L							02

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.03 to 0.13 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

1 - 23 of 23 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

NONE		TH	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	S -W													018		00	
N		3P	WOODBURN UA	0.08		PACIFIC HY 99E	04			N	DAY	INJ	PSNGR CAR		01	DRVR	NONE	71	F	OTH-Y					028		000		02	
N		45 9 4.45	-122 49 46.7			016100100S00		(02)												N-RES										
													02	NONE	0		TURN-L														
														PRVTE			E -S										019		00	
														PSNGR CAR		01	DRVR	INJC	43	F	OR-Y			000		000		00	
																					OR<25									
04853	N N N N	12/17/2018	MARION	1	16		ALLEY		N	N	CLR	ANGL-OTH	01	NONE	0		TURN-L													02	
NONE		MO	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	TURN	PRVTE	S -W													018		00	
N		7A	WOODBURN UA	0.08		PACIFIC HY 99E	04			N	DAY	INJ	PSNGR CAR		01	DRVR	NONE	48	F	OR-Y			028		000		02	
N		45 9 4.45	-122 49 46.71			016100100S00		(02)												OR<25										
													02	NONE	0		STRGHT														
														PRVTE			E -W										000		00	
														PSNGR CAR		01	DRVR	INJC	18	M	OR-Y			000		000		00	
																					OR<25									
04403	N N N N	12/03/2021	MARION	1	16		STRGHT		N	N	CLR	S-STRGHT	01	NONE	0		STRGHT													29	
CITY		FR	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE				W -E										000		00	
N		5P	WOODBURN UA	0.10		PACIFIC HY 99E	03			N	DARK	INJ	PSNGR CAR		01	DRVR	INJC	46	F	OR-Y			042		000		29	
N		45 9 4.47	-122 49 45.24			016100100S00		(02)												N-RES										
													02	NONE	0		STRGHT														
														PRVTE			W -E										000		00	
														PSNGR CAR		01	DRVR	NONE	67	F	OR-Y			000		000		00	
																					OR<25									
01055	N N N N	03/30/2018	MARION	1	16		STRGHT		Y	N	CLR	S-1STOP	01	NONE	9		STRGHT													29	
NONE		FR	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR	N/A				E -W										000		00	
N		1P	WOODBURN UA	0.10		PACIFIC HY 99E	04			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK			000		000		00	
N		45 9 4.46	-122 49 45.24			016100100S00		(02)												UNK										
													02	NONE	9		STOP														
														N/A			E -W										011		00	
														PSNGR CAR		01	DRVR	NONE	00	Unk	UNK			000		000		00	
																					UNK									
02135	N N N N	06/03/2019	MARION	1	16		ALLEY		N	N	CLR	O-1 L-TURN	01	NONE	9		TURN-L													02	
NONE		MO	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	TURN	N/A				W -N										019		00	
N		3P	WOODBURN UA	0.11		PACIFIC HY 99E	04			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK			000		000		00	
N		45 9 4.46	-122 49 44.5			016100100S00		(02)												UNK										
													02	NONE	9		STRGHT														
														N/A			E -W										000		00	
														PSNGR CAR		01	DRVR	NONE	00	Unk	UNK			000		000		00	
																					UNK									
04802	N N N N	12/01/2019	MARION	1	16		ALLEY		N	N	CLD	ANGL-OTH	01	NONE	9		UNK													02	
NONE		SU	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	WET	TURN	N/A				N -UN										018		00	
N		1P	WOODBURN UA	0.11		PACIFIC HY 99E	04			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK			000		000		00	
N		45 9 4.47	-122 49 44.53			016100100S00		(02)												UNK										
													02	NONE	9		STRGHT														
														N/A			E -W										000		00	
														PSNGR CAR		01	DRVR	NONE	00	Unk	UNK			000		000		00	
																					UNK									
03650	N N N N N N	09/28/2018	MARION	1	16		STRGHT		Y	N	CLR	S-1STOP	01	NONE	0		STRGHT												058,079, nas	27,29	
CITY		FR	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE				E -W										000	058,079	00	
N		4P	WOODBURN UA	0.13		PACIFIC HY 99E	04			N	DAY	INJ	PSNGR CAR		01	DRVR	INJA	57	F	OR-Y			016,026	038	093		27,29	
N		45 9 4.47	-122 49 43.04			016100100S00		(02)												OR<25										

1 - 23 of 23 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

02 NONE 0	STOP										
PRVTE	E -W								011	00
PSNGR CAR		01 DRVR	NONE	41	F	OR-Y		000	000	00
						OR>25				
02 NONE 0	STOP										
PRVTE	E -W								011	00
PSNGR CAR		02 PSNG	NONE	03	M			000	000	00

CITY OF WOODBURN, MARION COUNTY

WOODBURN-ESTACADA H and JUNE WAY, City of Woodburn, Marion County, 01/01/2017 to 12/31/2021

1 - 2 of 2 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

SER# / INVEST / RD DPT / UNLOC?	S P E E D / D A L C R U G S J I N V S C H L W O R K	DATE / DAY / TIME / LAT	CLASS / DIST FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02582	N N N N	07/10/2019	16	WOODBURN-ESTACADA H	INTER	3-LEG	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											29
NONE		WE		JUNE WAY	W		STOP SIGN	N	DRY	REAR		PRVTE	W -E									000		00
N		4P			06	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	47	M	OR-Y		042	000		29
N		45 9 4.51	-122 49 35.68	016100100S00															OR>25					
											02	NONE 0	STRGHT											
												PRVTE	W -E									006		00
												PSNGR CAR		01	DRVR	INJC	42	F	OR-Y		000	000		00
																			OR>25					
05057	N N N N N N	12/16/2019	16	WOODBURN-ESTACADA H	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										010	02
CITY		MO		JUNE WAY	CN		STOP SIGN	N	DRY	TURN		PRVTE	SW-W									000		00
N		9A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		028	000		02
N		45 9 4.49	-122 49 35.68	016100100S00															OR<25					
											02	NONE 0	STRGHT											
												PRVTE	W -E									000	010	00
												PSNGR CAR		01	DRVR	INJC	50	F	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	W -E									000	010	00
												PSNGR CAR		02	PSNG	INJC	58	M			000	000		00

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.3 to 0.6 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

1 - 2 of 2 Crash records shown.

Gray fill indicates crashes that are duplicates or not intersection-related.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A E L C	M J U G S V	S I N H L	W C O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / WTHR / CRASH RNDBT / SURF / COLL DRVWY / LIGHT / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02625	N	N	N	N		08/29/2020	MARION	1 06		STRGHT		N	Y CLR FIX OBJ	01	NONE 9	STRGHT										079,062, 121	16
STATE						SA		MN 0		UN	(NONE)	UNKNOWN	N DRY FIX		N/A	W -E									000		00
Y						9P		0.48		01			N DARK PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N						45 9 4.39	-122 49 17.49		016100100S00		(02)												UNK					
03154	N	N	N	N	N	07/20/2017	MARION	1 06		STRGHT		N	N CLR ANGL-OTH	01	NONE 1	STRGHT										001	02
STATE						TH		MN 0		UN	(NONE)	UNKNOWN	N DRY TURN		PRVTE	W -E									000		00
N						11P		0.48		03			N DARK FAT		SEMI TOW		01	DRVR	NONE	23	M	OR-Y		000	000		00
N						45 9 4.38	-122 49 17.49		016100100S00		(02)												OR<25					
														02	NONE 0	TURN-R											
															PRVTE	S -E									051		00
															FARM TRCTR		01	DRVR	INJA	30	M	OR-Y		028	000	001	02
																						OR<25					
														02	NONE 0	TURN-R											
															PRVTE	S -E									051		00
															FARM TRCTR		02	PSNG	KILL	47	M			000	000	001	00
														02	NONE 0	TURN-R											
															PRVTE	S -E									051		00
															FARM TRCTR		03	PSNG	INJA	60	M			000	000	001	00

Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	Safeway Shopping Center
Highway:	OR 211 (Molalla Road)
MP:	0.08
Posted Speed:	35
Analyst:	J
Condition:	2023 Existing

Turn Movement Volumes

AM

		SBR	SBT	SBL	
		-	-	-	
EBL	-				- WBR
EBT	255				366 WBT
EBR	133				17 WBL
		138	-	28	
		NBL	NBT	NBR	

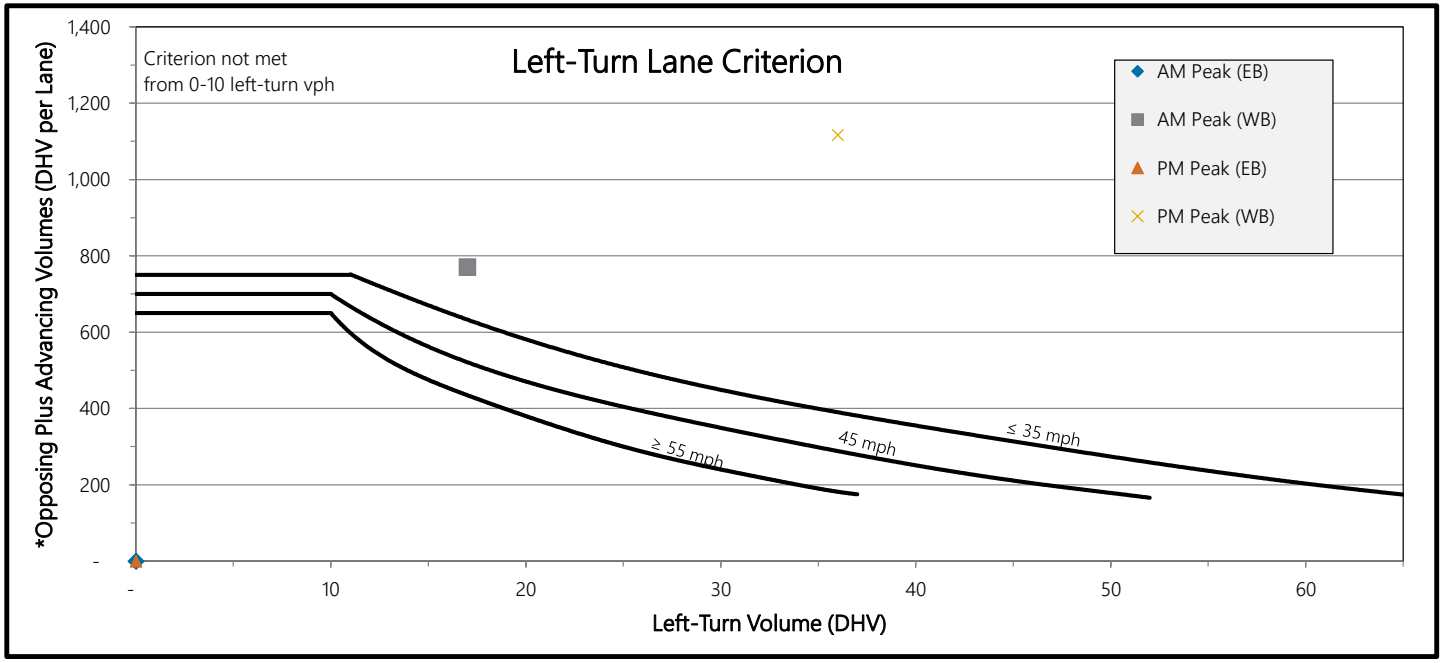
PM

		SBR	SBT	SBL	
		-	-	-	
EBL	-				- WBR
EBT	435				453 WBT
EBR	193				36 WBL
		161	-	128	
		NBL	NBT	NBR	

	EB	WB
Through Lanes (Including Shared):	1	1

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	-	-
WB DHV Lefts =	17	36
EB DHV (Opposing + Advancing) =	-	-
WB DHV (Opposing + Advancing) =	771	1,117



* (Advancing Volume/Advancing Thru Lanes) + (Opposing Volume/Opposing Thru Lanes). Opposing left-turns are not counted as opposing volumes.

Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	Safeway Shopping Center
Highway:	OR 211 (Molalla Road)
MP:	0.08
Posted Speed:	35
Analyst:	J
Condition:	2025 Background

Turn Movement Volumes

AM

		SBR	SBT	SBL	
		-	-	-	
EBL	-				- WBR
EBT	281				443 WBT
EBR	134				17 WBL
		139	-	28	
		NBL	NBT	NBR	

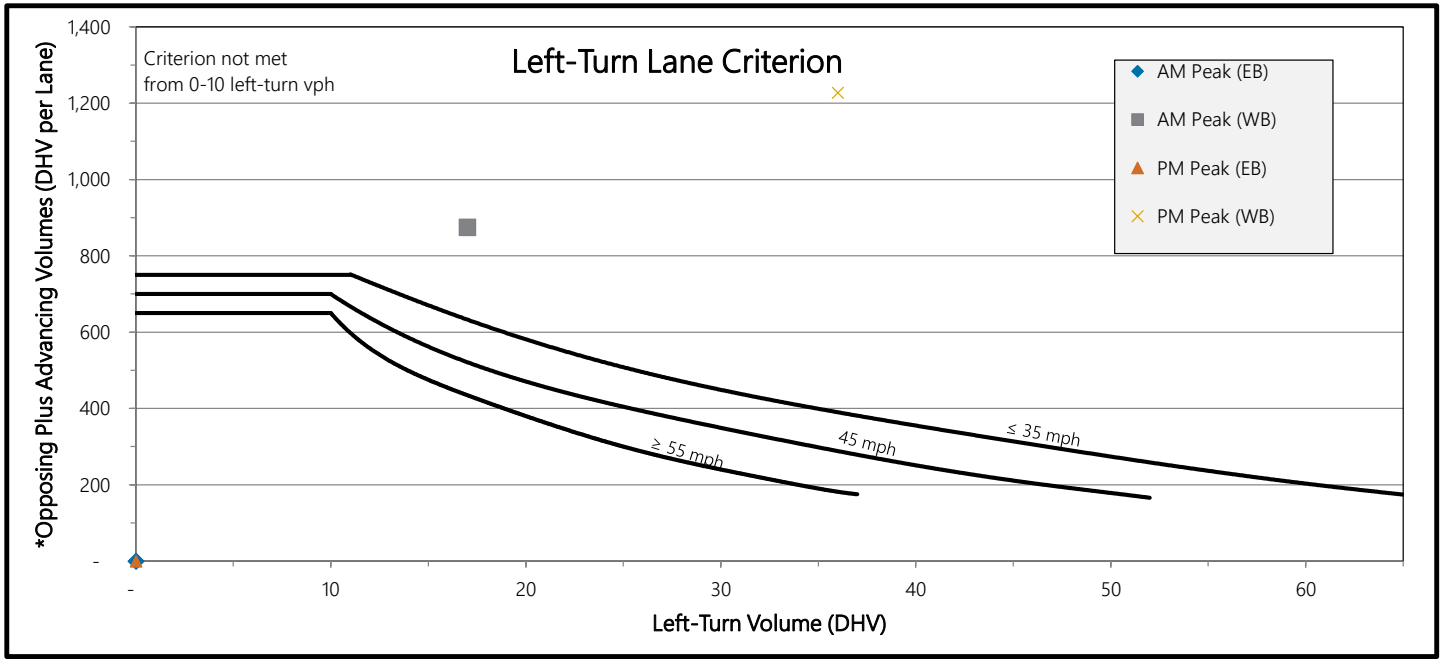
PM

		SBR	SBT	SBL	
		-	-	-	
EBL	-				- WBR
EBT	498				498 WBT
EBR	195				36 WBL
		163	-	129	
		NBL	NBT	NBR	

	EB	WB
Through Lanes (Including Shared):	1	1

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	-	-
WB DHV Lefts =	17	36
EB DHV (Opposing + Advancing) =	-	-
WB DHV (Opposing + Advancing) =	875	1,227



* (Advancing Volume/Advancing Thru Lanes) + (Opposing Volume/Opposing Thru Lanes). Opposing left-turns are not counted as opposing volumes.

Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	Safeway Shopping Center
Highway:	OR 211 (Molalla Road)
MP:	0.08
Posted Speed:	35
Analyst:	J
Condition:	2025 Buildout

Turn Movement Volumes

AM

		SBR	SBT	SBL	
		-	-	-	
EBL	-				- WBR
EBT	335				497 WBT
EBR	134				17 WBL
		138	-	28	
		NBL	NBT	NBR	

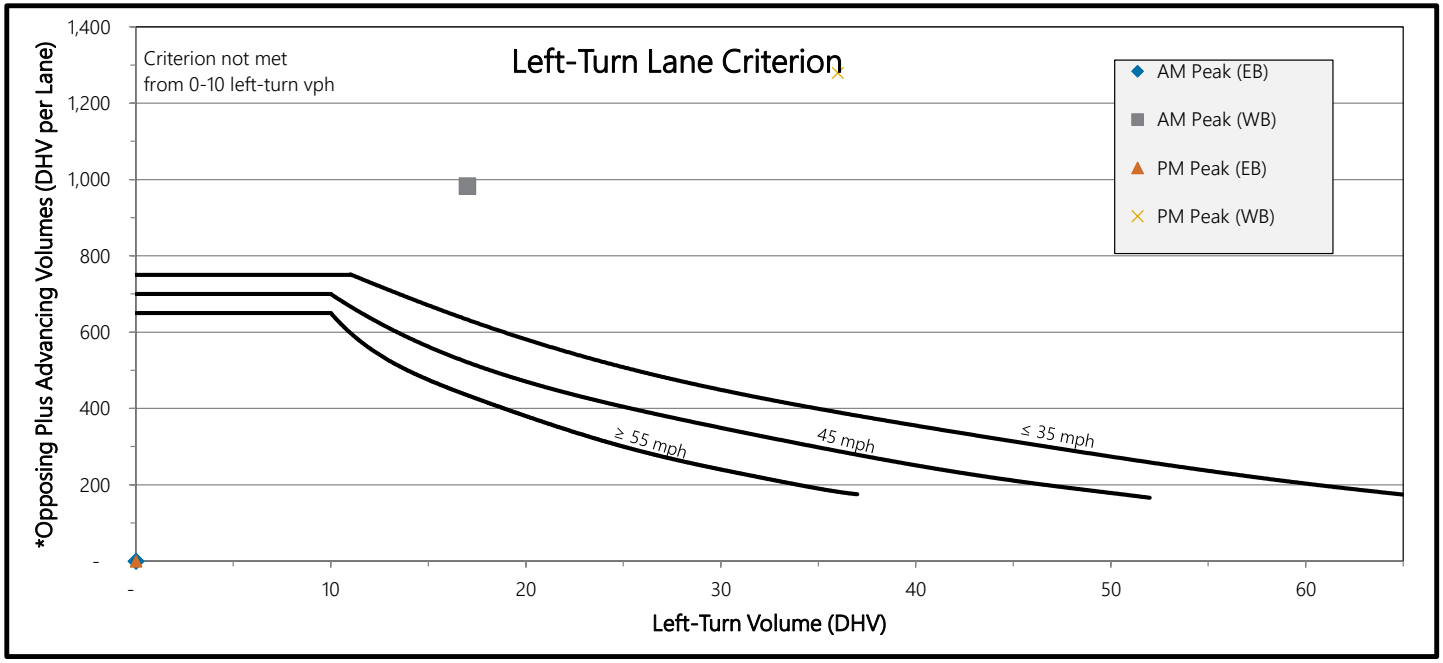
PM

		SBR	SBT	SBL	
		-	-	-	
EBL	-				- WBR
EBT	525				523 WBT
EBR	195				36 WBL
		163	-	129	
		NBL	NBT	NBR	

	EB	WB
Through Lanes (Including Shared):	1	1

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	-	-
WB DHV Lefts =	17	36
EB DHV (Opposing + Advancing) =	-	-
WB DHV (Opposing + Advancing) =	983	1,279



* (Advancing Volume/Advancing Thru Lanes) + (Opposing Volume/Opposing Thru Lanes). Opposing left-turns are not counted as opposing volumes.

Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	June Way/Woodburn Place
Highway:	OR 211 (Molalla Road)
MP:	0.08
Posted Speed:	35
Analyst:	J
Condition:	2025 Background

Turn Movement Volumes

AM

		SBR	SBT	SBL	
		68	2	9	
EBL	20			2	WBR
EBT	283			357	WBT
EBR	15			4	WBL
		32	1	1	
		NBL	NBT	NBR	

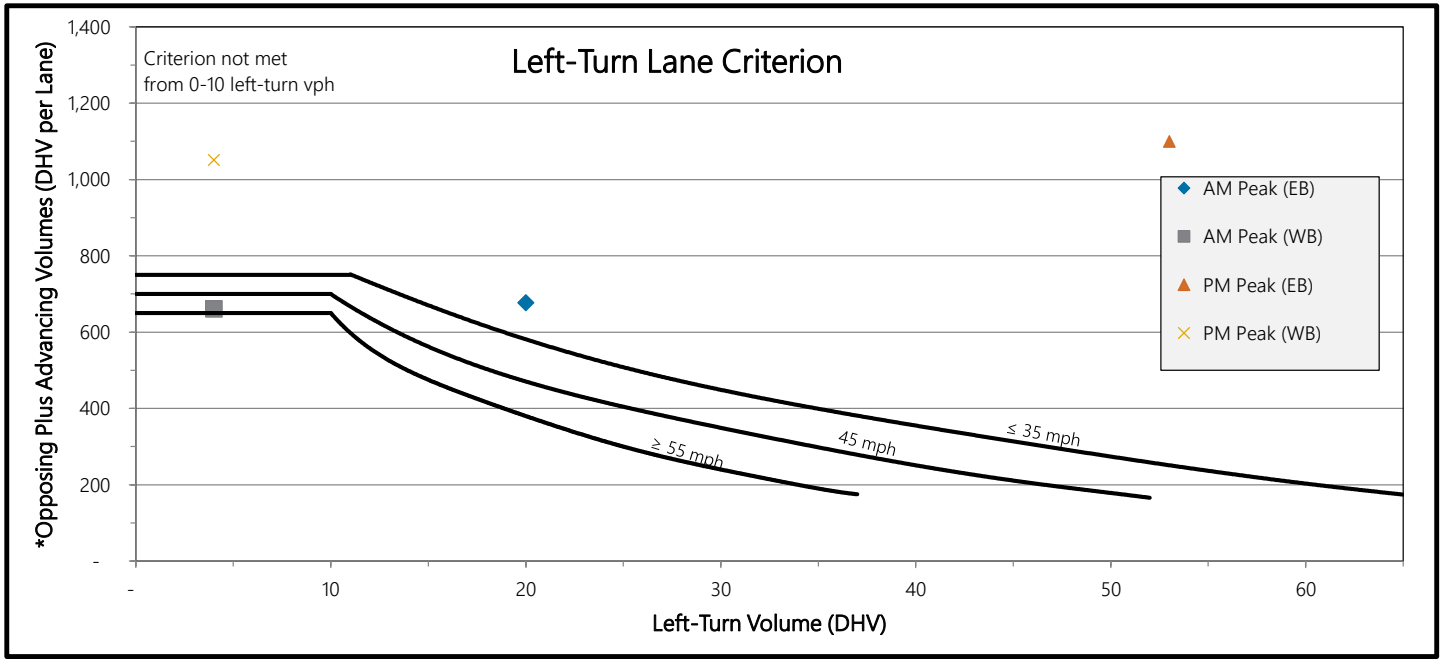
PM

		SBR	SBT	SBL	
		34	1	4	
EBL	53			7	WBR
EBT	534			464	WBT
EBR	42			4	WBL
		20	2	5	
		NBL	NBT	NBR	

	EB	WB
Through Lanes (Including Shared):	1	1

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	20	53
WB DHV Lefts =	4	4
EB DHV (Opposing + Advancing) =	677	1,100
WB DHV (Opposing + Advancing) =	661	1,051



* (Advancing Volume/Advancing Thru Lanes) + (Opposing Volume/Opposing Thru Lanes). Opposing left-turns are not counted as opposing volumes.

Turn Lane Evaluation (E-W Hwy Orientation)

Evaluation:	June Way/Woodburn Place
Highway:	OR 211 (Molalla Road)
MP:	0.08
Posted Speed:	35
Analyst:	J
Condition:	2025 Buildout

Turn Movement Volumes

AM

		SBR	SBT	SBL		
		67	2	9		
EBL	19				2	WBR
EBT	338				412	WBT
EBR	15				4	WBL
		32	1	1		
		NBL	NBT	NBR		

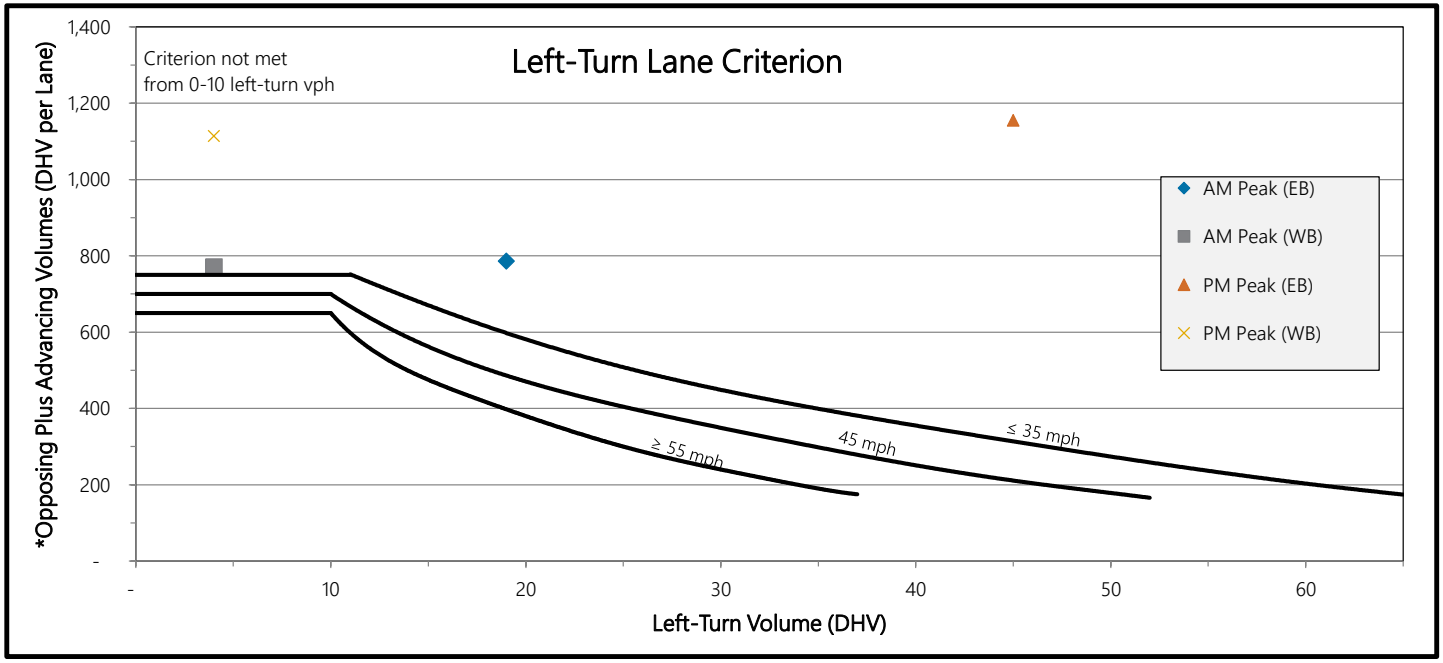
PM

		SBR	SBT	SBL		
		30	1	4		
EBL	45				6	WBR
EBT	569				493	WBT
EBR	42				4	WBL
		20	2	5		
		NBL	NBT	NBR		

	EB	WB
Through Lanes (Including Shared):	1	1

Left-Turn Evaluation

	AM	PM
EB DHV Lefts =	19	45
WB DHV Lefts =	4	4
EB DHV (Opposing + Advancing) =	786	1,155
WB DHV (Opposing + Advancing) =	771	1,114



* (Advancing Volume/Advancing Thru Lanes) + (Opposing Volume/Opposing Thru Lanes). Opposing left-turns are not counted as opposing volumes.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Background Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Safeway Access	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1227	PM Peak Hour Volumes:	292	Total
			129	Rights
			100%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	12,270	8,850	
Minor Street*	1,630	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	12,270	13,300	
Minor Street*	1,630	1,350	**No**
Combination Warrant			
Major Street	12,270	10,640	
Minor Street*	1,630	2,120	**No**

* Minor street right-turning traffic volumes reduced by 100%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Buildout Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Safeway Access	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1227	PM Peak Hour Volumes:	292	Total
			129	Rights
			100%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	12,270	8,850	
Minor Street*	1,630	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	12,270	13,300	
Minor Street*	1,630	1,350	**No**
Combination Warrant			
Major Street	12,270	10,640	
Minor Street*	1,630	2,120	**No**

* Minor street right-turning traffic volumes reduced by 100%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Background Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	June Way/Woodburn Place West	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1104	PM Peak Hour Volumes:	39	Total
			34	Rights
			50%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	11,040	8,850	
Minor Street*	220	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	11,040	13,300	
Minor Street*	220	1,350	**No**
Combination Warrant			
Major Street	11,040	10,640	
Minor Street*	220	2,120	**No**

* Minor street right-turning traffic volumes reduced by 50%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Buildout Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	June Way/Woodburn Place West	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1159	PM Peak Hour Volumes:	35	Total
			30	Rights
			50%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	11,590	8,850	
Minor Street*	200	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	11,590	13,300	
Minor Street*	200	1,350	**No**
Combination Warrant			
Major Street	11,590	10,640	
Minor Street*	200	2,120	**No**

* Minor street right-turning traffic volumes reduced by 50%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Buildout Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Primary Site Access	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1056	PM Peak Hour Volumes:	47	Total
			36	Rights
			100%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	10,560	8,850	
Minor Street*	110	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	10,560	13,300	
Minor Street*	110	1,350	**No**
Combination Warrant			
Major Street	10,560	10,640	
Minor Street*	110	2,120	**No**

* Minor street right-turning traffic volumes reduced by 100%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Background Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Woodburn Place East	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1017	PM Peak Hour Volumes:	15	Total
			15	Rights
			50%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	10,170	8,850	
Minor Street*	80	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	10,170	13,300	
Minor Street*	80	1,350	**No**
Combination Warrant			
Major Street	10,170	10,640	
Minor Street*	80	2,120	**No**

* Minor street right-turning traffic volumes reduced by 50%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Buildout Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Woodburn Place East	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1159	PM Peak Hour Volumes:	15	Total
			15	Rights
			50%	RT Discount

Warrant Used:

X	100 percent of standard warrants used
	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	11,590	8,850	
Minor Street*	80	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	11,590	13,300	
Minor Street*	80	1,350	**No**
Combination Warrant			
Major Street	11,590	10,640	
Minor Street*	80	2,120	**No**

* Minor street right-turning traffic volumes reduced by 50%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Background Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Cooley Road	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1104	PM Peak Hour Volumes:	82	Total
			59	Rights
			50%	RT Discount

Warrant Used:

	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	11,040	6,200	
Minor Street*	530	1,850	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	11,040	9,300	
Minor Street*	530	950	**No**
Combination Warrant			
Major Street	11,040	7,440	
Minor Street*	530	1,480	**No**

* Minor street right-turning traffic volumes reduced by 50%.

Preliminary Traffic Signal Warrant Analysis

Project:	2115 Molalla Road
Date:	10/11/2023
Scenario:	Year 2025 Buildout Conditions - PM

Major Street:	Molalla Road (OR 211)	Minor Street:	Cooley Road	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	993	PM Peak Hour Volumes:	84	Total
			59	Rights
			50%	RT Discount

Warrant Used:

	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	9,930	6,200	
Minor Street*	550	1,850	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	9,930	9,300	
Minor Street*	550	950	**No**
Combination Warrant			
Major Street	9,930	7,440	
Minor Street*	550	1,480	**No**

* Minor street right-turning traffic volumes reduced by 50%.

Appendix D - Operations

Definitions

Synchro Reports

Queuing Reports

Level of Service Definitions

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

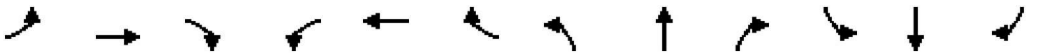
- *Level of service A:* Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.
- *Level of service B:* Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.
- *Level of service C:* Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.
- *Level of service D:* Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.
- *Level of service E:* Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.
- *Level of service F:* Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

Level of Service Criteria
For Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

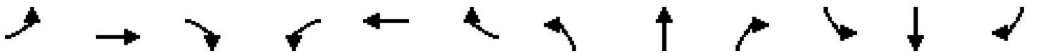
Level of Service Criteria
For Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	206	73	145	257	96	184	449	97	85	307	90
Future Volume (vph)	122	206	73	145	257	96	184	449	97	85	307	90
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1527		2906	3107	1282	1409	2825	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1527		2906	3107	1282	1409	2825	
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)	128	217	77	153	271	101	194	473	102	89	323	95
RTOR Reduction (vph)	0	0	57	0	11	0	0	0	71	0	24	0
Lane Group Flow (vph)	128	217	20	153	361	0	194	473	31	89	394	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	11.4	23.4	23.4	13.6	25.6		11.0	26.9	26.9	9.0	24.9	
Effective Green, g (s)	11.9	23.9	23.9	14.1	26.1		11.5	27.4	27.4	9.5	25.4	
Actuated g/C Ratio	0.13	0.26	0.26	0.16	0.29		0.13	0.30	0.30	0.10	0.28	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	205	407	329	241	438		367	936	386	147	789	
v/s Ratio Prot	0.08	0.14		c0.10	c0.24		c0.07	c0.15		0.06	0.14	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.62	0.53	0.06	0.63	0.82		0.53	0.51	0.08	0.61	0.50	
Uniform Delay, d1	37.4	28.7	25.1	36.0	30.2		37.2	26.2	22.7	38.9	27.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.0	1.0	0.1	4.7	11.6		1.1	0.3	0.1	5.8	0.4	
Delay (s)	42.4	29.8	25.2	40.7	41.9		38.2	26.5	22.8	44.7	27.8	
Level of Service	D	C	C	D	D		D	C	C	D	C	
Approach Delay (s/veh)		32.8			41.5			29.0			30.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	206	73	145	257	96	184	449	97	85	307	90
Future Volume (veh/h)	122	206	73	145	257	96	184	449	97	85	307	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	128	217	0	153	271	90	194	473	55	89	323	69
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	171	416		200	329	109	335	923	381	140	687	145
Arrive On Green	0.11	0.26	0.00	0.13	0.28	0.28	0.11	0.29	0.29	0.10	0.28	0.27
Sat Flow, veh/h	1589	1573	1286	1576	1158	385	2956	3143	1298	1433	2471	520
Grp Volume(v), veh/h	128	217	0	153	0	361	194	473	55	89	195	197
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	0	1542	1478	1572	1298	1433	1507	1485
Q Serve(g_s), s	5.8	8.7	0.0	6.9	0.0	16.1	4.6	9.2	2.3	4.4	7.9	8.2
Cycle Q Clear(g_c), s	5.8	8.7	0.0	6.9	0.0	16.1	4.6	9.2	2.3	4.4	7.9	8.2
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	171	416		200	0	439	335	923	381	140	419	413
V/C Ratio(X)	0.75	0.52		0.76	0.00	0.82	0.58	0.51	0.14	0.64	0.47	0.48
Avail Cap(c_a), veh/h	280	672		427	0	805	561	1556	642	311	787	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	23.1	0.0	31.1	0.0	24.7	31.0	21.7	19.2	32.0	22.1	22.2
Incr Delay (d2), s/veh	4.9	0.8	0.0	4.5	0.0	3.0	1.2	0.3	0.1	3.5	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.1	0.0	2.8	0.0	5.8	1.6	3.2	0.7	1.6	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.8	23.9	0.0	35.6	0.0	27.7	32.2	22.0	19.3	35.5	22.7	22.9
LnGrp LOS	D	C		D		C	C	C	B	D	C	C
Approach Vol, veh/h		345			514			722			481	
Approach Delay, s/veh		28.7			30.0			24.5			25.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	24.5	11.9	25.0	11.2	25.6	13.4	23.5
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	13.5	38.0	12.5	38.0	15.5	36.0	19.5	31.0
Max Q Clear Time (g_c+I1), s	6.6	10.2	7.8	18.1	6.4	11.2	8.9	10.7
Green Ext Time (p_c), s	0.4	4.2	0.2	1.4	0.2	5.6	0.4	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	26.7
HCM 7th LOS	C

Notes

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

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	133	17	366	138	28
Future Vol, veh/h	255	133	17	366	138	28
Conflicting Peds, #/hr	0	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	100	-	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	4	0	12	1	7
Mvmt Flow	277	145	18	398	150	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	277	0	712	281
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	435	-
Critical Hdwy	-	-	4.1	-	6.41	6.27
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.363
Pot Cap-1 Maneuver	-	-	1297	-	400	746
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1297	-	393	743
Mov Cap-2 Maneuver	-	-	-	-	393	-
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	643	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.35	18.07
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	393	743	-	-	80	-
HCM Lane V/C Ratio	0.382	0.041	-	-	0.014	-
HCM Control Delay (s/veh)	19.7	10.1	-	-	7.8	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.7	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	277	15	4	349	0	32	0	1	0	0	0
Future Vol, veh/h	0	277	15	4	349	0	32	0	1	0	0	0
Conflicting Peds, #/hr	0	0	1	1	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	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	19	0	75	12	0	0	0	0	0	0	0
Mvmt Flow	0	298	16	4	375	0	34	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	375	0	0	315	0	0	691	691	307	682	699	375
Stage 1	-	-	-	-	-	-	307	307	-	384	384	-
Stage 2	-	-	-	-	-	-	384	384	-	298	315	-
Critical Hdwy	4.1	-	-	4.85	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.875	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1194	-	-	927	-	-	362	370	738	367	366	676
Stage 1	-	-	-	-	-	-	707	665	-	643	615	-
Stage 2	-	-	-	-	-	-	643	615	-	715	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1194	-	-	926	-	-	360	368	737	364	364	676
Mov Cap-2 Maneuver	-	-	-	-	-	-	360	368	-	473	455	-
Stage 1	-	-	-	-	-	-	707	664	-	640	612	-
Stage 2	-	-	-	-	-	-	640	612	-	714	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.1	15.91	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	365	1194	-	-	926	-	-	-
HCM Lane V/C Ratio	0.097	-	-	-	0.005	-	-	-
HCM Control Delay (s/veh)	15.9	0	-	-	8.9	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	278	353	0	0	0
Future Vol, veh/h	0	278	353	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	19	12	2	2	2
Mvmt Flow	0	299	380	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	380	0	-	0	678	380
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1179	-	-	-	417	667
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1179	-	-	-	417	667
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1179	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	260	327	3	1	26
Future Vol, veh/h	18	260	327	3	1	26
Conflicting Peds, #/hr	2	0	0	2	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	20	13	33	0	4
Mvmt Flow	20	283	355	3	1	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	361	0	-	0	684	362
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	325	-
Critical Hdwy	4.16	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.254	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	1176	-	-	-	418	678
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1174	-	-	-	409	675
Mov Cap-2 Maneuver	-	-	-	-	513	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.53	0	10.64
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1174	-	-	-	667
HCM Lane V/C Ratio	0.017	-	-	-	0.044
HCM Control Delay (s/veh)	8.1	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

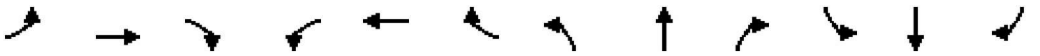
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	249	19	28	264	2	15	2	45	2	2	16
Future Vol, veh/h	3	249	19	28	264	2	15	2	45	2	2	16
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	50	-	-	400	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	67	18	32	4	13	0	13	50	0	0	100	50
Mvmt Flow	3	268	20	30	284	2	16	2	48	2	2	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	286	0	0	288	0	0	630	631	278	620	640	285
Stage 1	-	-	-	-	-	-	284	284	-	345	345	-
Stage 2	-	-	-	-	-	-	345	346	-	275	295	-
Critical Hdwy	4.77	-	-	4.14	-	-	7.23	7	6.2	7.1	7.5	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.23	6	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.23	6	-	6.1	6.5	-
Follow-up Hdwy	2.803	-	-	2.236	-	-	3.617	4.45	3.3	3.5	4.9	3.75
Pot Cap-1 Maneuver	981	-	-	1262	-	-	379	342	766	403	290	653
Stage 1	-	-	-	-	-	-	699	597	-	675	494	-
Stage 2	-	-	-	-	-	-	648	558	-	735	524	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	981	-	-	1262	-	-	357	333	766	365	282	653
Mov Cap-2 Maneuver	-	-	-	-	-	-	458	410	-	365	282	-
Stage 1	-	-	-	-	-	-	697	595	-	659	482	-
Stage 2	-	-	-	-	-	-	613	545	-	684	522	-

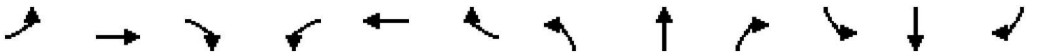
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.1	0.75	11.24	11.95
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	643	981	-	-	1262	-	-	540
HCM Lane V/C Ratio	0.104	0.003	-	-	0.024	-	-	0.04
HCM Control Delay (s/veh)	11.2	8.7	-	-	7.9	-	-	11.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	369	275	238	300	60	221	391	108	163	732	117
Future Volume (vph)	182	369	275	238	300	60	221	391	108	163	732	117
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1411	1614	1600		3101	3167	1319	1630	3129	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1411	1614	1600		3101	3167	1319	1630	3129	
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)	196	397	296	256	323	65	238	420	116	175	787	126
RTOR Reduction (vph)	0	0	181	0	6	0	0	0	84	0	11	0
Lane Group Flow (vph)	196	397	115	256	382	0	238	420	32	175	902	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	15.4	29.0	29.0	19.1	32.7		10.4	30.1	30.1	16.1	35.8	
Effective Green, g (s)	15.9	29.5	29.5	19.6	33.2		10.9	30.6	30.6	16.6	36.3	
Actuated g/C Ratio	0.14	0.26	0.26	0.17	0.30		0.10	0.27	0.27	0.15	0.32	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	222	437	370	281	473		300	862	359	240	1011	
v/s Ratio Prot	0.12	c0.24		c0.16	c0.24		0.08	0.13		c0.11	c0.29	
v/s Ratio Perm			0.08						0.02			
v/c Ratio	0.88	0.91	0.31	0.91	0.81		0.79	0.49	0.09	0.73	0.89	
Uniform Delay, d1	47.3	40.1	33.2	45.5	36.6		49.6	34.3	30.4	45.7	36.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.0	22.3	0.3	31.4	9.5		13.0	0.3	0.1	9.9	10.0	
Delay (s)	78.2	62.4	33.6	76.9	46.1		62.6	34.6	30.5	55.6	46.2	
Level of Service	E	E	C	E	D		E	C	C	E	D	
Approach Delay (s/veh)		56.3			58.4			42.6			47.7	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	112.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	369	275	238	300	60	221	391	108	163	732	117
Future Volume (veh/h)	182	369	275	238	300	60	221	391	108	163	732	117
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		0.99	1.00		0.97	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	196	397	0	256	323	60	238	420	62	175	787	115
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	224	430		280	388	72	302	968	402	211	944	138
Arrive On Green	0.14	0.26	0.00	0.17	0.29	0.28	0.10	0.30	0.30	0.13	0.33	0.33
Sat Flow, veh/h	1589	1682	1448	1628	1355	252	3132	3195	1327	1641	2819	412
Grp Volume(v), veh/h	196	397	0	256	0	383	238	420	62	175	450	452
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	0	1606	1566	1598	1327	1641	1611	1620
Q Serve(g_s), s	13.7	26.1	0.0	17.5	0.0	25.3	8.4	12.0	3.9	11.8	29.2	29.2
Cycle Q Clear(g_c), s	13.7	26.1	0.0	17.5	0.0	25.3	8.4	12.0	3.9	11.8	29.2	29.2
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	224	430		280	0	460	302	968	402	211	539	542
V/C Ratio(X)	0.87	0.92		0.91	0.00	0.83	0.79	0.43	0.15	0.83	0.83	0.83
Avail Cap(c_a), veh/h	224	460		280	0	489	304	968	402	304	604	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	41.1	0.0	46.1	0.0	37.9	50.1	31.7	28.9	48.2	34.8	34.9
Incr Delay (d2), s/veh	29.1	23.2	0.0	32.1	0.0	10.8	12.5	0.2	0.1	10.6	8.6	8.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	13.3	0.0	9.5	0.0	11.1	3.8	4.6	1.2	5.4	12.4	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.8	64.3	0.0	78.2	0.0	48.7	62.6	32.0	29.0	58.8	43.4	43.4
LnGrp LOS	E	E		E		D	E	C	C	E	D	D
Approach Vol, veh/h		593			639			720			1077	
Approach Delay, s/veh		68.4			60.5			41.8			45.9	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	42.0	20.0	36.5	18.6	38.3	23.5	33.0
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	10.5	42.0	15.5	34.0	20.5	32.0	19.0	30.5
Max Q Clear Time (g_c+I1), s	10.4	31.2	15.7	27.3	13.8	14.0	19.5	28.1
Green Ext Time (p_c), s	0.0	6.2	0.0	0.9	0.3	4.3	0.0	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	52.4
HCM 7th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	6.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	435	193	36	453	161	128
Future Vol, veh/h	435	193	36	453	161	128
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	100	-	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	0	0	8	0	2
Mvmt Flow	468	208	39	487	173	138

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	469	0	1033	470
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	565	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1103	-	260	594
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1102	-	247	593
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.62	32.35
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	247	593	-	-	133	-
HCM Lane V/C Ratio	0.701	0.232	-	-	0.035	-
HCM Control Delay (s/veh)	47.8	12.9	-	-	8.4	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	4.7	0.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	0	522	42	4	453	0	20	0	5	0	0	0
Future Vol, veh/h	0	522	42	4	453	0	20	0	5	0	0	0
Conflicting Peds, #/hr	2	0	3	3	0	2	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	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	0	0	8	0	0	0	20	0	0	0
Mvmt Flow	0	555	45	4	482	0	21	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	484	0	0	603	0	0	1071	1073	581	1048	1095	484
Stage 1	-	-	-	-	-	-	581	581	-	492	492	-
Stage 2	-	-	-	-	-	-	490	492	-	555	603	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.4	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1089	-	-	984	-	-	200	222	482	208	215	587
Stage 1	-	-	-	-	-	-	503	503	-	562	551	-
Stage 2	-	-	-	-	-	-	563	551	-	519	492	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1087	-	-	982	-	-	199	220	480	204	213	586
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	220	-	336	332	-
Stage 1	-	-	-	-	-	-	502	502	-	558	547	-
Stage 2	-	-	-	-	-	-	561	547	-	514	490	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.08	23.12	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	1087	-	-	982	-	-	-
HCM Lane V/C Ratio	0.118	-	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	23.1	0	-	-	8.7	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	533	452	0	0	0
Future Vol, veh/h	0	533	452	0	0	0
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	6	8	2	2	2
Mvmt Flow	0	573	486	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	488	0	-	0	1061	488
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	573	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1075	-	-	-	248	580
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	564	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1073	-	-	-	247	579
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1073	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	475	437	14	0	15
Future Vol, veh/h	57	475	437	14	0	15
Conflicting Peds, #/hr	3	0	0	3	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	7	8	0	0	0
Mvmt Flow	62	516	475	15	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	493	0	-	0	1129	489
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	643	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1060	-	-	-	228	583
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	527	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1057	-	-	-	213	580
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	526	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.92	0	11.39
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1057	-	-	-	580
HCM Lane V/C Ratio	0.059	-	-	-	0.028
HCM Control Delay (s/veh)	8.6	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

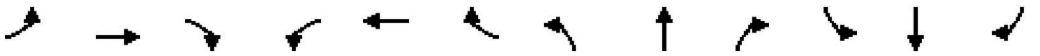
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	395	75	88	395	0	20	0	58	2	1	6
Future Vol, veh/h	5	395	75	88	395	0	20	0	58	2	1	6
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	50	-	-	400	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	20	7	3	0	9	0	5	0	3	0	0	0
Mvmt Flow	5	425	81	95	425	0	22	0	62	2	1	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	425	0	0	505	0	0	1090	1090	465	1049	1130	425
Stage 1	-	-	-	-	-	-	476	476	-	614	614	-
Stage 2	-	-	-	-	-	-	615	614	-	435	516	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.15	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.38	-	-	2.2	-	-	3.545	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1045	-	-	1070	-	-	190	217	595	207	205	634
Stage 1	-	-	-	-	-	-	564	560	-	483	486	-
Stage 2	-	-	-	-	-	-	474	486	-	603	538	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1045	-	-	1070	-	-	170	197	595	168	186	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	311	-	168	186	-
Stage 1	-	-	-	-	-	-	561	557	-	440	443	-
Stage 2	-	-	-	-	-	-	426	443	-	537	535	-

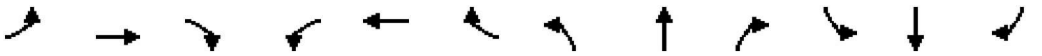
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.09	1.58	14.27	16.01
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	472	1045	-	-	1070	-	-	337
HCM Lane V/C Ratio	0.178	0.005	-	-	0.088	-	-	0.029
HCM Control Delay (s/veh)	14.3	8.5	-	-	8.7	-	-	16
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.3	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	219	84	168	291	118	215	470	105	93	318	92
Future Volume (vph)	125	219	84	168	291	118	215	470	105	93	318	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1523		2906	3107	1282	1409	2826	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1523		2906	3107	1282	1409	2826	
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)	132	231	88	177	306	124	226	495	111	98	335	97
RTOR Reduction (vph)	0	0	63	0	12	0	0	0	79	0	24	0
Lane Group Flow (vph)	132	231	25	177	418	0	226	495	32	98	408	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	11.6	27.1	27.1	15.4	30.9		11.7	27.4	27.4	9.6	25.3	
Effective Green, g (s)	12.1	27.6	27.6	15.9	31.4		12.2	27.9	27.9	10.1	25.8	
Actuated g/C Ratio	0.12	0.28	0.28	0.16	0.32		0.13	0.29	0.29	0.10	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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	194	438	354	253	490		363	889	366	145	747	
v/s Ratio Prot	0.08	0.15		c0.11	c0.27		c0.08	c0.16		0.07	0.14	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.68	0.53	0.07	0.70	0.85		0.62	0.56	0.09	0.68	0.55	
Uniform Delay, d1	40.9	29.5	25.6	38.5	30.9		40.5	29.6	25.5	42.1	30.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.6	0.9	0.1	7.6	13.3		2.9	0.6	0.1	10.8	0.6	
Delay (s)	49.5	30.3	25.6	46.1	44.2		43.3	30.2	25.5	52.9	31.5	
Level of Service	D	C	C	D	D		D	C	C	D	C	
Approach Delay (s/veh)		35.0			44.7			33.1			35.4	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	219	84	168	291	118	215	470	105	93	318	92
Future Volume (veh/h)	125	219	84	168	291	118	215	470	105	93	318	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	132	231	0	177	306	113	226	495	64	98	335	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	172	444		224	355	131	326	865	357	138	646	135
Arrive On Green	0.11	0.28	0.00	0.14	0.32	0.31	0.11	0.28	0.28	0.10	0.26	0.25
Sat Flow, veh/h	1589	1573	1286	1576	1122	415	2956	3143	1298	1433	2474	518
Grp Volume(v), veh/h	132	231	0	177	0	419	226	495	64	98	202	204
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	0	1537	1478	1572	1298	1433	1507	1485
Q Serve(g_s), s	6.3	9.7	0.0	8.5	0.0	20.1	5.8	10.6	3.0	5.2	9.0	9.2
Cycle Q Clear(g_c), s	6.3	9.7	0.0	8.5	0.0	20.1	5.8	10.6	3.0	5.2	9.0	9.2
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	172	444		224	0	486	326	865	357	138	393	388
V/C Ratio(X)	0.77	0.52		0.79	0.00	0.86	0.69	0.57	0.18	0.71	0.51	0.53
Avail Cap(c_a), veh/h	263	631		401	0	754	527	1461	603	292	739	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	23.7	0.0	32.5	0.0	25.3	33.6	24.5	21.7	34.4	24.8	24.9
Incr Delay (d2), s/veh	5.3	0.7	0.0	4.6	0.0	5.4	2.0	0.4	0.2	5.0	0.8	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	2.6	3.5	0.0	3.4	0.0	7.5	2.1	3.8	0.9	1.9	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.4	24.4	0.0	37.1	0.0	30.7	35.6	24.9	21.9	39.4	25.5	25.8
LnGrp LOS	D	C		D		C	D	C	C	D	C	C
Approach Vol, veh/h		363			596			785			504	
Approach Delay, s/veh		29.9			32.6			27.7			28.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	24.5	12.5	28.8	11.6	25.6	15.2	26.2
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	13.5	38.0	12.5	38.0	15.5	36.0	19.5	31.0
Max Q Clear Time (g_c+I1), s	7.8	11.2	8.3	22.1	7.2	12.6	10.5	11.7
Green Ext Time (p_c), s	0.4	4.3	0.1	1.6	0.2	5.8	0.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.5
HCM 7th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	281	134	17	443	139	28
Future Vol, veh/h	281	134	17	443	139	28
Conflicting Peds, #/hr	0	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	100	-	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	4	0	12	1	7
Mvmt Flow	305	146	18	482	151	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	305	0	824	309
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	518	-
Critical Hdwy	-	-	4.1	-	6.41	6.27
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.363
Pot Cap-1 Maneuver	-	-	1267	-	344	719
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1267	-	337	716
Mov Cap-2 Maneuver	-	-	-	-	337	-
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.29	21.73
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	716	-	-	67	-
HCM Lane V/C Ratio	0.448	0.042	-	-	0.015	-
HCM Control Delay (s/veh)	24	10.2	-	-	7.9	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	283	15	4	357	2	32	1	1	9	2	68
Future Vol, veh/h	20	283	15	4	357	2	32	1	1	9	2	68
Conflicting Peds, #/hr	0	0	1	1	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	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	19	0	75	12	0	0	0	0	0	0	0
Mvmt Flow	22	304	16	4	384	2	34	1	1	10	2	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	386	0	0	321	0	0	750	751	313	741	758	385
Stage 1	-	-	-	-	-	-	356	356	-	394	394	-
Stage 2	-	-	-	-	-	-	394	395	-	348	364	-
Critical Hdwy	4.1	-	-	4.85	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.875	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1183	-	-	921	-	-	330	342	732	334	339	667
Stage 1	-	-	-	-	-	-	665	632	-	635	609	-
Stage 2	-	-	-	-	-	-	635	608	-	672	627	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1183	-	-	920	-	-	284	333	731	324	329	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	333	-	441	428	-
Stage 1	-	-	-	-	-	-	650	618	-	632	606	-
Stage 2	-	-	-	-	-	-	561	605	-	655	613	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.51	0.1	19.15	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	291	112	-	-	920	-	-	622
HCM Lane V/C Ratio	0.126	0.018	-	-	0.005	-	-	0.137
HCM Control Delay (s/veh)	19.1	8.1	0	-	8.9	-	-	11.7
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	294	363	0	0	0
Future Vol, veh/h	0	294	363	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	19	12	2	2	2
Mvmt Flow	0	316	390	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	390	0	-	0	706	390
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1168	-	-	-	402	658
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1168	-	-	-	402	658
Mov Cap-2 Maneuver	-	-	-	-	507	-
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	739	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1168	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	275	337	3	1	26
Future Vol, veh/h	18	275	337	3	1	26
Conflicting Peds, #/hr	2	0	0	2	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	20	13	33	0	4
Mvmt Flow	20	299	366	3	1	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	372	0	-	0	711	373
Stage 1	-	-	-	-	370	-
Stage 2	-	-	-	-	341	-
Critical Hdwy	4.16	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.254	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	1165	-	-	-	403	669
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1163	-	-	-	394	666
Mov Cap-2 Maneuver	-	-	-	-	502	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.5	0	10.73
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1163	-	-	-	658
HCM Lane V/C Ratio	0.017	-	-	-	0.045
HCM Control Delay (s/veh)	8.1	-	-	-	10.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	260	23	28	271	2	16	2	45	2	2	16
Future Vol, veh/h	3	260	23	28	271	2	16	2	45	2	2	16
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	50	-	-	400	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	67	18	32	4	13	0	13	50	0	0	100	50
Mvmt Flow	3	280	25	30	291	2	17	2	48	2	2	17

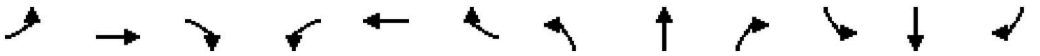
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	304	0	0	651	652	292	640	663	292
Stage 1	-	-	-	-	-	-	298	298	-	353	353	-
Stage 2	-	-	-	-	-	-	353	354	-	287	311	-
Critical Hdwy	4.77	-	-	4.14	-	-	7.23	7	6.2	7.1	7.5	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.23	6	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.23	6	-	6.1	6.5	-
Follow-up Hdwy	2.803	-	-	2.236	-	-	3.617	4.45	3.3	3.5	4.9	3.75
Pot Cap-1 Maneuver	974	-	-	1245	-	-	367	332	752	391	280	646
Stage 1	-	-	-	-	-	-	687	588	-	668	489	-
Stage 2	-	-	-	-	-	-	642	554	-	725	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	974	-	-	1245	-	-	345	322	752	354	272	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	449	402	-	354	272	-
Stage 1	-	-	-	-	-	-	685	586	-	652	478	-
Stage 2	-	-	-	-	-	-	607	540	-	673	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.09	0.74	11.43	12.08
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	627	974	-	-	1245	-	-	530
HCM Lane V/C Ratio	0.108	0.003	-	-	0.024	-	-	0.041
HCM Control Delay (s/veh)	11.4	8.7	-	-	8	-	-	12.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

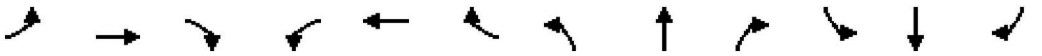
HCM Signalized Intersection Capacity Analysis
1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

10/06/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	400	309	254	321	71	244	406	127	182	759	120
Future Volume (vph)	186	400	309	254	321	71	244	406	127	182	759	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1410	1614	1598		3101	3167	1319	1630	3130	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1410	1614	1598		3101	3167	1319	1630	3130	
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)	200	430	332	273	345	76	262	437	137	196	816	129
RTOR Reduction (vph)	0	0	174	0	6	0	0	0	100	0	11	0
Lane Group Flow (vph)	200	430	158	273	415	0	262	437	37	196	934	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	15.5	30.6	30.6	19.0	34.1		10.5	30.6	30.6	17.3	37.4	
Effective Green, g (s)	16.0	31.1	31.1	19.5	34.6		11.0	31.1	31.1	17.8	37.9	
Actuated g/C Ratio	0.14	0.27	0.27	0.17	0.30		0.10	0.27	0.27	0.15	0.33	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	217	448	379	272	478		295	852	355	251	1027	
v/s Ratio Prot	0.13	c0.26		c0.17	c0.26		c0.08	0.14		c0.12	c0.30	
v/s Ratio Perm			0.11						0.03			
v/c Ratio	0.92	0.96	0.42	1.00	0.87		0.89	0.51	0.10	0.78	0.91	
Uniform Delay, d1	49.1	41.6	34.7	48.0	38.3		51.6	35.8	31.7	47.0	37.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	39.9	31.9	0.5	55.5	15.1		25.8	0.4	0.1	14.0	11.5	
Delay (s)	89.0	73.5	35.3	103.5	53.4		77.4	36.2	31.8	61.0	48.7	
Level of Service	F	E	D	F	D		E	D	C	E	D	
Approach Delay (s/veh)		63.5			73.1			48.4			50.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	115.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	400	309	254	321	71	244	406	127	182	759	120
Future Volume (veh/h)	186	400	309	254	321	71	244	406	127	182	759	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		0.99	1.00		0.97	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	200	430	0	273	345	71	262	437	83	196	816	118
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	218	446		272	393	81	295	928	385	230	950	137
Arrive On Green	0.14	0.27	0.00	0.17	0.30	0.29	0.09	0.29	0.29	0.14	0.34	0.33
Sat Flow, veh/h	1589	1682	1448	1628	1329	273	3132	3195	1327	1641	2823	408
Grp Volume(v), veh/h	200	430	0	273	0	416	262	437	83	196	465	469
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	0	1602	1566	1598	1327	1641	1611	1621
Q Serve(g_s), s	14.5	29.5	0.0	19.5	0.0	28.9	9.7	13.1	5.5	13.6	31.5	31.5
Cycle Q Clear(g_c), s	14.5	29.5	0.0	19.5	0.0	28.9	9.7	13.1	5.5	13.6	31.5	31.5
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	218	446		272	0	473	295	928	385	230	542	545
V/C Ratio(X)	0.92	0.96		1.00	0.00	0.88	0.89	0.47	0.22	0.85	0.86	0.86
Avail Cap(c_a), veh/h	218	446		272	0	473	295	928	385	295	586	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	42.3	0.0	48.6	0.0	39.2	52.3	34.1	31.4	49.0	36.2	36.2
Incr Delay (d2), s/veh	39.1	33.1	0.0	55.7	0.0	16.8	25.9	0.3	0.2	15.8	11.3	11.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	16.1	0.0	12.0	0.0	13.3	4.8	5.1	1.8	6.5	13.7	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	88.8	75.4	0.0	104.4	0.0	56.0	78.2	34.3	31.6	64.9	47.4	47.4
LnGrp LOS	F	E		F		E	E	C	C	E	D	D
Approach Vol, veh/h		630			689			782			1130	
Approach Delay, s/veh		79.7			75.2			48.7			50.5	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	43.3	20.0	38.5	20.4	37.9	23.5	35.0
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	10.5	42.0	15.5	34.0	20.5	32.0	19.0	30.5
Max Q Clear Time (g_c+I1), s	11.7	33.5	16.5	30.9	15.6	15.1	21.5	31.5
Green Ext Time (p_c), s	0.0	5.3	0.0	0.6	0.3	4.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	61.0
HCM 7th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	9.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	498	195	36	498	163	129
Future Vol, veh/h	498	195	36	498	163	129
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	100	-	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	0	0	8	0	2
Mvmt Flow	535	210	39	535	175	139

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	536	0	1149	537
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	613	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1042	-	221	544
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	544	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1041	-	209	543
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	516	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.58	47.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	209	543	-	-	121	-
HCM Lane V/C Ratio	0.837	0.256	-	-	0.037	-
HCM Control Delay (s/veh)	73.9	13.9	-	-	8.6	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	6.2	1	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	53	534	42	4	464	7	20	2	5	4	1	34
Future Vol, veh/h	53	534	42	4	464	7	20	2	5	4	1	34
Conflicting Peds, #/hr	2	0	3	3	0	2	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	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	0	0	8	0	0	0	20	0	0	0
Mvmt Flow	56	568	45	4	494	7	21	2	5	4	1	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	616	0	0	1209	1218	593	1190	1236	499
Stage 1	-	-	-	-	-	-	706	706	-	508	508	-
Stage 2	-	-	-	-	-	-	503	512	-	682	729	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.4	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1072	-	-	974	-	-	161	182	473	166	178	575
Stage 1	-	-	-	-	-	-	430	442	-	551	542	-
Stage 2	-	-	-	-	-	-	555	540	-	443	431	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1070	-	-	971	-	-	137	166	472	148	162	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	166	-	275	278	-
Stage 1	-	-	-	-	-	-	394	405	-	548	539	-
Stage 2	-	-	-	-	-	-	517	537	-	401	395	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.72	0.07	32.26	12.78
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	161	149	-	-	971	-	-	504
HCM Lane V/C Ratio	0.179	0.053	-	-	0.004	-	-	0.082
HCM Control Delay (s/veh)	32.3	8.6	0	-	8.7	-	-	12.8
HCM Lane LOS	D	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	549	470	0	0	0
Future Vol, veh/h	0	549	470	0	0	0
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	6	8	2	2	2
Mvmt Flow	0	590	505	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	507	0	-	0	1098	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	590	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1057	-	-	-	236	565
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1055	-	-	-	235	564
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1055	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	58	490	454	14	0	15
Future Vol, veh/h	58	490	454	14	0	15
Conflicting Peds, #/hr	3	0	0	3	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	7	8	0	0	0
Mvmt Flow	63	533	493	15	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	512	0	-	0	1166	507
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1043	-	-	-	216	570
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1040	-	-	-	202	566
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	515	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.92	0	11.55
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1040	-	-	-	566
HCM Lane V/C Ratio	0.061	-	-	-	0.029
HCM Control Delay (s/veh)	8.7	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

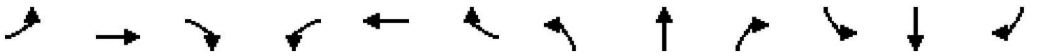
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	406	78	89	408	0	23	0	59	2	1	6
Future Vol, veh/h	5	406	78	89	408	0	23	0	59	2	1	6
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	50	-	-	400	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	20	7	3	0	9	0	5	0	3	0	0	0
Mvmt Flow	5	437	84	96	439	0	25	0	63	2	1	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	439	0	0	520	0	0	1120	1119	478	1077	1161	439
Stage 1	-	-	-	-	-	-	489	489	-	630	630	-
Stage 2	-	-	-	-	-	-	631	630	-	447	531	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.15	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.38	-	-	2.2	-	-	3.545	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1032	-	-	1056	-	-	181	208	585	198	197	622
Stage 1	-	-	-	-	-	-	555	553	-	473	478	-
Stage 2	-	-	-	-	-	-	464	478	-	594	529	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1032	-	-	1056	-	-	161	189	585	160	178	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	286	304	-	160	178	-
Stage 1	-	-	-	-	-	-	552	550	-	430	435	-
Stage 2	-	-	-	-	-	-	417	435	-	527	527	-

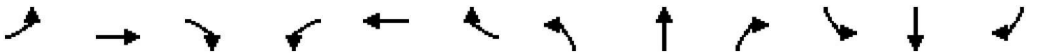
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.09	1.57	14.87	16.45
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	453	1032	-	-	1056	-	-	324
HCM Lane V/C Ratio	0.195	0.005	-	-	0.091	-	-	0.03
HCM Control Delay (s/veh)	14.9	8.5	-	-	8.7	-	-	16.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.3	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	234	82	190	301	140	215	457	129	108	309	92
Future Volume (vph)	122	234	82	190	301	140	215	457	129	108	309	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1516		2906	3107	1282	1409	2823	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1516		2906	3107	1282	1409	2823	
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)	128	246	86	200	317	147	226	481	136	114	325	97
RTOR Reduction (vph)	0	0	60	0	13	0	0	0	103	0	26	0
Lane Group Flow (vph)	128	246	26	200	451	0	226	481	33	114	396	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	11.5	29.2	29.2	16.7	34.4		11.8	23.7	23.7	12.4	24.3	
Effective Green, g (s)	12.0	29.7	29.7	17.2	34.9		12.3	24.2	24.2	12.9	24.8	
Actuated g/C Ratio	0.12	0.30	0.30	0.17	0.35		0.12	0.24	0.24	0.13	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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	188	460	371	267	529		357	751	310	181	700	
v/s Ratio Prot	0.08	0.16		c0.13	c0.30		0.08	c0.15		c0.08	0.14	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.68	0.53	0.07	0.75	0.85		0.63	0.64	0.11	0.63	0.57	
Uniform Delay, d1	42.2	29.4	25.2	39.3	30.2		41.7	34.0	29.5	41.3	32.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.9	0.9	0.1	10.4	12.4		3.2	1.7	0.1	5.8	0.9	
Delay (s)	51.1	30.3	25.3	49.7	42.6		44.9	35.7	29.6	47.1	33.8	
Level of Service	D	C	C	D	D		D	D	C	D	C	
Approach Delay (s/veh)		35.2			44.7			37.2			36.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	234	82	190	301	140	215	457	129	108	309	92
Future Volume (veh/h)	122	234	82	190	301	140	215	457	129	108	309	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	128	246	0	200	317	136	226	481	89	114	325	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	167	447		247	359	154	323	815	336	147	621	134
Arrive On Green	0.11	0.28	0.00	0.16	0.34	0.33	0.11	0.26	0.26	0.10	0.25	0.25
Sat Flow, veh/h	1589	1573	1286	1576	1070	459	2956	3143	1298	1433	2460	530
Grp Volume(v), veh/h	128	246	0	200	0	453	226	481	89	114	197	199
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	0	1529	1478	1572	1298	1433	1507	1483
Q Serve(g_s), s	6.4	10.8	0.0	9.9	0.0	22.7	6.0	10.9	4.4	6.3	9.1	9.4
Cycle Q Clear(g_c), s	6.4	10.8	0.0	9.9	0.0	22.7	6.0	10.9	4.4	6.3	9.1	9.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	167	447		247	0	514	323	815	336	147	381	374
V/C Ratio(X)	0.77	0.55		0.81	0.00	0.88	0.70	0.59	0.26	0.78	0.52	0.53
Avail Cap(c_a), veh/h	254	610		388	0	725	510	1414	584	282	715	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	24.6	0.0	33.0	0.0	25.5	34.9	26.3	23.9	35.5	26.1	26.3
Incr Delay (d2), s/veh	5.6	0.8	0.0	5.4	0.0	8.4	2.0	0.5	0.3	6.4	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.9	0.0	4.0	0.0	8.8	2.2	3.9	1.3	2.4	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.9	25.4	0.0	38.5	0.0	33.9	36.9	26.8	24.2	41.9	26.9	27.1
LnGrp LOS	D	C		D		C	D	C	C	D	C	C
Approach Vol, veh/h		374			653			796			510	
Approach Delay, s/veh		30.7			35.3			29.4			30.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	24.5	12.5	31.3	12.3	25.0	16.7	27.1
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	13.5	38.0	12.5	38.0	15.5	36.0	19.5	31.0
Max Q Clear Time (g_c+I1), s	8.0	11.4	8.4	24.7	8.3	12.9	11.9	12.8
Green Ext Time (p_c), s	0.4	4.2	0.1	1.7	0.2	5.7	0.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	31.5
HCM 7th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	335	134	17	497	139	28
Future Vol, veh/h	335	134	17	497	139	28
Conflicting Peds, #/hr	0	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	100	-	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	4	0	12	1	7
Mvmt Flow	364	146	18	540	151	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	364	0	941	368
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	577	-
Critical Hdwy	-	-	4.1	-	6.41	6.27
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.363
Pot Cap-1 Maneuver	-	-	1206	-	293	666
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1206	-	287	664
Mov Cap-2 Maneuver	-	-	-	-	287	-
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.27	27.34
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	287	664	-	-	60	-
HCM Lane V/C Ratio	0.527	0.046	-	-	0.015	-
HCM Control Delay (s/veh)	30.7	10.7	-	-	8	0
HCM Lane LOS	D	B	-	-	A	A
HCM 95th %tile Q(veh)	2.9	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	19	338	15	4	412	2	32	1	1	9	2	67
Future Vol, veh/h	19	338	15	4	412	2	32	1	1	9	2	67
Conflicting Peds, #/hr	0	0	1	1	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	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	19	0	75	12	0	0	0	0	0	0	0
Mvmt Flow	20	363	16	4	443	2	34	1	1	10	2	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	445	0	0	381	0	0	866	867	373	858	874	444
Stage 1	-	-	-	-	-	-	413	413	-	453	453	-
Stage 2	-	-	-	-	-	-	453	454	-	405	421	-
Critical Hdwy	4.1	-	-	4.85	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.875	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1126	-	-	870	-	-	276	293	678	279	290	618
Stage 1	-	-	-	-	-	-	620	597	-	590	574	-
Stage 2	-	-	-	-	-	-	590	573	-	627	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1126	-	-	869	-	-	235	285	677	270	282	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	285	-	396	390	-
Stage 1	-	-	-	-	-	-	605	583	-	588	571	-
Stage 2	-	-	-	-	-	-	517	570	-	610	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.42	0.09	22.58	12.37
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	241	91	-	-	869	-	-	572
HCM Lane V/C Ratio	0.152	0.018	-	-	0.005	-	-	0.147
HCM Control Delay (s/veh)	22.6	8.3	0	-	9.2	-	-	12.4
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	285	352	22	17	66
Future Vol, veh/h	64	285	352	22	17	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	19	12	2	2	2
Mvmt Flow	69	306	378	24	18	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	402	0	-	0	834	390
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	444	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1157	-	-	-	338	658
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1157	-	-	-	318	658
Mov Cap-2 Maneuver	-	-	-	-	439	-
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	646	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.52	0	12.08
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1157	-	-	-	597
HCM Lane V/C Ratio	0.06	-	-	-	0.149
HCM Control Delay (s/veh)	8.3	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	280	342	8	6	32
Future Vol, veh/h	21	280	342	8	6	32
Conflicting Peds, #/hr	2	0	0	2	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	20	13	33	0	4
Mvmt Flow	23	304	372	9	7	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	382	0	-	0	731	381
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	4.16	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.254	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	1154	-	-	-	392	662
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1152	-	-	-	383	659
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.57	0	11.16
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1152	-	-	-	625
HCM Lane V/C Ratio	0.02	-	-	-	0.066
HCM Control Delay (s/veh)	8.2	-	-	-	11.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

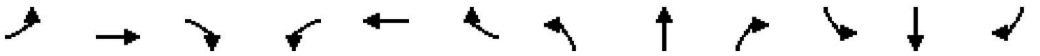
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	266	27	28	277	2	20	2	45	2	2	16
Future Vol, veh/h	3	266	27	28	277	2	20	2	45	2	2	16
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	50	-	-	400	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	67	18	32	4	13	0	13	50	0	0	100	50
Mvmt Flow	3	286	29	30	298	2	22	2	48	2	2	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	300	0	0	315	0	0	666	667	301	653	681	299
Stage 1	-	-	-	-	-	-	307	307	-	359	359	-
Stage 2	-	-	-	-	-	-	359	360	-	294	322	-
Critical Hdwy	4.77	-	-	4.14	-	-	7.23	7	6.2	7.1	7.5	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.23	6	-	6.1	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.23	6	-	6.1	6.5	-
Follow-up Hdwy	2.803	-	-	2.236	-	-	3.617	4.45	3.3	3.5	4.9	3.75
Pot Cap-1 Maneuver	968	-	-	1234	-	-	358	325	744	383	273	641
Stage 1	-	-	-	-	-	-	680	583	-	663	486	-
Stage 2	-	-	-	-	-	-	637	550	-	719	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	968	-	-	1234	-	-	336	316	744	347	265	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	397	-	347	265	-
Stage 1	-	-	-	-	-	-	678	581	-	647	474	-
Stage 2	-	-	-	-	-	-	602	537	-	667	506	-

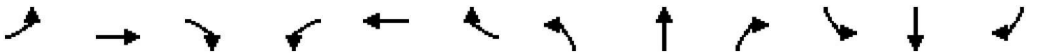
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.09	0.73	11.75	12.19
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	605	968	-	-	1234	-	-	522
HCM Lane V/C Ratio	0.119	0.003	-	-	0.024	-	-	0.041
HCM Control Delay (s/veh)	11.8	8.7	-	-	8	-	-	12.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	407	306	268	324	79	244	402	138	191	751	120
Future Volume (vph)	184	407	306	268	324	79	244	402	138	191	751	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1411	1614	1594		3101	3167	1319	1630	3129	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1411	1614	1594		3101	3167	1319	1630	3129	
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)	198	438	329	288	348	85	262	432	148	205	808	129
RTOR Reduction (vph)	0	0	172	0	7	0	0	0	109	0	11	0
Lane Group Flow (vph)	198	438	157	288	426	0	262	432	39	205	926	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	15.5	30.6	30.6	19.0	34.1		10.5	29.9	29.9	17.7	37.1	
Effective Green, g (s)	16.0	31.1	31.1	19.5	34.6		11.0	30.4	30.4	18.2	37.6	
Actuated g/C Ratio	0.14	0.27	0.27	0.17	0.30		0.10	0.26	0.26	0.16	0.33	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	217	450	380	273	478		296	835	348	257	1021	
v/s Ratio Prot	0.13	c0.26		c0.18	c0.27		0.08	0.14		c0.13	c0.30	
v/s Ratio Perm			0.11						0.03			
v/c Ratio	0.91	0.97	0.41	1.05	0.89		0.89	0.52	0.11	0.80	0.91	
Uniform Delay, d1	48.9	41.6	34.6	47.9	38.5		51.5	36.1	32.2	46.7	37.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	37.8	35.3	0.5	69.7	18.4		25.3	0.4	0.1	15.2	11.4	
Delay (s)	86.7	76.9	35.1	117.5	56.9		76.8	36.6	32.3	62.0	48.5	
Level of Service	F	E	D	F	E		E	D	C	E	D	
Approach Delay (s/veh)		64.7			81.1			48.3			50.9	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	115.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	407	306	268	324	79	244	402	138	191	751	120
Future Volume (veh/h)	184	407	306	268	324	79	244	402	138	191	751	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		0.99	1.00		0.97	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	198	438	0	288	348	85	262	432	94	205	808	118
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	218	447		272	379	93	296	907	377	239	945	138
Arrive On Green	0.14	0.27	0.00	0.17	0.30	0.29	0.09	0.28	0.28	0.15	0.34	0.33
Sat Flow, veh/h	1589	1682	1448	1628	1282	313	3132	3195	1326	1641	2819	412
Grp Volume(v), veh/h	198	438	0	288	0	433	262	432	94	205	462	464
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	0	1595	1566	1598	1326	1641	1611	1620
Q Serve(g_s), s	14.3	30.1	0.0	19.5	0.0	30.6	9.6	13.0	6.4	14.2	31.1	31.1
Cycle Q Clear(g_c), s	14.3	30.1	0.0	19.5	0.0	30.6	9.6	13.0	6.4	14.2	31.1	31.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	218	447		272	0	472	296	907	377	239	540	543
V/C Ratio(X)	0.91	0.98		1.06	0.00	0.92	0.89	0.48	0.25	0.86	0.86	0.86
Avail Cap(c_a), veh/h	218	447		272	0	472	296	907	377	296	587	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	42.5	0.0	48.5	0.0	39.7	52.2	34.6	32.2	48.6	36.1	36.2
Incr Delay (d2), s/veh	36.6	37.0	0.0	70.5	0.0	22.7	25.6	0.3	0.3	17.4	10.8	10.8
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	7.8	16.8	0.0	13.1	0.0	14.7	4.8	5.1	2.1	6.9	13.5	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	86.1	79.4	0.0	119.1	0.0	62.4	77.8	34.9	32.4	66.0	46.9	46.9
LnGrp LOS	F	E		F		E	E	C	C	E	D	D
Approach Vol, veh/h		636			721			788			1131	
Approach Delay, s/veh		81.5			85.0			48.8			50.4	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	43.1	20.0	38.5	21.0	37.1	23.5	35.0
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	10.5	42.0	15.5	34.0	20.5	32.0	19.0	30.5
Max Q Clear Time (g_c+I1), s	11.6	33.1	16.3	32.6	16.2	15.0	21.5	32.1
Green Ext Time (p_c), s	0.0	5.4	0.0	0.3	0.3	4.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	63.7
HCM 7th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	10.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	525	195	36	523	163	129
Future Vol, veh/h	525	195	36	523	163	129
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	100	-	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	0	0	8	0	2
Mvmt Flow	565	210	39	562	175	139

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	566	0	1205	567
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	640	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1016	-	205	523
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	529	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1015	-	193	522
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	500	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.56	57.83
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	193	522	-	-	116	-
HCM Lane V/C Ratio	0.906	0.266	-	-	0.038	-
HCM Control Delay (s/veh)	92.2	14.4	-	-	8.7	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	7.1	1.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	45	569	42	4	493	6	20	2	5	4	1	30
Future Vol, veh/h	45	569	42	4	493	6	20	2	5	4	1	30
Conflicting Peds, #/hr	2	0	3	3	0	2	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	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	0	0	8	0	0	0	20	0	0	0
Mvmt Flow	48	605	45	4	524	6	21	2	5	4	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	533	0	0	653	0	0	1260	1268	631	1240	1287	530
Stage 1	-	-	-	-	-	-	726	726	-	538	538	-
Stage 2	-	-	-	-	-	-	534	541	-	702	749	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.4	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1045	-	-	943	-	-	149	170	450	153	166	553
Stage 1	-	-	-	-	-	-	419	432	-	531	525	-
Stage 2	-	-	-	-	-	-	534	524	-	432	422	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1043	-	-	941	-	-	129	156	449	138	152	552
Mov Cap-2 Maneuver	-	-	-	-	-	-	129	156	-	265	270	-
Stage 1	-	-	-	-	-	-	387	400	-	527	522	-
Stage 2	-	-	-	-	-	-	500	520	-	394	391	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.59	0.07	34.51	13.15
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	150	122	-	-	941	-	-	479
HCM Lane V/C Ratio	0.191	0.046	-	-	0.005	-	-	0.078
HCM Control Delay (s/veh)	34.5	8.6	0	-	8.8	-	-	13.2
HCM Lane LOS	D	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	535	462	10	11	36
Future Vol, veh/h	49	535	462	10	11	36
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	6	8	2	2	2
Mvmt Flow	53	575	497	11	12	39

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	510	0	-	0	1185	504
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	681	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1056	-	-	-	209	568
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1054	-	-	-	198	567
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	502	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.72	0	13.24
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1054	-	-	-	487
HCM Lane V/C Ratio	0.05	-	-	-	0.104
HCM Control Delay (s/veh)	8.6	-	-	-	13.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	492	456	16	3	15
Future Vol, veh/h	53	492	456	16	3	15
Conflicting Peds, #/hr	3	0	0	3	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	7	8	0	0	0
Mvmt Flow	58	535	496	17	3	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	516	0	-	0	1160	510
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	653	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1040	-	-	-	218	567
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1037	-	-	-	205	564
Mov Cap-2 Maneuver	-	-	-	-	342	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.84	0	12.36
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1037	-	-	-	509
HCM Lane V/C Ratio	0.056	-	-	-	0.038
HCM Control Delay (s/veh)	8.7	-	-	-	12.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

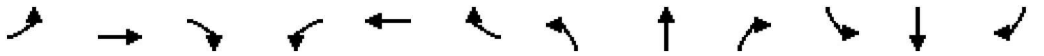
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	409	80	89	410	0	25	0	59	2	1	6
Future Vol, veh/h	5	409	80	89	410	0	25	0	59	2	1	6
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	50	-	-	400	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	20	7	3	0	9	0	5	0	3	0	0	0
Mvmt Flow	5	440	86	96	441	0	27	0	63	2	1	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	441	0	0	526	0	0	1126	1126	483	1083	1169	441
Stage 1	-	-	-	-	-	-	494	494	-	632	632	-
Stage 2	-	-	-	-	-	-	633	632	-	451	537	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.15	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.38	-	-	2.2	-	-	3.545	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1030	-	-	1051	-	-	179	207	582	197	195	621
Stage 1	-	-	-	-	-	-	552	550	-	472	477	-
Stage 2	-	-	-	-	-	-	463	477	-	592	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1030	-	-	1051	-	-	160	187	582	158	176	621
Mov Cap-2 Maneuver	-	-	-	-	-	-	285	302	-	158	176	-
Stage 1	-	-	-	-	-	-	549	547	-	429	433	-
Stage 2	-	-	-	-	-	-	415	433	-	525	524	-

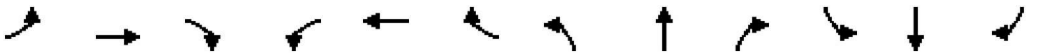
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.09	1.56	15.17	16.54
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	444	1030	-	-	1051	-	-	322
HCM Lane V/C Ratio	0.203	0.005	-	-	0.091	-	-	0.03
HCM Control Delay (s/veh)	15.2	8.5	-	-	8.8	-	-	16.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.3	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	219	84	168	291	118	215	470	105	93	318	92
Future Volume (vph)	125	219	84	168	291	118	215	470	105	93	318	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1523		2906	3107	1282	2733	2826	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1523		2906	3107	1282	2733	2826	
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)	132	231	88	177	306	124	226	495	111	98	335	97
RTOR Reduction (vph)	0	0	63	0	14	0	0	0	76	0	21	0
Lane Group Flow (vph)	132	231	25	177	416	0	226	495	35	98	411	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	12.5	27.3	27.3	15.9	30.7		11.6	30.1	30.1	6.4	24.9	
Effective Green, g (s)	13.0	27.8	27.8	16.4	31.2		12.1	30.6	30.6	6.9	25.4	
Actuated g/C Ratio	0.13	0.28	0.28	0.17	0.32		0.12	0.31	0.31	0.07	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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	208	440	356	260	486		359	973	401	193	734	
v/s Ratio Prot	0.08	0.15		c0.11	c0.27		c0.08	0.16		0.04	c0.15	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.63	0.53	0.07	0.68	0.86		0.63	0.51	0.09	0.51	0.56	
Uniform Delay, d1	40.1	29.4	25.5	38.2	31.2		40.7	27.4	23.7	43.8	31.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.4	0.9	0.1	6.6	13.7		3.0	0.3	0.1	1.5	0.7	
Delay (s)	45.5	30.3	25.6	44.7	44.9		43.6	27.7	23.8	45.3	32.0	
Level of Service	D	C	C	D	D		D	C	C	D	C	
Approach Delay (s/veh)		33.8			44.8			31.5			34.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	219	84	168	291	118	215	470	105	93	318	92
Future Volume (veh/h)	125	219	84	168	291	118	215	470	105	93	318	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	132	231	0	177	306	113	226	495	64	98	335	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	173	446		226	357	132	326	862	356	267	643	135
Arrive On Green	0.11	0.28	0.00	0.14	0.32	0.31	0.11	0.27	0.27	0.10	0.26	0.25
Sat Flow, veh/h	1589	1573	1286	1576	1122	415	2956	3143	1298	2779	2474	518
Grp Volume(v), veh/h	132	231	0	177	0	419	226	495	64	98	202	204
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	0	1537	1478	1572	1298	1390	1507	1485
Q Serve(g_s), s	6.4	9.7	0.0	8.5	0.0	20.2	5.8	10.7	3.0	2.6	9.1	9.3
Cycle Q Clear(g_c), s	6.4	9.7	0.0	8.5	0.0	20.2	5.8	10.7	3.0	2.6	9.1	9.3
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	173	446		226	0	488	326	862	356	267	392	386
V/C Ratio(X)	0.76	0.52		0.78	0.00	0.86	0.69	0.57	0.18	0.37	0.52	0.53
Avail Cap(c_a), veh/h	322	758		499	0	916	525	1275	527	317	516	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	23.7	0.0	32.6	0.0	25.3	33.8	24.7	21.8	33.4	25.0	25.1
Incr Delay (d2), s/veh	5.1	0.7	0.0	4.4	0.0	3.4	2.0	0.5	0.2	0.6	0.8	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	2.6	3.5	0.0	3.4	0.0	7.3	2.1	3.8	0.9	0.9	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.2	24.4	0.0	37.0	0.0	28.7	35.8	25.1	22.0	34.0	25.7	25.9
LnGrp LOS	D	C		D		C	D	C	C	C	C	C
Approach Vol, veh/h		363			596			785			504	
Approach Delay, s/veh		29.8			31.1			27.9			27.4	
Approach LOS		C			C			C			C	

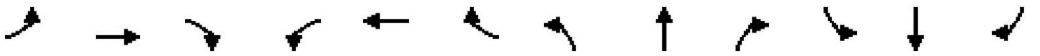
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	24.5	12.6	29.1	11.6	25.6	15.3	26.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	26.5	15.5	46.5	8.5	31.5	24.5	37.5
Max Q Clear Time (g_c+I1), s	7.8	11.3	8.4	22.2	4.6	12.7	10.5	11.7
Green Ext Time (p_c), s	0.4	3.4	0.2	1.8	0.1	5.3	0.5	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.0
HCM 7th LOS	C

Notes

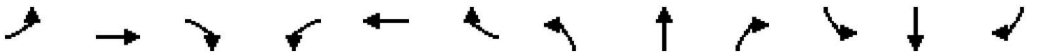
User approved pedestrian interval to be less than phase max green.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	219	84	168	291	118	215	470	105	93	318	92
Future Volume (vph)	125	219	84	168	291	118	215	470	105	93	318	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1591	1356	2906	3107	1282	1409	2827	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1591	1356	2906	3107	1282	1409	2827	
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)	132	231	88	177	306	124	226	495	111	98	335	97
RTOR Reduction (vph)	0	0	68	0	0	93	0	0	77	0	24	0
Lane Group Flow (vph)	132	231	20	177	306	31	226	495	34	98	408	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	11.8	19.3	19.3	14.7	22.2	22.2	11.4	26.9	26.9	9.4	24.9	
Effective Green, g (s)	12.3	19.8	19.8	15.2	22.7	22.2	11.9	27.4	27.4	9.9	25.4	
Actuated g/C Ratio	0.14	0.22	0.22	0.17	0.26	0.25	0.13	0.31	0.31	0.11	0.29	
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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	218	347	280	267	409	340	391	964	397	157	813	
v/s Ratio Prot	0.08	0.15		c0.11	c0.19		c0.08	c0.16		0.07	0.14	
v/s Ratio Perm			0.02			0.02			0.03			
v/c Ratio	0.61	0.67	0.07	0.66	0.75	0.09	0.58	0.51	0.09	0.62	0.50	
Uniform Delay, d1	35.7	31.2	27.0	34.2	30.2	25.3	35.8	25.0	21.6	37.4	26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	4.3	0.1	5.5	6.9	0.1	1.7	0.3	0.1	6.5	0.4	
Delay (s)	39.7	35.5	27.1	39.6	37.1	25.4	37.5	25.3	21.7	44.0	26.5	
Level of Service	D	D	C	D	D	C	D	C	C	D	C	
Approach Delay (s/veh)		35.1			35.5			28.2			29.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



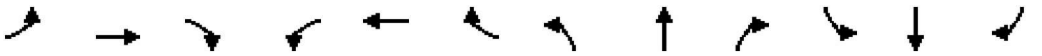
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	219	84	168	291	118	215	470	105	93	318	92
Future Volume (veh/h)	125	219	84	168	291	118	215	470	105	93	318	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	132	231	0	177	306	71	226	495	64	98	335	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	179	338		228	399	332	354	967	399	149	723	151
Arrive On Green	0.11	0.21	0.00	0.14	0.25	0.24	0.12	0.31	0.31	0.10	0.29	0.29
Sat Flow, veh/h	1589	1573	1286	1576	1614	1384	2956	3143	1298	1433	2474	518
Grp Volume(v), veh/h	132	231	0	177	306	71	226	495	64	98	202	204
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	1614	1384	1478	1572	1298	1433	1507	1485
Q Serve(g_s), s	5.6	9.5	0.0	7.6	12.4	2.9	5.1	9.1	2.5	4.6	7.7	7.9
Cycle Q Clear(g_c), s	5.6	9.5	0.0	7.6	12.4	2.9	5.1	9.1	2.5	4.6	7.7	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	179	338		228	399	332	354	967	399	149	440	434
V/C Ratio(X)	0.74	0.68		0.78	0.77	0.21	0.64	0.51	0.16	0.66	0.46	0.47
Avail Cap(c_a), veh/h	317	717		427	851	720	590	1613	666	347	838	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	25.3	0.0	28.9	24.5	21.3	29.4	19.9	17.7	30.2	20.3	20.4
Incr Delay (d2), s/veh	4.4	1.8	0.0	4.2	2.3	0.2	1.4	0.3	0.1	3.6	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.5	0.0	3.0	4.6	0.9	1.8	3.1	0.7	1.7	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.5	27.2	0.0	33.1	26.8	21.6	30.8	20.3	17.8	33.8	20.8	21.0
LnGrp LOS	C	C		C	C	C	C	C	B	C	C	C
Approach Vol, veh/h		363			554			785			504	
Approach Delay, s/veh		29.8			28.2			23.1			23.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	24.5	11.9	21.3	11.3	25.6	14.2	19.1
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	13.5	38.5	13.5	36.5	16.5	35.5	18.5	31.5
Max Q Clear Time (g_c+I1), s	7.1	9.9	7.6	14.4	6.6	11.1	9.6	11.5
Green Ext Time (p_c), s	0.5	4.4	0.2	1.3	0.2	5.9	0.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	25.6
HCM 7th LOS	C

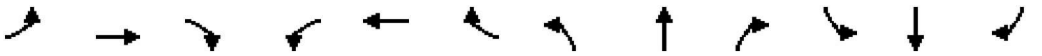
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	400	309	254	321	71	244	406	127	182	759	120
Future Volume (vph)	186	400	309	254	321	71	244	406	127	182	759	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1410	1614	1598		3101	3167	1332	3162	3130	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1410	1614	1598		3101	3167	1332	3162	3130	
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)	200	430	332	273	345	76	262	437	137	196	816	129
RTOR Reduction (vph)	0	0	182	0	7	0	0	0	96	0	10	0
Lane Group Flow (vph)	200	430	150	273	414	0	262	437	41	196	935	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	16.1	31.5	31.5	21.5	36.9		10.5	34.9	34.9	11.6	36.0	
Effective Green, g (s)	16.6	32.0	32.0	22.0	37.4		11.0	35.4	35.4	12.1	36.5	
Actuated g/C Ratio	0.14	0.27	0.27	0.19	0.32		0.09	0.30	0.30	0.10	0.31	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	221	453	384	302	508		290	954	401	325	972	
v/s Ratio Prot	0.13	c0.26		c0.17	0.26		c0.08	0.14		0.06	c0.30	
v/s Ratio Perm			0.11						0.03			
v/c Ratio	0.90	0.95	0.39	0.90	0.82		0.90	0.46	0.10	0.60	0.96	
Uniform Delay, d1	49.7	42.0	34.8	46.7	36.9		52.7	33.3	29.6	50.4	39.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	35.6	29.4	0.5	28.4	9.5		29.2	0.3	0.1	2.7	20.1	
Delay (s)	85.2	71.3	35.3	75.1	46.4		81.9	33.5	29.7	53.1	59.9	
Level of Service	F	E	D	E	D		F	C	C	D	E	
Approach Delay (s/veh)		61.8			57.7			48.1			58.7	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	400	309	254	321	71	244	406	127	182	759	120
Future Volume (veh/h)	186	400	309	254	321	71	244	406	127	182	759	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		0.99	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	200	430	0	273	345	76	262	437	83	196	816	118
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	229	459		303	413	91	293	1026	431	267	879	127
Arrive On Green	0.14	0.27	0.00	0.19	0.31	0.31	0.09	0.32	0.32	0.08	0.31	0.31
Sat Flow, veh/h	1589	1682	1448	1628	1311	289	3132	3195	1344	3183	2823	408
Grp Volume(v), veh/h	200	430	0	273	0	421	262	437	83	196	465	469
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	0	1599	1566	1598	1344	1591	1611	1621
Q Serve(g_s), s	14.5	29.4	0.0	19.3	0.0	28.8	9.7	12.7	5.3	7.1	32.9	33.0
Cycle Q Clear(g_c), s	14.5	29.4	0.0	19.3	0.0	28.8	9.7	12.7	5.3	7.1	32.9	33.0
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	229	459		303	0	504	293	1026	431	267	501	505
V/C Ratio(X)	0.87	0.94		0.90	0.00	0.84	0.89	0.43	0.19	0.74	0.93	0.93
Avail Cap(c_a), veh/h	230	472		318	0	530	293	1026	431	379	506	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	41.8	0.0	46.8	0.0	37.5	52.8	31.4	28.9	52.6	39.3	39.3
Incr Delay (d2), s/veh	28.2	25.9	0.0	25.9	0.0	10.4	27.3	0.2	0.2	3.5	23.3	23.3
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	7.5	15.2	0.0	9.9	0.0	12.5	4.9	4.9	1.7	2.9	16.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.5	67.7	0.0	72.7	0.0	47.9	80.0	31.6	29.1	56.1	62.6	62.6
LnGrp LOS	E	E		E		D	F	C	C	E	E	E
Approach Vol, veh/h		630			694			782			1130	
Approach Delay, s/veh		70.8			57.7			47.6			61.5	
Approach LOS		E			E			D			E	

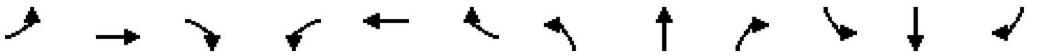
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	40.6	21.0	41.1	13.9	41.8	25.9	36.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	36.5	16.5	38.5	13.5	33.5	22.5	32.5
Max Q Clear Time (g_c+I1), s	11.7	35.0	16.5	30.8	9.1	14.7	21.3	31.4
Green Ext Time (p_c), s	0.0	1.1	0.0	1.1	0.3	4.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	59.1
HCM 7th LOS	E

Notes

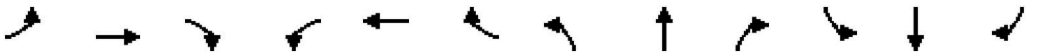
User approved pedestrian interval to be less than phase max green.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	400	309	254	321	71	244	406	127	182	759	120
Future Volume (vph)	186	400	309	254	321	71	244	406	127	182	759	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1410	1614	1636	1422	3101	3167	1318	1630	3130	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1410	1614	1636	1422	3101	3167	1318	1630	3130	
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)	200	430	332	273	345	76	262	437	137	196	816	129
RTOR Reduction (vph)	0	0	184	0	0	53	0	0	102	0	10	0
Lane Group Flow (vph)	200	430	148	273	345	23	262	437	35	196	935	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	17.6	31.5	31.5	21.5	35.4	35.4	10.5	29.8	29.8	17.3	36.6	
Effective Green, g (s)	18.1	32.0	32.0	22.0	35.9	35.4	11.0	30.3	30.3	17.8	37.1	
Actuated g/C Ratio	0.15	0.27	0.27	0.19	0.30	0.30	0.09	0.26	0.26	0.15	0.31	
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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	240	451	382	300	497	426	288	812	338	245	983	
v/s Ratio Prot	0.13	c0.26		c0.17	c0.21		c0.08	0.14		c0.12	c0.30	
v/s Ratio Perm			0.10			0.02			0.03			
v/c Ratio	0.83	0.95	0.39	0.91	0.69	0.05	0.91	0.54	0.10	0.80	0.95	
Uniform Delay, d1	48.5	42.3	35.1	47.1	36.3	29.4	53.1	37.9	33.5	48.4	39.6	
Progression Factor	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	20.9	30.6	0.5	29.9	3.9	0.0	30.3	0.5	0.1	16.4	18.0	
Delay (s)	69.5	72.9	35.5	77.0	40.1	29.5	83.4	38.4	33.6	64.8	57.6	
Level of Service	E	E	D	E	D	C	F	D	C	E	E	
Approach Delay (s/veh)		59.3			53.4			51.7			58.8	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	400	309	254	321	71	244	406	127	182	759	120
Future Volume (veh/h)	186	400	309	254	321	71	244	406	127	182	759	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		0.99	1.00		0.97	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	200	430	0	273	345	38	262	437	83	196	816	118
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	232	459		303	519	444	293	847	351	229	879	127
Arrive On Green	0.15	0.27	0.00	0.19	0.31	0.31	0.09	0.27	0.27	0.14	0.31	0.31
Sat Flow, veh/h	1589	1682	1448	1628	1654	1436	3132	3195	1325	1641	2823	408
Grp Volume(v), veh/h	200	430	0	273	345	38	262	437	83	196	465	469
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	1654	1436	1566	1598	1325	1641	1611	1621
Q Serve(g_s), s	14.5	29.4	0.0	19.3	21.3	2.2	9.7	13.7	5.8	13.7	32.9	33.0
Cycle Q Clear(g_c), s	14.5	29.4	0.0	19.3	21.3	2.2	9.7	13.7	5.8	13.7	32.9	33.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	232	459		303	519	444	293	847	351	229	501	505
V/C Ratio(X)	0.86	0.94		0.90	0.67	0.09	0.89	0.52	0.24	0.86	0.93	0.93
Avail Cap(c_a), veh/h	270	472		318	519	444	293	847	351	279	506	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	41.8	0.0	46.8	35.0	28.8	52.8	36.8	33.9	49.5	39.3	39.3
Incr Delay (d2), s/veh	20.8	25.9	0.0	25.9	3.0	0.1	27.3	0.4	0.3	18.2	23.3	23.3
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	7.0	15.2	0.0	9.9	8.9	0.8	4.9	5.3	1.9	6.7	16.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.9	67.7	0.0	72.7	38.0	28.9	80.0	37.2	34.2	67.6	62.6	62.6
LnGrp LOS	E	E		E	D	C	F	D	C	E	E	E
Approach Vol, veh/h		630			656			782			1130	
Approach Delay, s/veh		68.4			51.9			51.3			63.5	
Approach LOS		E			D			D			E	

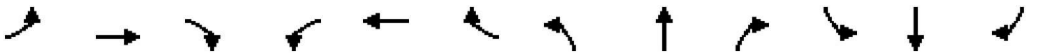
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	40.6	21.2	40.9	20.4	35.2	25.9	36.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	36.5	19.5	35.5	19.5	27.5	22.5	32.5
Max Q Clear Time (g_c+I1), s	11.7	35.0	16.5	23.3	15.7	15.7	21.3	31.4
Green Ext Time (p_c), s	0.0	1.1	0.2	1.2	0.2	3.6	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	59.1
HCM 7th LOS	E

Notes

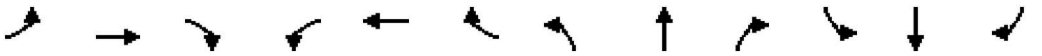
User approved pedestrian interval to be less than phase max green.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	234	82	190	301	140	215	457	129	108	309	92
Future Volume (vph)	122	234	82	190	301	140	215	457	129	108	309	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1516		2906	3107	1282	2733	2823	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1516		2906	3107	1282	2733	2823	
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)	128	246	86	200	317	147	226	481	136	114	325	97
RTOR Reduction (vph)	0	0	61	0	15	0	0	0	98	0	23	0
Lane Group Flow (vph)	128	246	25	200	449	0	226	481	38	114	399	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	12.4	28.2	28.2	17.2	33.0		11.7	26.8	26.8	8.6	23.7	
Effective Green, g (s)	12.9	28.7	28.7	17.7	33.5		12.2	27.3	27.3	9.1	24.2	
Actuated g/C Ratio	0.13	0.29	0.29	0.18	0.34		0.12	0.28	0.28	0.09	0.24	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	204	449	363	278	514		358	858	354	251	691	
v/s Ratio Prot	0.08	0.16		c0.13	c0.30		c0.08	c0.15		0.04	0.14	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.63	0.55	0.07	0.72	0.87		0.63	0.56	0.11	0.45	0.58	
Uniform Delay, d1	40.7	29.6	25.4	38.2	30.7		41.2	30.6	26.7	42.5	32.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.1	1.1	0.1	8.1	15.0		3.2	0.7	0.1	1.0	1.0	
Delay (s)	45.8	30.7	25.4	46.3	45.7		44.3	31.3	26.8	43.4	33.8	
Level of Service	D	C	C	D	D		D	C	C	D	C	
Approach Delay (s/veh)		33.9			45.8			34.1			35.8	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	234	82	190	301	140	215	457	129	108	309	92
Future Volume (veh/h)	122	234	82	190	301	140	215	457	129	108	309	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	128	246	0	200	317	136	226	481	89	114	325	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	168	449		249	362	155	322	828	342	269	618	133
Arrive On Green	0.11	0.29	0.00	0.16	0.34	0.33	0.11	0.26	0.26	0.10	0.25	0.25
Sat Flow, veh/h	1589	1573	1286	1576	1070	459	2956	3143	1298	2779	2460	530
Grp Volume(v), veh/h	128	246	0	200	0	453	226	481	89	114	197	199
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	0	1529	1478	1572	1298	1390	1507	1483
Q Serve(g_s), s	6.4	10.8	0.0	10.0	0.0	22.8	6.0	10.9	4.4	3.2	9.2	9.5
Cycle Q Clear(g_c), s	6.4	10.8	0.0	10.0	0.0	22.8	6.0	10.9	4.4	3.2	9.2	9.5
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	168	449		249	0	517	322	828	342	269	378	372
V/C Ratio(X)	0.76	0.55		0.80	0.00	0.88	0.70	0.58	0.26	0.42	0.52	0.53
Avail Cap(c_a), veh/h	311	732		483	0	880	507	1232	509	306	499	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	24.7	0.0	33.1	0.0	25.5	35.1	26.1	23.8	34.7	26.3	26.5
Incr Delay (d2), s/veh	5.2	0.8	0.0	4.5	0.0	4.3	2.1	0.5	0.3	0.8	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.9	0.0	4.0	0.0	8.3	2.2	3.9	1.3	1.1	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.7	25.5	0.0	37.6	0.0	29.7	37.1	26.6	24.1	35.5	27.2	27.4
LnGrp LOS	D	C		D		C	D	C	C	D	C	C
Approach Vol, veh/h		374			653			796			510	
Approach Delay, s/veh		30.7			32.1			29.3			29.1	
Approach LOS		C			C			C			C	

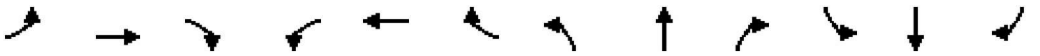
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	24.5	12.6	31.6	11.9	25.5	16.9	27.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	26.5	15.5	46.5	8.5	31.5	24.5	37.5
Max Q Clear Time (g_c+I1), s	8.0	11.5	8.4	24.8	5.2	12.9	12.0	12.8
Green Ext Time (p_c), s	0.4	3.3	0.2	1.9	0.1	5.2	0.6	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	30.3
HCM 7th LOS	C

Notes

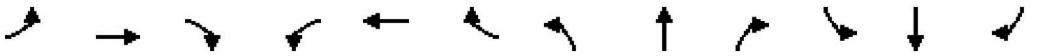
User approved pedestrian interval to be less than phase max green.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	234	82	190	301	140	215	457	129	108	309	92
Future Volume (vph)	122	234	82	190	301	140	215	457	129	108	309	92
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1549	1252	1554	1591	1356	2906	3107	1282	1409	2823	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1549	1252	1554	1591	1356	2906	3107	1282	1409	2823	
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)	128	246	86	200	317	147	226	481	136	114	325	97
RTOR Reduction (vph)	0	0	67	0	0	108	0	0	100	0	25	0
Lane Group Flow (vph)	128	246	19	200	317	39	226	481	36	114	397	0
Confl. Peds. (#/hr)	4		3	3		4						
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	6%	13%	17%	7%	10%	8%	11%	7%	16%	18%	12%	18%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	11.7	19.4	19.4	16.0	23.7	23.7	11.4	23.3	23.3	12.1	24.0	
Effective Green, g (s)	12.2	19.9	19.9	16.5	24.2	23.7	11.9	23.8	23.8	12.6	24.5	
Actuated g/C Ratio	0.14	0.22	0.22	0.19	0.27	0.27	0.13	0.27	0.27	0.14	0.28	
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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	215	347	280	288	433	361	389	832	343	199	778	
v/s Ratio Prot	0.08	0.16		c0.13	c0.20		0.08	c0.15		c0.08	0.14	
v/s Ratio Perm			0.02			0.03			0.03			
v/c Ratio	0.60	0.71	0.07	0.69	0.73	0.11	0.58	0.58	0.11	0.57	0.51	
Uniform Delay, d1	36.0	31.8	27.1	33.8	29.4	24.6	36.1	28.2	24.5	35.6	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	
Incremental Delay, d2	3.7	6.0	0.1	6.5	5.9	0.1	1.8	0.8	0.1	3.2	0.4	
Delay (s)	39.7	37.8	27.2	40.3	35.3	24.7	37.9	29.0	24.6	38.8	27.5	
Level of Service	D	D	C	D	D	C	D	C	C	D	C	
Approach Delay (s/veh)		36.3			34.5			30.7			29.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



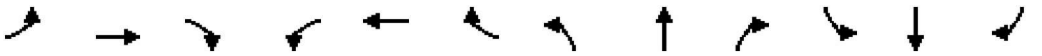
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	234	82	190	301	140	215	457	129	108	309	92
Future Volume (veh/h)	122	234	82	190	301	140	215	457	129	108	309	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1573	1518	1654	1614	1641	1600	1654	1532	1504	1586	1504
Adj Flow Rate, veh/h	128	246	0	200	317	94	226	481	89	114	325	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	13	17	7	10	8	11	7	16	18	12	18
Cap, veh/h	176	328		252	417	348	349	939	388	154	709	153
Arrive On Green	0.11	0.21	0.00	0.16	0.26	0.25	0.12	0.30	0.30	0.11	0.29	0.28
Sat Flow, veh/h	1589	1573	1286	1576	1614	1384	2956	3143	1298	1433	2460	530
Grp Volume(v), veh/h	128	246	0	200	317	94	226	481	89	114	197	199
Grp Sat Flow(s),veh/h/ln	1589	1573	1286	1576	1614	1384	1478	1572	1298	1433	1507	1483
Q Serve(g_s), s	5.5	10.4	0.0	8.7	12.9	3.9	5.2	9.0	3.7	5.5	7.6	7.9
Cycle Q Clear(g_c), s	5.5	10.4	0.0	8.7	12.9	3.9	5.2	9.0	3.7	5.5	7.6	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	176	328		252	417	348	349	939	388	154	434	427
V/C Ratio(X)	0.73	0.75		0.79	0.76	0.27	0.65	0.51	0.23	0.74	0.45	0.47
Avail Cap(c_a), veh/h	313	707		421	839	710	582	1590	657	342	826	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	26.4	0.0	28.7	24.4	21.4	30.0	20.7	18.8	30.8	20.7	20.9
Incr Delay (d2), s/veh	4.3	2.6	0.0	4.2	2.2	0.3	1.5	0.3	0.2	5.1	0.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.9	0.0	3.4	4.8	1.2	1.8	3.1	1.0	2.0	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.9	29.0	0.0	32.9	26.5	21.7	31.5	21.0	19.0	35.9	21.3	21.5
LnGrp LOS	C	C		C	C	C	C	C	B	D	C	C
Approach Vol, veh/h		374			611			796			510	
Approach Delay, s/veh		31.0			27.9			23.7			24.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	24.5	11.9	22.4	11.7	25.2	15.4	18.8
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	13.5	38.5	13.5	36.5	16.5	35.5	18.5	31.5
Max Q Clear Time (g_c+I1), s	7.2	9.9	7.5	14.9	7.5	11.0	10.7	12.4
Green Ext Time (p_c), s	0.5	4.3	0.2	1.4	0.2	5.8	0.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	26.2
HCM 7th LOS	C

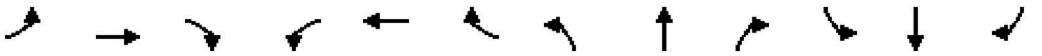
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	407	306	268	324	79	244	402	138	191	751	120
Future Volume (vph)	184	407	306	268	324	79	244	402	138	191	751	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1410	1614	1594		3101	3167	1332	3162	3129	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1410	1614	1594		3101	3167	1332	3162	3129	
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)	198	438	329	288	348	85	262	432	148	205	808	129
RTOR Reduction (vph)	0	0	178	0	7	0	0	0	104	0	10	0
Lane Group Flow (vph)	198	438	151	288	426	0	262	432	44	205	927	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	16.1	31.9	31.9	22.1	37.9		10.5	34.8	34.8	11.8	36.1	
Effective Green, g (s)	16.6	32.4	32.4	22.6	38.4		11.0	35.3	35.3	12.3	36.6	
Actuated g/C Ratio	0.14	0.27	0.27	0.19	0.32		0.09	0.30	0.30	0.10	0.31	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	219	455	385	307	516		287	942	396	327	965	
v/s Ratio Prot	0.13	c0.26		c0.18	0.27		c0.08	0.14		0.06	c0.30	
v/s Ratio Perm			0.11						0.03			
v/c Ratio	0.90	0.96	0.39	0.94	0.82		0.91	0.46	0.11	0.63	0.96	
Uniform Delay, d1	50.2	42.5	35.1	47.3	37.0		53.3	33.9	30.3	51.0	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	35.6	32.5	0.5	35.0	10.1		31.3	0.3	0.1	3.2	19.9	
Delay (s)	85.9	75.0	35.6	82.3	47.1		84.6	34.1	30.3	54.2	60.2	
Level of Service	F	E	D	F	D		F	C	C	D	E	
Approach Delay (s/veh)		63.8			61.2			49.2			59.1	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	118.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	407	306	268	324	79	244	402	138	191	751	120
Future Volume (veh/h)	184	407	306	268	324	79	244	402	138	191	751	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		0.99	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	198	438	0	288	348	80	262	432	94	205	808	118
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	226	464		313	423	97	288	999	420	274	865	126
Arrive On Green	0.14	0.28	0.00	0.19	0.33	0.32	0.09	0.31	0.31	0.09	0.31	0.30
Sat Flow, veh/h	1589	1682	1448	1628	1299	299	3132	3195	1344	3183	2819	412
Grp Volume(v), veh/h	198	438	0	288	0	428	262	432	94	205	462	464
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	0	1598	1566	1598	1344	1591	1611	1620
Q Serve(g_s), s	14.6	30.5	0.0	20.8	0.0	29.5	9.9	12.9	6.2	7.5	33.3	33.4
Cycle Q Clear(g_c), s	14.6	30.5	0.0	20.8	0.0	29.5	9.9	12.9	6.2	7.5	33.3	33.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	226	464		313	0	520	288	999	420	274	494	497
V/C Ratio(X)	0.88	0.94		0.92	0.00	0.82	0.91	0.43	0.22	0.75	0.93	0.93
Avail Cap(c_a), veh/h	226	464		313	0	520	288	999	420	372	498	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	42.5	0.0	47.5	0.0	37.2	53.9	32.7	30.4	53.4	40.3	40.4
Incr Delay (d2), s/veh	29.6	28.2	0.0	31.1	0.0	10.0	30.7	0.2	0.2	4.6	24.8	24.7
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	7.6	16.1	0.0	11.0	0.0	12.7	5.1	5.0	2.0	3.2	16.3	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	79.9	70.7	0.0	78.5	0.0	47.2	84.5	32.9	30.6	58.0	65.1	65.1
LnGrp LOS	E	E		E		D	F	C	C	E	E	E
Approach Vol, veh/h		636			716			788			1131	
Approach Delay, s/veh		73.6			59.8			49.8			63.8	
Approach LOS		E			E			D			E	

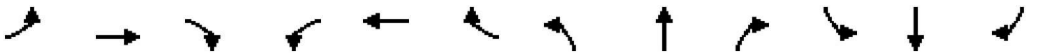
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	40.7	21.0	43.0	14.3	41.4	27.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	36.5	16.5	38.5	13.5	33.5	22.5	32.5
Max Q Clear Time (g_c+I1), s	11.9	35.4	16.6	31.5	9.5	14.9	22.8	32.5
Green Ext Time (p_c), s	0.0	0.8	0.0	1.1	0.3	4.7	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	61.5
HCM 7th LOS	E

Notes

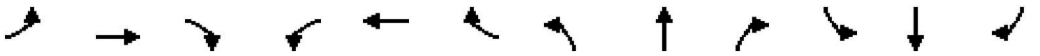
User approved pedestrian interval to be less than phase max green.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	407	306	268	324	79	244	402	138	191	751	120
Future Volume (vph)	184	407	306	268	324	79	244	402	138	191	751	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1568	1667	1410	1614	1636	1422	3101	3167	1318	1630	3129	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1568	1667	1410	1614	1636	1422	3101	3167	1318	1630	3129	
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)	198	438	329	288	348	85	262	432	148	205	808	129
RTOR Reduction (vph)	0	0	181	0	0	59	0	0	111	0	10	0
Lane Group Flow (vph)	198	438	148	288	348	26	262	432	37	205	927	0
Confl. Peds. (#/hr)	3		9	9		3	5		2	2		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	6%	5%	3%	3%	7%	3%	4%	5%	10%	2%	4%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	17.7	31.9	31.9	22.1	36.3	36.3	10.5	29.5	29.5	17.7	36.7	
Effective Green, g (s)	18.2	32.4	32.4	22.6	36.8	36.3	11.0	30.0	30.0	18.2	37.2	
Actuated g/C Ratio	0.15	0.27	0.27	0.19	0.31	0.30	0.09	0.25	0.25	0.15	0.31	
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	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	239	453	383	306	505	433	286	797	331	248	976	
v/s Ratio Prot	0.13	c0.26		c0.18	0.21		0.08	0.14		c0.13	c0.30	
v/s Ratio Perm			0.11			0.02			0.03			
v/c Ratio	0.83	0.97	0.39	0.94	0.69	0.06	0.92	0.54	0.11	0.83	0.95	
Uniform Delay, d1	49.0	42.9	35.3	47.6	36.2	29.4	53.6	38.6	34.3	49.0	40.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	20.1	33.5	0.5	36.0	3.6	0.0	31.9	0.6	0.1	19.3	17.6	
Delay (s)	69.1	76.3	35.8	83.7	39.8	29.4	85.5	39.2	34.5	68.3	57.7	
Level of Service	E	E	D	F	D	C	F	D	C	E	E	
Approach Delay (s/veh)		61.0			56.1			52.8			59.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	57.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	407	306	268	324	79	244	402	138	191	751	120
Future Volume (veh/h)	184	407	306	268	324	79	244	402	138	191	751	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		0.99	1.00		0.97	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	1668	1682	1709	1709	1654	1709	1695	1682	1614	1723	1695	1709
Adj Flow Rate, veh/h	198	438	0	288	348	42	262	432	94	205	808	118
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
Percent Heavy Veh, %	6	5	3	3	7	3	4	5	10	2	4	3
Cap, veh/h	229	464		313	535	459	288	812	337	237	865	126
Arrive On Green	0.14	0.28	0.00	0.19	0.32	0.32	0.09	0.25	0.25	0.14	0.31	0.30
Sat Flow, veh/h	1589	1682	1448	1628	1654	1436	3132	3195	1325	1641	2819	412
Grp Volume(v), veh/h	198	438	0	288	348	42	262	432	94	205	462	464
Grp Sat Flow(s),veh/h/ln	1589	1682	1448	1628	1654	1436	1566	1598	1325	1641	1611	1620
Q Serve(g_s), s	14.6	30.5	0.0	20.8	21.6	2.5	9.9	14.0	6.8	14.6	33.3	33.4
Cycle Q Clear(g_c), s	14.6	30.5	0.0	20.8	21.6	2.5	9.9	14.0	6.8	14.6	33.3	33.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	229	464		313	535	459	288	812	337	237	494	497
V/C Ratio(X)	0.86	0.94		0.92	0.65	0.09	0.91	0.53	0.28	0.86	0.93	0.93
Avail Cap(c_a), veh/h	265	464		313	535	459	288	812	337	274	498	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	42.5	0.0	47.5	34.7	28.6	53.9	38.5	35.8	50.1	40.3	40.4
Incr Delay (d2), s/veh	21.3	28.2	0.0	31.1	2.5	0.1	30.7	0.5	0.3	20.8	24.8	24.7
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	7.1	16.1	0.0	11.0	8.9	0.9	5.1	5.5	2.2	7.3	16.3	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	71.4	70.7	0.0	78.5	37.2	28.6	84.5	39.1	36.2	70.9	65.1	65.1
LnGrp LOS	E	E		E	D	C	F	D	D	E	E	E
Approach Vol, veh/h		636			678			788			1131	
Approach Delay, s/veh		70.9			54.2			53.8			66.1	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	40.7	21.3	42.7	21.3	34.4	27.0	37.0
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	10.5	36.5	19.5	35.5	19.5	27.5	22.5	32.5
Max Q Clear Time (g_c+I1), s	11.9	35.4	16.6	23.6	16.6	16.0	22.8	32.5
Green Ext Time (p_c), s	0.0	0.8	0.2	1.2	0.2	3.6	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	61.6
HCM 7th LOS	E

Notes

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

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

Signalized Intersection V/C Calculation Summary

MORNING PEAK HOUR

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

Year 2023 Existing	Protected Left-Turn Phasing				Protected Left-Turn Phasing							
Critical Movement:	EBL	EBT	WBL	WBTR	NBL	NBT	NBR	SBL	SBTR	Sum of Critical Flow Ratios:	0.53	Critical Intersection V/C: 0.67
Adjusted Flow Rate:	128	217	153	361	194	473	55	89	392	Cycle Length (seconds):	73.7	
Saturated Flow:	1589	1573	1576	1543	2956	3143	1298	1433	2991	Lost Time per phase (seconds)	4	
Flow Ratio:	0.08	0.14	0.10	0.23	0.07	0.15	0.04	0.06	0.13	Number of Phases	4	
			0.31				0.21					

Year 2025 Background	Protected Left-Turn Phasing				Protected Left-Turn Phasing							
Critical Movement:	EBL	EBT	WBL	WBTR	NBL	NBT	NBR	SBL	SBTR	Sum of Critical Flow Ratios:	0.58	Critical Intersection V/C: 0.73
Adjusted Flow Rate:	132	231	177	419	226	495	64	98	406	Cycle Length (seconds):	78.5	
Saturated Flow:	1589	1573	1576	1537	2956	3143	1298	1433	2992	Lost Time per phase (seconds)	4	
Flow Ratio:	0.08	0.15	0.11	0.27	0.08	0.16	0.05	0.07	0.14	Number of Phases	4	
			0.36				0.23					

Year 2025 Buildout	Protected Left-Turn Phasing				Protected Left-Turn Phasing							
Critical Movement:	EBL	EBT	WBL	WBTR	NBL	NBT	NBR	SBL	SBTR	Sum of Critical Flow Ratios:	0.61	Critical Intersection V/C: 0.76
Adjusted Flow Rate:	128	246	200	453	226	481	89	114	396	Cycle Length (seconds):	81.2	
Saturated Flow:	1589	1573	1576	1529	2956	3143	1298	1433	2990	Lost Time per phase (seconds)	4	
Flow Ratio:	0.08	0.16	0.13	0.30	0.08	0.15	0.07	0.08	0.13	Number of Phases	4	
			0.38				0.23					

EVENING PEAK HOUR

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

Year 2023 Existing	Protected Left-Turn Phasing				Protected Left-Turn Phasing							
Critical Movement:	EBL	EBT	WBL	WBTR	NBL	NBT	NBR	SBL	SBTR	Sum of Critical Flow Ratios:	0.75	Critical Intersection V/C: 0.87
Adjusted Flow Rate:	196	397	256	383	238	420	62	175	902	Cycle Length (seconds):	113.4	
Saturated Flow:	1589	1682	1628	1607	3132	3195	1327	1641	3231	Lost Time per phase (seconds)	4	
Flow Ratio:	0.12	0.24	0.16	0.24	0.08	0.13	0.05	0.11	0.28	Number of Phases	4	
			0.39				0.36					

Year 2025 Background	Protected Left-Turn Phasing				Protected Left-Turn Phasing							
Critical Movement:	EBL	EBT	WBL	WBTR	NBL	NBT	NBR	SBL	SBTR	Sum of Critical Flow Ratios:	0.80	Critical Intersection V/C: 0.92
Adjusted Flow Rate:	200	430	273	416	262	437	83	196	934	Cycle Length (seconds):	116.8	
Saturated Flow:	1589	1682	1628	1602	3132	3195	1327	1641	3231	Lost Time per phase (seconds)	4	
Flow Ratio:	0.13	0.26	0.17	0.26	0.08	0.14	0.06	0.12	0.29	Number of Phases	4	
			0.42				0.37					

Year 2025 Buildout	Protected Left-Turn Phasing				Protected Left-Turn Phasing							
Critical Movement:	EBL	EBT	WBL	WBTR	NBL	NBT	NBR	SBL	SBTR	Sum of Critical Flow Ratios:	0.81	Critical Intersection V/C: 0.94
Adjusted Flow Rate:	198	438	288	433	262	432	94	205	926	Cycle Length (seconds):	116.6	
Saturated Flow:	1589	1682	1628	1595	3132	3195	1326	1641	3231	Lost Time per phase (seconds)	4	
Flow Ratio:	0.12	0.26	0.18	0.27	0.08	0.14	0.07	0.12	0.29	Number of Phases	4	
			0.44				0.37					

Notes:

Since EB and WB left-turn phases are protected, critical ring is either EBL+WBT or WBL+EBT

Since NB and SB left-turn phases are protected, critical ring is either NBL+SBT or SBL+NBT

Signalized Intersection V/C Calculation Summary

MITIGATION OPTION 1 - TSP - DUAL SOUTHBOUND LEFT-TURN LANES - MORNING PEAK HOUR

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

Year 2025 Background	Protected Left-Turn Phasing					Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBTR		NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	132	231	177	419		226	495	64	98	406
Saturated Flow:	1589	1573	1576	1537		2956	3143	1298	2779	2992
Flow Ratio:	0.08	0.15	0.11	0.27		0.08	0.16	0.05	0.04	0.14
			0.36					0.21		

Sum of Critical Flow Ratios:	0.57	Critical Intersection V/C:	0.71
Cycle Length (seconds):	78.9		
Lost Time per phase (seconds)	4		
Number of Phases	4		

Year 2025 Buildout	Protected Left-Turn Phasing					Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBTR		NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	128	246	200	453		226	481	89	114	396
Saturated Flow:	1589	1573	1576	1529		2956	3143	1298	2779	2990
Flow Ratio:	0.08	0.16	0.13	0.30		0.08	0.15	0.07	0.04	0.13
			0.38					0.21		

Sum of Critical Flow Ratios:	0.59	Critical Intersection V/C:	0.73
Cycle Length (seconds):	81.6		
Lost Time per phase (seconds)	4		
Number of Phases	4		

MITIGATION OPTION 2 - WOODBURN PLACE TIAS - WESTBOUND RIGHT-TURN LANE - MORNING PEAK HOUR

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

Year 2025 Background	Protected Left-Turn Phasing						Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	132	231	177	306	71	226	495	64	98	406
Saturated Flow:	1589	1573	1576	1614	1384	2956	3143	1298	1433	2992
Flow Ratio:	0.08	0.15	0.11	0.19	0.05	0.08	0.16	0.05	0.07	0.14
			0.27					0.23		

Sum of Critical Flow Ratios:	0.50	Critical Intersection V/C:	0.65
Cycle Length (seconds):	70.1		
Lost Time per phase (seconds)	4		
Number of Phases	4		

Year 2025 Buildout	Protected Left-Turn Phasing						Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	128	246	200	317	94	226	481	89	114	396
Saturated Flow:	1589	1573	1576	1614	1384	2956	3143	1298	1433	2990
Flow Ratio:	0.08	0.16	0.13	0.20	0.07	0.08	0.15	0.07	0.08	0.13
			0.28					0.23		

Sum of Critical Flow Ratios:	0.52	Critical Intersection V/C:	0.67
Cycle Length (seconds):	71.2		
Lost Time per phase (seconds)	4		
Number of Phases	4		

Notes:

Since EB and WB left-turn phases are protected, critical ring is either EBL+WBT or WBL+EBT

Since NB and SB left-turn phases are protected, critical ring is either NBL+SBT or SBL+NBT

Signalized Intersection V/C Calculation Summary

MITIGATION OPTION 1 - TSP - DUAL SOUTHBOUND LEFT-TURN LANES - EVENING PEAK HOUR

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

Year 2025 Background	Protected Left-Turn Phasing					Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBTR		NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	200	430	273	416		262	437	83	196	934
Saturated Flow:	1589	1682	1628	1602		3132	3195	1327	3183	3231
Flow Ratio:	0.13	0.26	0.17	0.26		0.08	0.14	0.06	0.06	0.29
			0.42					0.37		

Sum of Critical Flow Ratios:	0.80	Critical Intersection V/C:	0.92
Cycle Length (seconds):	117.7		
Lost Time per phase (seconds)	4		
Number of Phases	4		

Year 2025 Buildout	Protected Left-Turn Phasing					Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBTR		NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	198	438	288	428		262	432	94	205	926
Saturated Flow:	1589	1682	1628	1598		3132	3195	1326	3183	3231
Flow Ratio:	0.12	0.26	0.18	0.27		0.08	0.14	0.07	0.06	0.29
			0.44					0.37		

Sum of Critical Flow Ratios:	0.81	Critical Intersection V/C:	0.93
Cycle Length (seconds):	119.7		
Lost Time per phase (seconds)	4		
Number of Phases	4		

MITIGATION OPTION 2 - WOODBURN PLACE TIAS - WESTBOUND RIGHT-TURN LANE - EVENING PEAK HOUR

1. Molalla Road (OR 211)/Mt. Hood Avenue (OR 214) & N Pacific Highway (OR 99E)

Year 2025 Background	Protected Left-Turn Phasing						Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	200	430	273	345	38	262	437	83	196	934
Saturated Flow:	1589	1682	1628	1654	1436	3132	3195	1327	1641	3231
Flow Ratio:	0.13	0.26	0.17	0.21	0.03	0.08	0.14	0.06	0.12	0.29
			0.42					0.37		

Sum of Critical Flow Ratios:	0.80	Critical Intersection V/C:	0.92
Cycle Length (seconds):	117.7		
Lost Time per phase (seconds)	4		
Number of Phases	4		

Year 2025 Buildout	Protected Left-Turn Phasing						Protected Left-Turn Phasing				
Critical Movement:	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBTR
Adjusted Flow Rate:	198	438	288	348	42	262	432	94	205	926
Saturated Flow:	1589	1682	1628	1654	1436	3132	3195	1326	1641	3231
Flow Ratio:	0.12	0.26	0.18	0.21	0.03	0.08	0.14	0.07	0.12	0.29
			0.44					0.37		

Sum of Critical Flow Ratios:	0.81	Critical Intersection V/C:	0.93
Cycle Length (seconds):	119.7		
Lost Time per phase (seconds)	4		
Number of Phases	4		

Notes:

Since EB and WB left-turn phases are protected, critical ring is either EBL+WBT or WBL+EBT

Since NB and SB left-turn phases are protected, critical ring is either NBL+SBT or SBL+NBT

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	L	TR	L	L	T	T	R	L	T	TR
Maximum Queue (ft)	175	272	186	308	184	228	225	154	71	161	206	178
Average Queue (ft)	82	131	99	204	58	112	108	76	16	57	102	65
95th Queue (ft)	153	225	168	313	154	191	186	153	50	123	185	145
Link Distance (ft)		915	295	295			743	743			524	524
Upstream Blk Time (%)				2								
Queuing Penalty (veh)				7								
Storage Bay Dist (ft)	350				325	325			185	350		
Storage Blk Time (%)						0		0				
Queuing Penalty (veh)						0		0				

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	36	10	138	106	58
Average Queue (ft)	1	0	17	49	19
95th Queue (ft)	16	7	79	86	47
Link Distance (ft)	295		723	327	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 3: June Way/Woodburn Place West & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	LTR	L	LTR	LTR
Maximum Queue (ft)	50	40	35	72
Average Queue (ft)	6	3	16	34
95th Queue (ft)	30	24	33	57
Link Distance (ft)	723		501	173
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Molalla Road (OR 211) & Primary Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Molalla Road (OR 211) & Woodburn Place East

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	31	26	20	55
Average Queue (ft)	4	1	1	20
95th Queue (ft)	21	12	10	47
Link Distance (ft)		122	396	278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 6: Cooley Road & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	13	30	66	74
Average Queue (ft)	1	5	31	22
95th Queue (ft)	14	21	59	65
Link Distance (ft)			510	271
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50	400		
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 7

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	R	L	T
Maximum Queue (ft)	450	675	221	309	310	204	242	237	191	100	219	345
Average Queue (ft)	203	349	38	208	224	105	151	112	89	28	105	222
95th Queue (ft)	428	623	151	330	339	199	216	195	166	78	187	326
Link Distance (ft)		915	915	295	295			743	743			524
Upstream Blk Time (%)				6	4							
Queuing Penalty (veh)				21	13							
Storage Bay Dist (ft)	350					325	325			185	350	
Storage Blk Time (%)	1	19							0			0
Queuing Penalty (veh)	3	35							0			0

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB
Directions Served	TR
Maximum Queue (ft)	303
Average Queue (ft)	202
95th Queue (ft)	304
Link Distance (ft)	524
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	31	41	329	336	250
Average Queue (ft)	1	4	75	130	70
95th Queue (ft)	22	24	239	279	195
Link Distance (ft)	295		723	327	
Upstream Blk Time (%)				6	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)	0			20	
Queuing Penalty (veh)	0			26	

Intersection: 3: June Way/Woodburn Place West & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	LTR	L	LTR	LTR
Maximum Queue (ft)	104	28	58	54
Average Queue (ft)	27	2	18	25
95th Queue (ft)	78	15	44	50
Link Distance (ft)	723		501	173
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Molalla Road (OR 211) & Primary Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Molalla Road (OR 211) & Woodburn Place East

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	58	51	44	31
Average Queue (ft)	21	4	2	14
95th Queue (ft)	48	28	17	39
Link Distance (ft)		122	396	278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	1	0		

Intersection: 6: Cooley Road & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	25	60	74	31
Average Queue (ft)	1	23	34	9
95th Queue (ft)	12	49	63	31
Link Distance (ft)			510	271
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50	400		
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 101

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	R	L	T
Maximum Queue (ft)	180	290	26	220	309	182	227	229	185	82	178	191
Average Queue (ft)	74	140	1	127	218	60	120	117	86	22	70	99
95th Queue (ft)	148	235	18	208	327	160	199	192	165	63	151	175
Link Distance (ft)		915	915	295	295			743	743			524
Upstream Blk Time (%)					3							
Queuing Penalty (veh)					9							
Storage Bay Dist (ft)	350					325	325			185	350	
Storage Blk Time (%)									0			
Queuing Penalty (veh)									0			

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB
Directions Served	TR
Maximum Queue (ft)	177
Average Queue (ft)	66
95th Queue (ft)	148
Link Distance (ft)	524
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	49	8	159	168	52
Average Queue (ft)	3	0	24	63	19
95th Queue (ft)	25	7	100	122	48
Link Distance (ft)	295		723	327	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)	0			1	
Queuing Penalty (veh)	0			0	

Intersection: 3: June Way/Woodburn Place West & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	LTR	L	LTR	LTR
Maximum Queue (ft)	88	29	52	60
Average Queue (ft)	10	2	18	33
95th Queue (ft)	46	18	38	54
Link Distance (ft)	723		501	173
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Molalla Road (OR 211) & Primary Site Access

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	44	63
Average Queue (ft)	16	33
95th Queue (ft)	42	55
Link Distance (ft)		277
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Molalla Road (OR 211) & Woodburn Place East

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	40	6	43	54
Average Queue (ft)	6	0	2	25
95th Queue (ft)	26	4	17	52
Link Distance (ft)		122	396	278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 6: Cooley Road & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	24	31	68	74
Average Queue (ft)	1	4	34	22
95th Queue (ft)	15	19	60	63
Link Distance (ft)			510	271
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50	400		
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 10

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	R	L	T
Maximum Queue (ft)	450	722	514	306	307	177	223	221	203	108	221	341
Average Queue (ft)	181	348	79	219	221	94	140	116	88	32	118	205
95th Queue (ft)	398	675	357	326	336	186	203	190	168	80	202	302
Link Distance (ft)		915	915	293	293			743	743			518
Upstream Blk Time (%)		1	0	6	4							
Queuing Penalty (veh)		0	0	20	14							
Storage Bay Dist (ft)	350					325	325			185	350	
Storage Blk Time (%)		16							0			0
Queuing Penalty (veh)		29							1			0

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB
Directions Served	TR
Maximum Queue (ft)	334
Average Queue (ft)	191
95th Queue (ft)	285
Link Distance (ft)	518
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	10	45	339	350	250
Average Queue (ft)	0	4	80	150	87
95th Queue (ft)	5	24	237	340	229
Link Distance (ft)	293		723	328	
Upstream Blk Time (%)				16	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				29	0
Queuing Penalty (veh)				38	0

Intersection: 3: June Way/Woodburn Place West & Molalla Road (OR 211)

Movement	EB	WB	NB	SB
Directions Served	LTR	L	LTR	LTR
Maximum Queue (ft)	123	16	58	49
Average Queue (ft)	24	1	19	23
95th Queue (ft)	81	9	48	50
Link Distance (ft)	723		501	173
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Molalla Road (OR 211) & Primary Site Access

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	52	6	4	68
Average Queue (ft)	17	0	0	31
95th Queue (ft)	45	4	3	61
Link Distance (ft)		272	122	277
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Molalla Road (OR 211) & Woodburn Place East

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	55	66	25	36
Average Queue (ft)	17	4	1	14
95th Queue (ft)	47	30	14	40
Link Distance (ft)		122	396	278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	2	0		

Intersection: 6: Cooley Road & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	21	9	55	75	32
Average Queue (ft)	2	0	21	37	9
95th Queue (ft)	13	7	47	65	32
Link Distance (ft)		396		510	271
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50		400		
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Network Summary

Network wide Queuing Penalty: 103

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	L	TR	L	L	T	T	R	L	L	T
Maximum Queue (ft)	190	262	212	297	161	204	225	190	65	134	101	192
Average Queue (ft)	81	116	102	196	54	113	115	88	11	46	17	95
95th Queue (ft)	151	214	179	303	145	185	191	168	43	104	60	171
Link Distance (ft)		915	295	295			743	743				523
Upstream Blk Time (%)			0	1								
Queuing Penalty (veh)			0	4								
Storage Bay Dist (ft)	350				325	325			185	350	350	
Storage Blk Time (%)								0				
Queuing Penalty (veh)								0				

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB
Directions Served	TR
Maximum Queue (ft)	166
Average Queue (ft)	65
95th Queue (ft)	145
Link Distance (ft)	523
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	41	24	124	125	52
Average Queue (ft)	2	1	14	56	20
95th Queue (ft)	20	13	79	100	46
Link Distance (ft)	295		316	315	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 4

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	L	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	155	282	250	294	92	162	214	209	179	103	170	179
Average Queue (ft)	77	137	117	155	44	48	111	112	82	21	61	82
95th Queue (ft)	138	235	203	261	78	137	186	186	158	62	136	159
Link Distance (ft)		915	288	288	288			743	743			509
Upstream Blk Time (%)			0	0								
Queuing Penalty (veh)			0	1								
Storage Bay Dist (ft)	350					325	325			185	350	
Storage Blk Time (%)		0							0			
Queuing Penalty (veh)		0							0			

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB
Directions Served	TR
Maximum Queue (ft)	182
Average Queue (ft)	56
95th Queue (ft)	144
Link Distance (ft)	509
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	WB	NB	NB
Directions Served	T	LT	L	R
Maximum Queue (ft)	36	82	122	54
Average Queue (ft)	1	8	53	21
95th Queue (ft)	17	40	96	47
Link Distance (ft)	288	723	327	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				150
Storage Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	

Zone Summary

Zone wide Queuing Penalty: 1

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	R	L	L
Maximum Queue (ft)	448	636	292	298	307	199	236	192	159	57	156	131
Average Queue (ft)	188	312	54	190	223	106	148	105	77	13	78	38
95th Queue (ft)	380	578	205	304	330	195	212	176	143	40	141	99
Link Distance (ft)		915	915	295	295			743	743			
Upstream Blk Time (%)				2	2							
Queuing Penalty (veh)				7	7							
Storage Bay Dist (ft)	350					325	325			185	350	350
Storage Blk Time (%)	1	12							0			
Queuing Penalty (veh)	3	23							0			

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	458	402
Average Queue (ft)	245	230
95th Queue (ft)	387	366
Link Distance (ft)	523	523
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	4	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	21	43	285	269	179
Average Queue (ft)	1	3	62	114	48
95th Queue (ft)	16	24	200	235	145
Link Distance (ft)	295		316	315	
Upstream Blk Time (%)			0	2	
Queuing Penalty (veh)			2	0	
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				14	
Queuing Penalty (veh)				18	

Zone Summary

Zone wide Queuing Penalty: 64

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	R	L	L	T	T	R	L
Maximum Queue (ft)	406	637	383	286	286	55	201	244	199	177	104	198
Average Queue (ft)	160	299	66	160	181	25	115	156	113	89	32	98
95th Queue (ft)	336	540	241	254	279	49	202	230	175	158	84	176
Link Distance (ft)		915	915	286	286	286			743	743		
Upstream Blk Time (%)		0		1	1							
Queuing Penalty (veh)		0		2	2							
Storage Bay Dist (ft)	350						325	325			185	350
Storage Blk Time (%)		11								0		
Queuing Penalty (veh)		22								0		

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	379	386
Average Queue (ft)	222	210
95th Queue (ft)	329	327
Link Distance (ft)	503	503
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	1	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	6	53	184	222	137
Average Queue (ft)	0	3	27	82	48
95th Queue (ft)	4	21	101	170	102
Link Distance (ft)	286		724	326	
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				4	0
Queuing Penalty (veh)				5	0

Zone Summary

Zone wide Queuing Penalty: 33

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	R	L	L
Maximum Queue (ft)	165	272	30	256	309	177	210	216	189	87	144	96
Average Queue (ft)	80	135	1	121	216	49	112	118	88	18	52	24
95th Queue (ft)	148	232	21	203	327	136	185	195	164	54	113	72
Link Distance (ft)		915	915	295	295			743	743			
Upstream Blk Time (%)				0	2							
Queuing Penalty (veh)				0	8							
Storage Bay Dist (ft)	350					325	325			185	350	350
Storage Blk Time (%)									0			
Queuing Penalty (veh)									0			

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	215	210
Average Queue (ft)	97	79
95th Queue (ft)	181	166
Link Distance (ft)	523	523
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	16	35	148	169	51
Average Queue (ft)	1	1	23	66	17
95th Queue (ft)	9	12	91	133	44
Link Distance (ft)	295		316	315	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				3	
Queuing Penalty (veh)				1	

Zone Summary

Zone wide Queuing Penalty: 9

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	L	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	155	282	250	294	92	162	214	209	179	103	170	179
Average Queue (ft)	77	137	117	155	44	48	111	112	82	21	61	82
95th Queue (ft)	138	235	203	261	78	137	186	186	158	62	136	159
Link Distance (ft)		915	288	288	288			743	743			509
Upstream Blk Time (%)			0	0								
Queuing Penalty (veh)			0	1								
Storage Bay Dist (ft)	350					325	325			185	350	
Storage Blk Time (%)		0							0			
Queuing Penalty (veh)		0							0			

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB
Directions Served	TR
Maximum Queue (ft)	182
Average Queue (ft)	56
95th Queue (ft)	144
Link Distance (ft)	509
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	WB	NB	NB
Directions Served	T	LT	L	R
Maximum Queue (ft)	36	82	122	54
Average Queue (ft)	1	8	53	21
95th Queue (ft)	17	40	96	47
Link Distance (ft)	288	723	327	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				150
Storage Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	

Zone Summary

Zone wide Queuing Penalty: 1

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	R	L	L
Maximum Queue (ft)	448	636	292	298	307	199	236	192	159	57	156	131
Average Queue (ft)	188	312	54	190	223	106	148	105	77	13	78	38
95th Queue (ft)	380	578	205	304	330	195	212	176	143	40	141	99
Link Distance (ft)		915	915	295	295			743	743			
Upstream Blk Time (%)				2	2							
Queuing Penalty (veh)				7	7							
Storage Bay Dist (ft)	350					325	325			185	350	350
Storage Blk Time (%)	1	12							0			
Queuing Penalty (veh)	3	23							0			

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	458	402
Average Queue (ft)	245	230
95th Queue (ft)	387	366
Link Distance (ft)	523	523
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	4	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	LT	L	R
Maximum Queue (ft)	21	43	285	269	179
Average Queue (ft)	1	3	62	114	48
95th Queue (ft)	16	24	200	235	145
Link Distance (ft)	295		316	315	
Upstream Blk Time (%)			0	2	
Queuing Penalty (veh)			2	0	
Storage Bay Dist (ft)		100			150
Storage Blk Time (%)				14	
Queuing Penalty (veh)				18	

Zone Summary

Zone wide Queuing Penalty: 64

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	R	L	L	T	T	R	L
Maximum Queue (ft)	449	565	204	289	300	63	213	247	236	210	112	299
Average Queue (ft)	150	315	50	199	173	25	112	153	115	89	30	121
95th Queue (ft)	302	502	167	315	284	52	209	226	192	176	81	231
Link Distance (ft)		915	915	286	286	286			743	743		
Upstream Blk Time (%)				5	1							
Queuing Penalty (veh)				11	2							
Storage Bay Dist (ft)	350						325	325			185	350
Storage Blk Time (%)		11								1		0
Queuing Penalty (veh)		20								1		0

Intersection: 1: N Pacific Hwy(99E) & Mt Hood Ave (OR 214)/Molalla Road (OR 211)

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	411	390
Average Queue (ft)	224	207
95th Queue (ft)	353	350
Link Distance (ft)	503	503
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	3	

Intersection: 2: Safeway Access & Molalla Road (OR 211)

Movement	EB	WB	NB	NB
Directions Served	R	LT	L	R
Maximum Queue (ft)	24	224	250	178
Average Queue (ft)	2	46	109	63
95th Queue (ft)	15	160	231	159
Link Distance (ft)		724	326	
Upstream Blk Time (%)			2	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)	100			150
Storage Blk Time (%)			12	0
Queuing Penalty (veh)			16	0

Zone Summary

Zone wide Queuing Penalty: 54