Molalla Rd Apartments

Traffic Impact Analysis

Woodburn, Oregon

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CHAPTER 1: INTRODUCTION AND SUMMARY

This study evaluates the transportation impacts for the proposed Molalla Road Apartments residential development in Woodburn, Oregon. Currently, the parcel of land is a greenfield and adjacent to commercial and industrial uses. The proposed development would construct 231 apartment units. The development would have a single point of access to Molalla Road.

The purpose of this transportation impact analysis (TIA) is to evaluate possible system impacts from the proposed development and, where necessary, recommend mitigation measures on the nearby transportation network. The impact analysis is focused on intersections identified as being in the study area, based on guidance from City and ODOT staff, and shown in **Figure 1**.

1. N Pacific Hwy (99E) / Molalla Road (OR 211)
2. Molalla Road (OR 211) / June Way
3. Molalla Road (OR 211) / Proposed Site Driveway
4. Molalla Road (OR 211) / Cooley Road

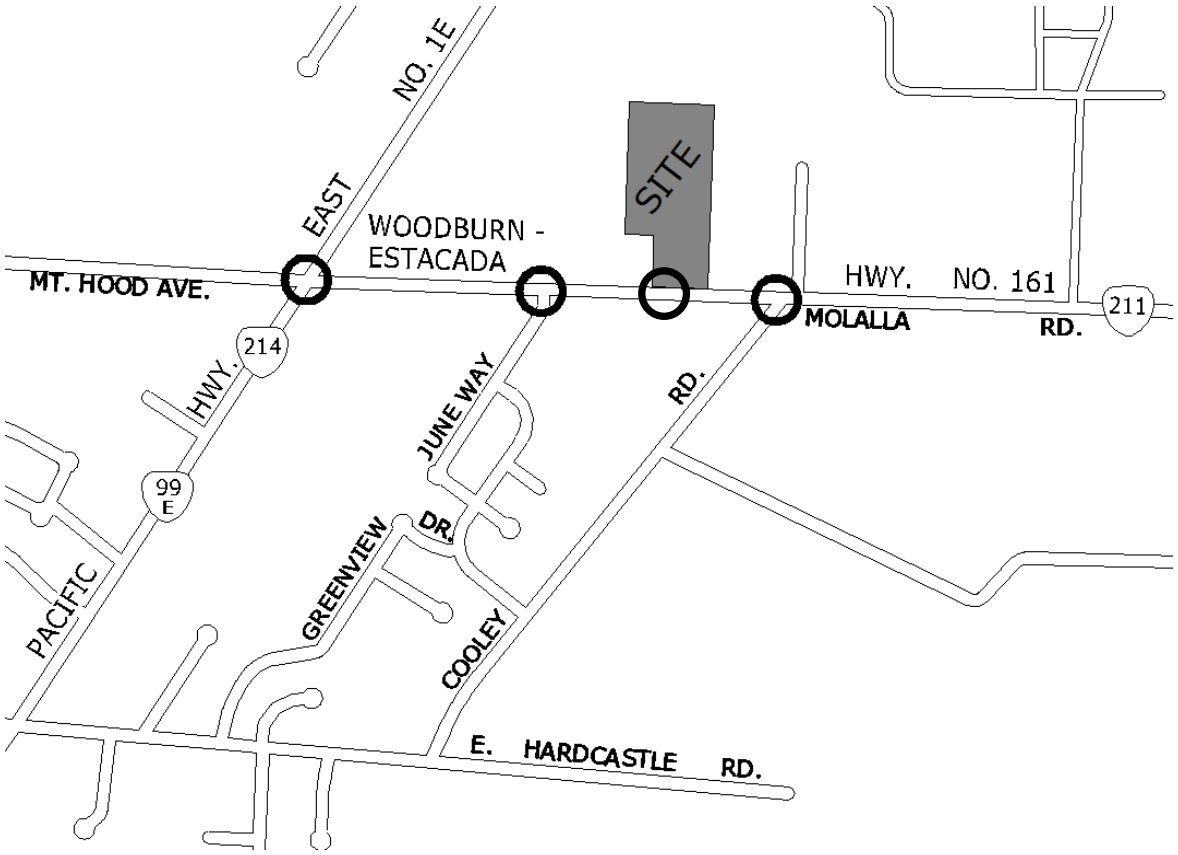


Figure 1: Study Area

Proposed Development

The project sponsor is proposing to build an apartment complex located on the north side of Molalla Road just east of N Pacific Highway (Hwy) at 2145 Molalla Road. The proposed development would build two-hundred thirty-one (231) apartment units. The complex would have direct access to Molalla Road. **Appendix A** provides the site plan of the proposed development. **Table 1** lists important characteristics of the study area and proposed project.

Table 1: Key Study Area and Proposed Development Characteristics

Characteristics	Information
Study Area	
Number of Study Intersections	Two
Analysis Period	Weekday A.M and P.M. Peak Hours
Analysis Scenarios	2019 Existing Conditions, AM Peak Hour 2019 Existing Conditions, PM Peak Hour 2021 Background Traffic, AM Peak Hour 2021 Background Traffic, PM Peak Hour 2021 Total Traffic (Background + Site), AM Peak Hour 2021 Total Traffic (Background + Site), PM Peak Hour
Project Site	
Existing Land Use	Vacant
Proposed Development	231 apartment units
Project Access	The development will be served via a single access to Molalla Road

Existing Conditions and Intersection Operations

Transportation impacts associated with the proposed development in the nearby area were evaluated. The following intersections were identified for evaluation:

1. N Pacific Hwy (99E) / Molalla Road (OR 211)
2. Molalla Road (OR 211) / June Way
3. Molalla Road (OR 211) / Proposed Site Driveway
4. Molalla Road (OR 211) / Cooley Road

Table 2 shows the existing intersection operations at the study intersections.

Table 2: Existing Traffic at Study Intersection Operations

No.	Intersection	Traffic Control	Operating Standard (Major, Minor)	AM Peak Hour (Major, Minor)	P.M. Peak Hour (Major, Minor)
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	Signal	0.90 V/C	0.77 V/C	***0.94 V/C***
2	Molalla Road (OR 211) / June Way	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.00 V/C, 0.17 V/C	0.01 V/C, 0.16 V/C
3	Molalla Road (OR 211) / Proposed Site Driveway	-	-	-	-
4	Molalla Road (OR 211) / Cooley Road	Unsignalized (Two way stop)	0.95 V/C, 0.95 V/C	0.04 V/C, 0.19 V/C	0.14 V/C, 0.32 V/C

V/C = Volume-to-Capacity Ratio of Worst Movement
LOS = Level of Service of Worst Movement
Locations exceeding mobility standards are shown with ***bold/italicized***

Project Traffic Impact

Construction of the proposed Molalla Road apartments is expected to be completed in 2021. To determine whether the proposed project will result in off-site traffic impacts, future traffic volumes were estimated. **Tables 3 and 4** provide the intersection operations for the future scenarios with and without project traffic.

Table 3: 2021 Background Intersection Operations (Without Project)

No.	Intersection	Traffic Control	Operating Standard (Major, Minor)	AM Peak Hour (Major, Minor)	P.M. Peak Hour (Major, Minor)
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	Signal	0.90 V/C	0.80 V/C	***0.97 V/C***
2	Molalla Road (OR 211) / June Way	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.00 V/C, 0.18 V/C	0.01 V/C, 0.17 V/C
3	Molalla Road (OR 211) / Proposed Site Driveway	-	-	-	-
4	Molalla Road (OR 211) / Cooley Road	Unsignalized (Two way stop)	0.95 V/C, 0.95 V/C	0.04 V/C, 0.19 V/C	0.15 V/C, 0.33 V/C

V/C = Volume-to-Capacity Ratio of Worst Movement
LOS = Level of Service of Worst Movement
Locations exceeding mobility standards are shown with ***bold/italicized***

Table 4: 2021 Total Intersection Operations (With Project)

No.	Intersection	Traffic Control	Operating Standard (Major, Minor)	AM Peak Hour (Major, Minor)	P.M. Peak Hour (Major, Minor)
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	Signal	0.90 V/C	0.84 V/C	***1.00 V/C***
2	Molalla Road (OR 211) / June Way	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.00 V/C, 0.20 V/C	0.01 V/C, 0.20 V/C
3	Molalla Road (OR 211) / Proposed Site Driveway	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.02 V/C, 0.10 V/C	0.06 V/C, 0.07 V/C
4	Molalla Road (OR 211) / Cooley Road	Unsignalized (Two way stop)	0.95 V/C, 0.95 V/C	0.04 V/C, 0.20 V/C	0.15 V/C, 0.37 V/C

V/C = Volume-to-Capacity Ratio of Worst Movement
LOS = Level of Service of Worst Movements
Locations exceeding mobility standards are shown with ***bold/italicized***

Key Findings

Key findings associated with the proposed development include the following items:

- The proposed development would generate 78 (20 in, 58 out) AM peak hour trips and 99 (61 in, 38 out) PM peak hour vehicle trips.
- All study intersections are expected to operate within mobility standards with the addition of the proposed site, with the exception of N Pacific Hwy (99E) / Molalla Road (OR 211). This location exceeds the target mobility standard during the PM Peak hour under the existing, background, and total (with project) analysis scenarios.

CHAPTER 2: EXISTING CONDITIONS

This chapter provides documentation of existing study area conditions, including the project site, study area roadway network, and existing traffic volumes and operations.

Project Site

This study evaluates the transportation impacts for the proposed Molalla Road apartments in Woodburn, Oregon. Currently, the parcel of land is a greenfield and adjacent to other housing. The proposed development would construct 231 apartment units. The development would have a single point of access to Molalla Road.

Project Area Roadway Network

Key roadways in the study area are summarized in **Table 5** along with their existing roadway characteristics.

Table 5: Project Area Existing Roadway Characteristics

Roadway	Classification	Ownership	Number of Lanes	Posted Speed	Pedestrian Facilities	Bicycle Facilities
N Pacific Hwy (99E)	Minor Arterial (north of OR 211), Principal Arterial (south of OR 211)	ODOT	4	35 mph	Sidewalks on both sides of the street	Bike lanes on both sides of the street
Molalla Road (OR 211)	Minor Arterial (east of 99E), Principal Arterial (west of 99E)	ODOT	2 (east of 99E), 4 (west of 99E)	25 mph (east if June Way) 35 mph (west of June Way)	Sidewalks on both sides of the street west of 99E. Intermittent sidewalks on the south side between 99E and Cooley Rd	Shoulder greater than 5' on the south side. Shoulder greater than 5' on the north side between June Way and Cooley Rd
June Way	Local	City	2	25 mph	Sidewalks on both sides	None
Cooley Road	Major Collector	City	2	40 mph	None	None

Existing Traffic Volumes and Operations

Existing AM and PM peak hour traffic operations were analyzed at the following study intersections:

1. N Pacific Hwy (99E) / Molalla Road (OR 211)
2. Molalla Road (OR 211) / June Way
3. Molalla Road (OR 211) / Proposed Site Driveway
4. Molalla Road (OR 211) / Cooley Road

Peak hour traffic counts were collected on Thursday, September 12th, 2019. The peak hour traffic volumes analyzed under existing conditions are shown in **Figure 2 and Figure 3**, with the detailed two-hour traffic counts included in **Appendix B.** The AM system peak hour was identified as 7:05 – 8:05 AM, and the PM system peak hour as 4:10 – 5:10 PM.

ODOT has requested that a minimum of one vehicle be represented for each permitted movement in the analysis to ensure the software used (Synchro and SimTraffic) accurately calculate the resulting operational values. The field collected data did not record any vehicles for the following movements:

- Westbound left at Molalla Road / June Way (AM Peak Hour – Existing and Background Conditions Only)
- Southbound left at Molalla Road / Cooley Road (AM Peak Hour)
- Westbound right at Molalla Road / Cooley Road (PM Peak Hour)
- Northbound thru at Molalla Road / Cooley Road (PM Peak Hour)

One vehicle for each of these movements has been added to the analysis models for all scenarios and is reflected in the reports in the appendix. Since these values were not field observed, they are not shown in the Figures throughout the report. Additionally, all analysis scenarios assume a saturation flow rate of 1750 pcphgl, as requested by ODOT.

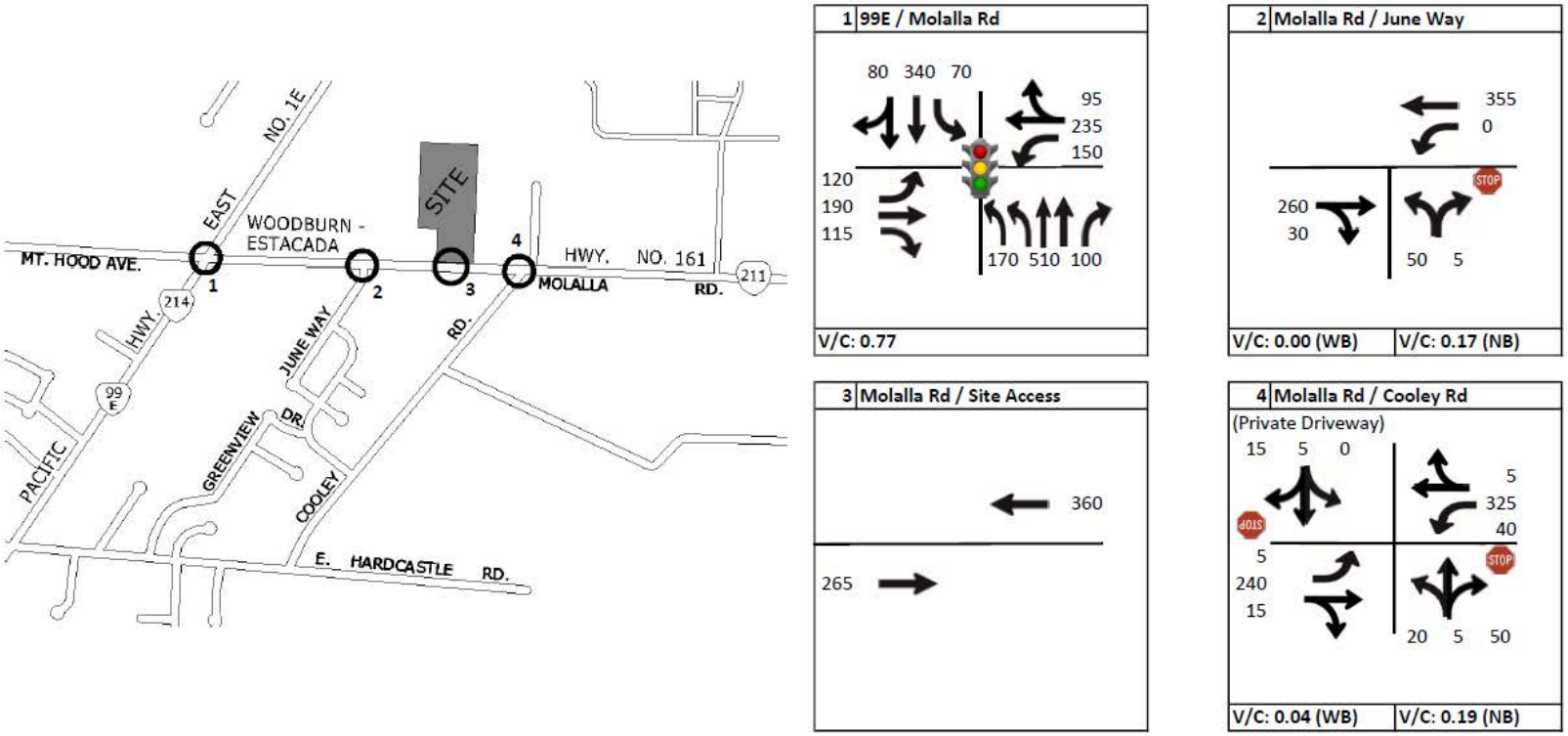
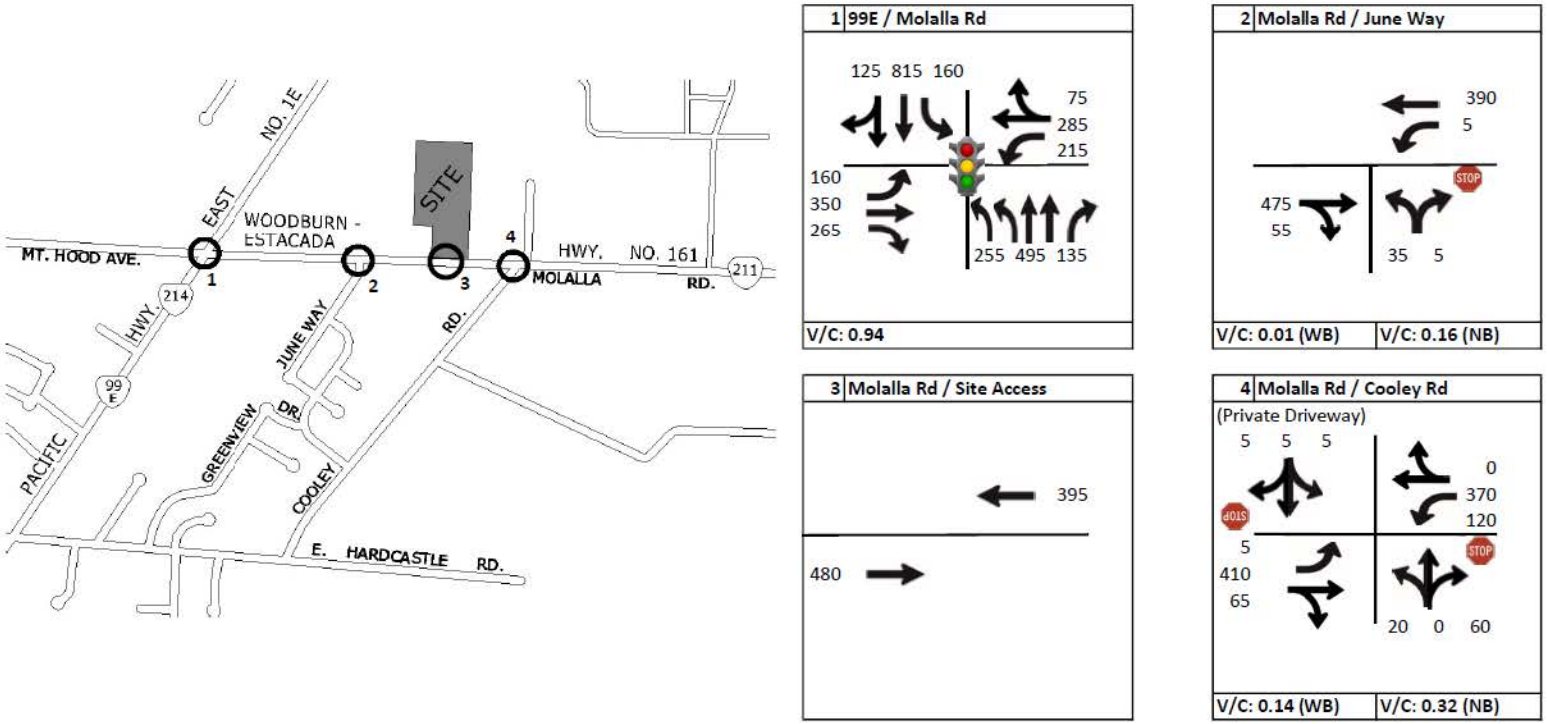


Figure 2: 2019 AM Peak Hour Existing Conditions

Note: Volumes shown represent 30th Highest Volume Values rounded up to nearest increment of 5.



Note: Volumes shown represent 30th Highest Volume Values rounded up to nearest increment of 5.

Figure 3: 2019 PM Peak Hour Existing Conditions

Existing Operating Conditions

Existing traffic operations at the study intersections were evaluated for the AM and PM peak hours using 30th highest hour volumes based on the Oregon DOT Analysis Procedure's Manual methodology. The estimated V/C ratio of each study intersection is shown in **Table 6** and is based on the 2000 Highway Capacity Manual[1] methodology for signalized intersections and 2016 Highway Capacity Manual methodology[2] for unsignalized intersections. **Appendix C** provides detailed reports summarizing these results. **Appendix D** provides information on how 30th highest hour volumes were developed for analysis.

All study intersections meet existing mobility standards, with the exception of N Pacific Hwy (99E)/ Molalla Road (OR 211) in the PM Peak Hour.

Table 6: 2019 Existing Intersection Operations

No.	Intersection	Traffic Control	Operating Standard (Major, Minor)	AM Peak Hour (Major, Minor)	P.M. Peak Hour (Major, Minor)
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	Signal	0.90 V/C	0.77 V/C	***0.94 V/C***
2	Molalla Road (OR 211) / June Way	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.00 V/C, 0.17 V/C	0.01 V/C, 0.16 V/C
3	Molalla Road (OR 211) / Proposed Site Driveway	-	-	-	-
4	Molalla Road (OR 211) / Cooley Road	Unsignalized (Two way stop)	0.95 V/C, 0.95 V/C	0.04 V/C, 0.19 V/C	0.14 V/C, 0.32 V/C

V/C = Volume-to-Capacity Ratio of Worst Movement
LOS = Level of Service of Worst Movement
Locations exceeding mobility standards are shown with ***bold/italicized***

Crash Analysis

The five most recent years of crash records (Jan 1, 2013- Dec 31, 2017) for the study area were obtained from Oregon Department of Transportation (ODOT's) online database. A copy of these records is provided in **Appendix H**. Crashes recorded within approximately 250 feet of the study intersection are grouped with that intersection for analysis purposes.

During the five years evaluated, seventy-seven (77) crashes occurred at the study area intersections. The study intersection with the highest frequency of crashes over the five year period was N Pacific Hwy

[1] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000

[2] *Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis*, Transportation Research Board, Washington DC, 2016.

(99E) / Molalla Road (OR 211) with a total of seventy-two (72) crashes. The most common crash type at the N Pacific Hwy (99E) / Molalla Road (OR 211) intersection was rear-end collisions. There were no fatal crashes recorded at the study intersections, however there was one Injury A (incapacitating injury) crash recorded. There are three (3) recorded crashes at the intersection of Molalla Road (OR 211) / June Way and two (2) recorded at Molalla Road (OR 211) / Cooley Road.

Table 7: Number of Crashes at Study Intersections

Study Intersection	2013	2014	2015	2016	2017	Grand Total
N Pacific Hwy (99E) / Molalla Road (OR 211)	16	12	13	18	13	72
Molalla Road (OR 211) / June Way	1	-	1	1	-	3
Molalla Road (OR 211) / Cooley Road	2	-	-	-	-	2
Total	**19**	**12**	**14**	**19**	**13**	**77**

Table 8: Crash Type and Severity by Study Intersection (2013 - 2017)

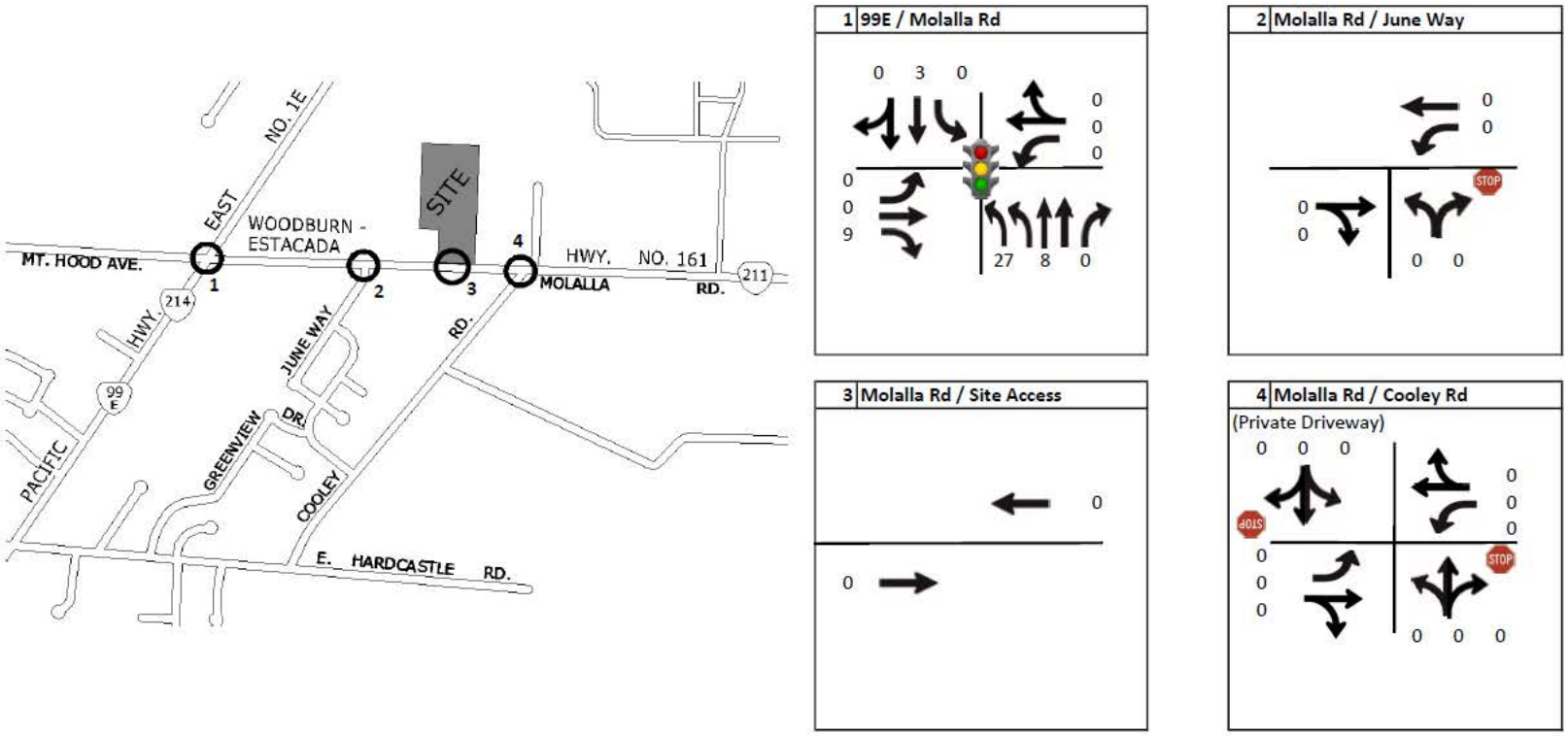
Collision Type	N Pacific Hwy (99E) / Molalla Road (OR 211)	Molalla Road (OR 211) / June Way	Molalla Road (OR 211) / Cooley Road
Angle	2 (Injury C)	-	1 (Injury C)
Backing	2 (1 Injury C, 1 PDO)	-	-
Fixed Object or Other-object	3 (1 Injury A, 2 PDO)	-	1 (Injury B)
Head-On	2 (1 Injury B, 1 PDO)	-	-
Non-Collision	1 (PDO)	-	-
Pedestrian	3 (2 Injury B, 1 Injury C)	-	-
Rear-End	49 (2 Injury B, 23 Injury C, 24 PDO)	2 (Injury C)	-
Sideswipe-Overtaking	3 (PDO)	-	-
Turning Movement	8 (1 Injury B, 2 Injury C, 4 PDO)	1 (Injury B)	-
Total	**72**	**3**	**2**

Note: PDO = Property Damage Only crash

CHAPTER 3: BACKGROUND TRAFFIC

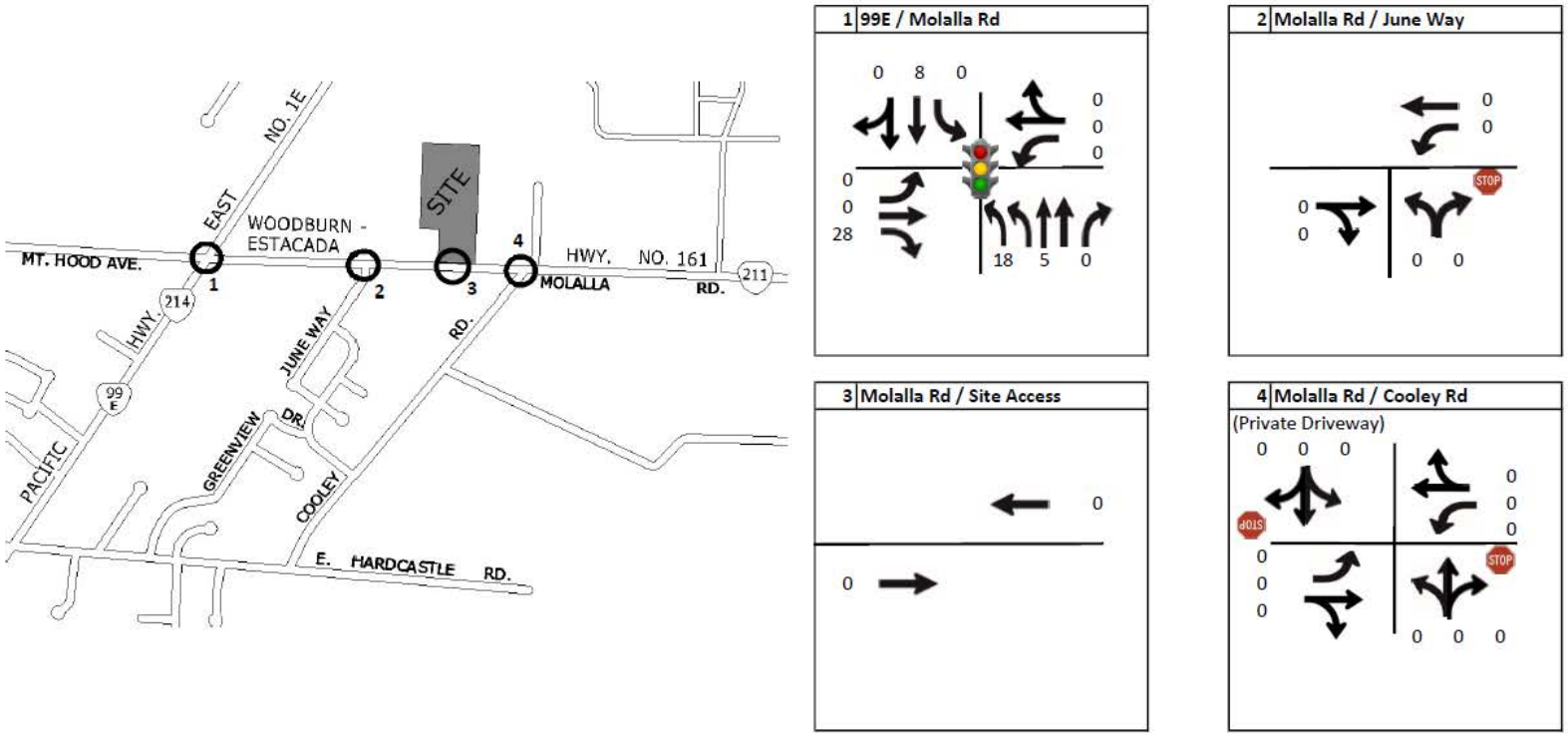
Construction of the proposed Molalla Road apartments is expected to be completed in 2021. To account for traffic growth from 2019 to 2021, a 1.4% growth rate was used to forecast the future background traffic volumes on roads within the study area. Growth rate calculations are provided in **Appendix D**.

The City of Woodburn identified that the Pacific Valley Apartments should be treated as "in-process", with the developments trips included in the background and total traffic volumes. The Pacific Valley Apartments study identified trips traveling through one of the study intersections for the Molalla Road Apartments; North Pacific Highway (OR99E)/Molalla Road. These in-process trips are identified in **Figures 4 and 5**. Documentation for the Pacific Valley Apartments is included in **Appendix E**. Background traffic volumes are show in **Figures 6 and 7**.



Note: Volumes shown are based on the Woodburn Apartments TIA, dated May 6th, 2019, by Engineer of Record Todd Mobley, PE

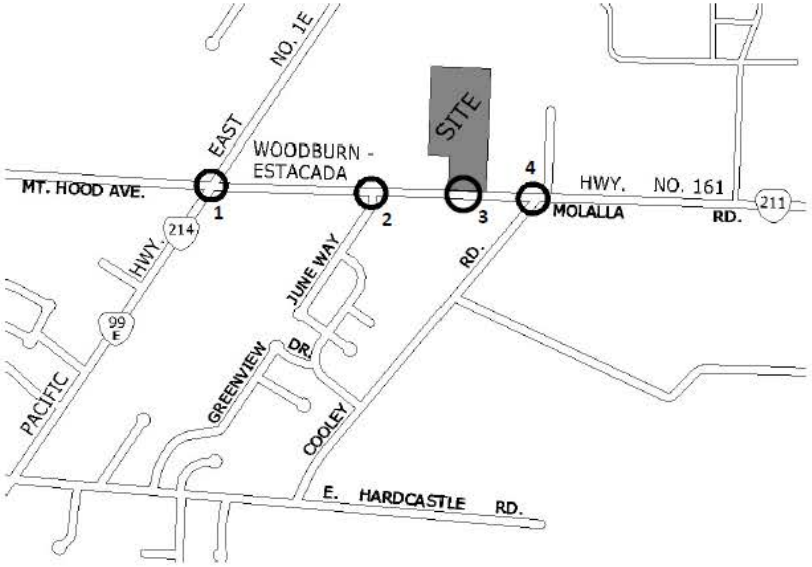
Figure 4: AM In-Process Development Trips

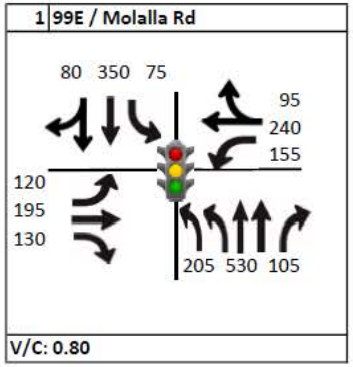


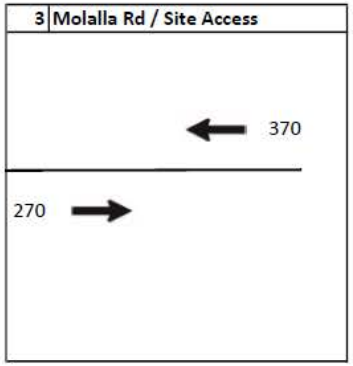
Note: Volumes shown are based on the Woodburn Apartments TIA, dated May 6th, 2019, by Engineer of Record Todd Mobley, PE

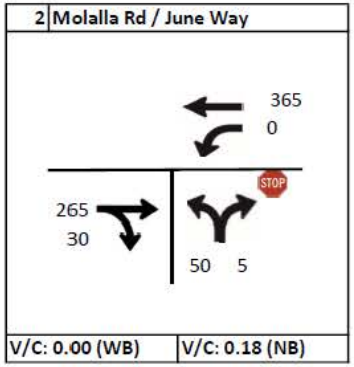
Figure 5: PM In-Process Development Trips

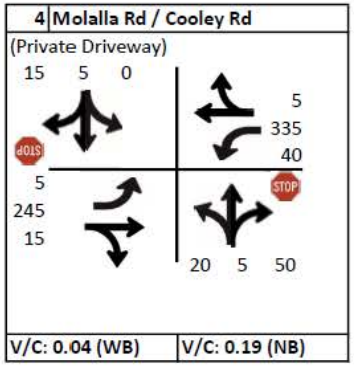
Figure 6: 2021 AM Peak Hour Background Conditions



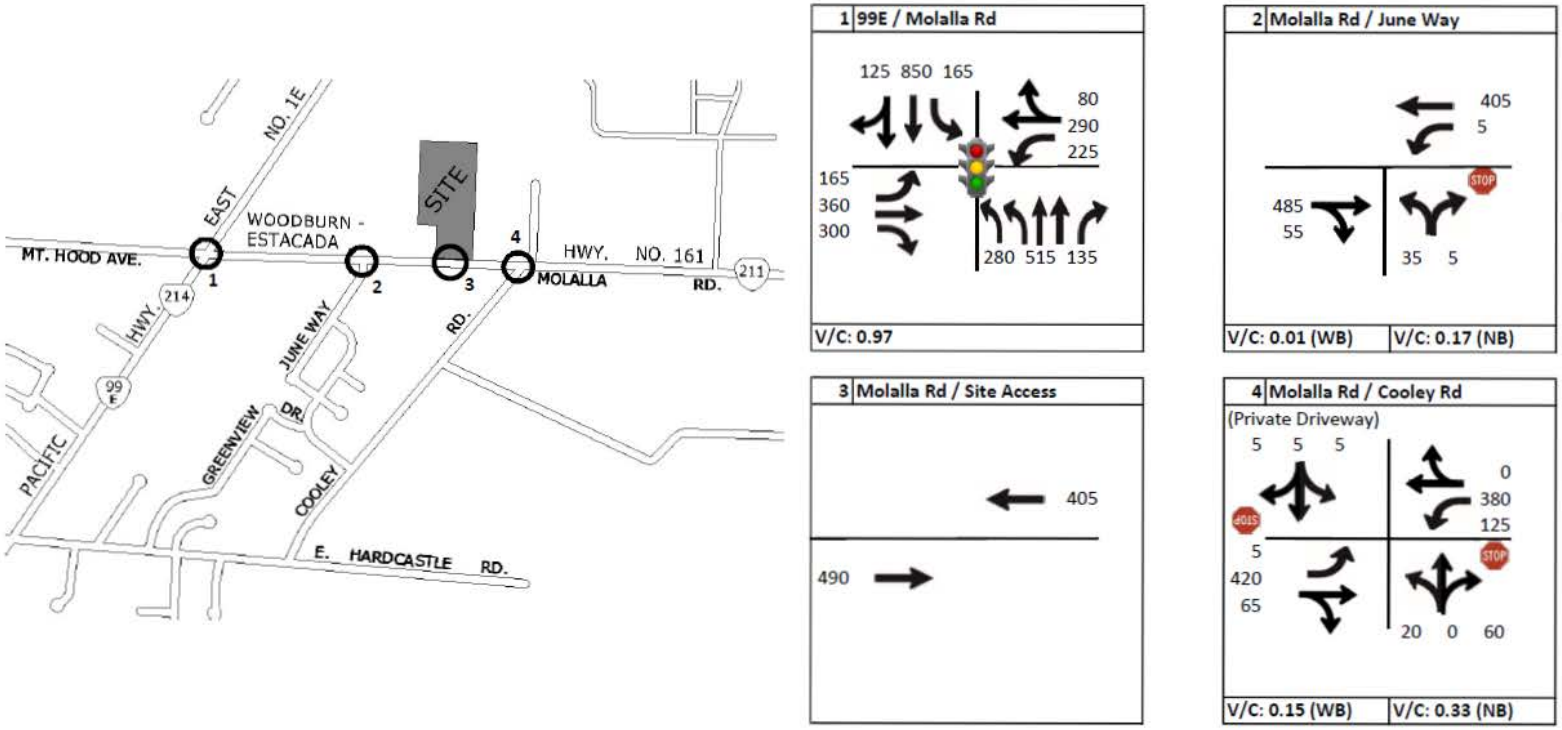








Note: Volumes shown are rounded up to nearest increment of 5.



Note: Volumes shown are rounded up to nearest increment of 5.

Figure 7: 2021 PM Peak Hour Background Conditions

Background Intersection Operations

Background traffic operations at the study intersections were determined based on the 2016 Highway Capacity Manual methodology[3] for unsignalized intersections and the 2000 Highway Capacity Manual methodology for signalized intersections[4]. The estimated V/C ratio of each study intersection is shown in **Table 9**. **Appendix F** provides detailed reports summarizing these results.

Table 9 lists intersection operations after accounting for the assumed traffic volume growth. All study intersections meet mobility standards, with the exception of N Pacific Hwy (99E)/ Molalla Road (OR 211) in the PM Peak Hour.

Table 9: 2021 Background Intersection Operations

No.	Intersection	Traffic Control	Operating Standard (Major, Minor)	AM Peak Hour (Major, Minor)	P.M. Peak Hour (Major, Minor)
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	Signal	0.90 V/C	0.80 V/C	***0.97 V/C***
2	Molalla Road (OR 211) / June Way	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.00 V/C, 0.18 V/C	0.01 V/C, 0.17 V/C
3	Molalla Road (OR 211) / Proposed Site Driveway	-	-	-	-
4	Molalla Road (OR 211) / Cooley Road	Unsignalized (Two way stop)	0.95 V/C, 0.95 V/C	0.04 V/C, 0.19 V/C	0.15 V/C, 0.33 V/C

V/C = Volume-to-Capacity Ratio of Worst Movement
LOS = Level of Service of Worst Movement
Locations exceeding mobility standards are shown with ***bold/italicized***

[3] *Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis,* Transportation Research Board, Washington DC, 2016.

[4] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2010.

CHAPTER 4: PROJECT IMPACTS

This chapter reviews the impacts that the proposed 231 unit apartment complex would have on the study area transportation system. The focus of the impact analysis is on the following study intersection:

1. N Pacific Hwy (99E) / Molalla Road (OR 211)
2. Molalla Road (OR 211) / June Way
3. Molalla Road (OR 211) / Proposed Site Driveway
4. Molalla Road (OR 211) / Cooley Road

Trip Generation

Trip generation is used to estimate the number of vehicle trips added to the roadway network by a development during a specified period. In this case, the AM and PM peak hour periods are studied. Trip generation estimates are established data and methodology provided by the Institute of Transportation Engineers (ITE).[5] **Table 10** lists the peak hour vehicle trip generation estimates for this development.

Table 10: Molalla Road Apartments Trip Generation Summary

Land Use (ITE Codes)	Dwelling Units	Time Period	Trip Generation Rate	Peak Hour Trips		
				In	Out	Total
Multi-Family Mid-Rise (221)	231	AM Peak	Equation	20	58	78
TOTAL AM PEAK HOUR				**20**	**58**	**78**
Multi-Family Mid-Rise (221)	231	PM Peak	Equation	61	38	99
TOTAL PM PEAK HOUR				**61**	**38**	**99**

[5] *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

Trip Distribution

Trip distribution provides an estimation of where trips from the development originate and end on the study area network. This is represented as percentages where large portions of the trips generated enter and exit the project study area. Trip distribution patterns are calculated based on a combination of existing count data and recommendations from the City and ODOT. The trip distribution percentages are shown in **Figure 8** and resulting site distributed trips are summarized in **Figure 9 and Figure 10.**

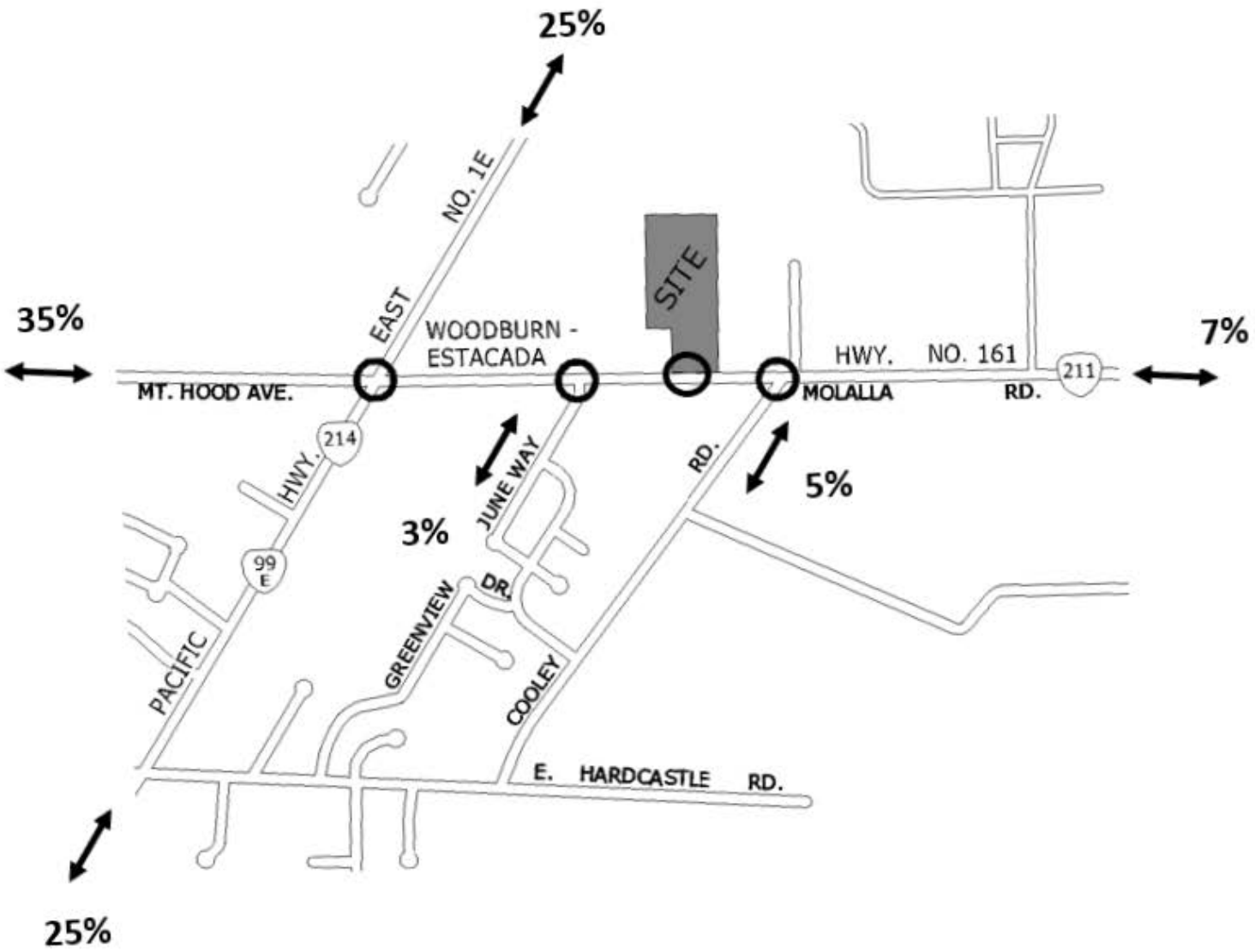


Figure 8: Trip Distribution

Figure 9: AM Peak Hour Site Generated Volumes

Figure 10: PM Peak Hour Site Generated Volumes

Future Traffic Volumes with the Proposed Development

The estimated trips associated with the proposed development were added to the background volumes to estimate the total traffic scenario traffic volumes. **Figure 11 and Figure 12** show the 2021 total traffic volumes used for analysis.

Figure 11: 2021 AM Peak Hour Total Traffic Volumes

Figure 12: 2021 PM Peak Hour Total Traffic Conditions

Table 11 lists the study intersection total traffic operating conditions for the AM and PM peak hours. Traffic operations at the study intersections were determined for the peak hours based on the 2016 Highway Capacity Manual methodology[6] for unsignalized intersections and the 2000 Highway Capacity Manual methodology for signalized intersections[7]. The estimated V/C ratio of each study intersection is shown in **Table 11. Appendix F** provides detailed reports for the operational results.

Based on the operational analysis, all study intersections will function within their applicable mobility standards with the exception of N Pacific Hwy (OR 99E) at Molalla Road (OR 211), which exceeds target mobility standards during the P.M. Peak Hour scenario.

Table 11: 2021 Total Intersection Operations (with Project)

No.	Intersection	Traffic Control	Operating Standard (Major, Minor)	AM Peak Hour (Major, Minor)	P.M. Peak Hour (Major, Minor)
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	Signal	0.90 V/C	0.84 V/C	***1.00 V/C***
2	Molalla Road (OR 211) / June Way	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.00 V/C, 0.20 V/C	0.01 V/C, 0.20 V/C
3	Molalla Road (OR 211) / Proposed Site Driveway	Unsignalized (Two way stop)	0.95 V/C, 1.0 V/C	0.02 V/C, 0.10 V/C	0.06 V/C, 0.07 V/C
4	Molalla Road (OR 211) / Cooley Road	Unsignalized (Two way stop)	0.95 V/C, 0.95 V/C	0.04 V/C, 0.20 V/C	0.15 V/C, 0.37 V/C

V/C = Volume-to-Capacity Ratio of Worst Movement
LOS = Level of Service of Worst Movement
Locations exceeding mobility standards are shown with ***bold/italicized***

Queuing Analysis

A queuing analysis is requested by ODOT for any intersection with a V/C that exceeds 0.70. **Table 12** provides queuing analysis for N Pacific Hwy (99E)/Molalla Road (OR 211) using SimTraffic calibrated per the ODOT Analysis and Procedures Manual Version 1. Both the northbound lefts and westbound lefts exceed available storage, however, these movements do not serve trips to or from the proposed site.

[6] *Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis*, Transportation Research Board, Washington DC, 2016.

[7] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2010.

Table 12: N Pacific Hwy (99E) / Molalla Road (OR 211) Queuing Analysis

Movement	Available Storage	95th Queue Length (ft)					
		2019 Existing Conditions		2021 Background Conditions		2021 Total Conditions	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
NB Left	350	***380***	***370***	***375***	***385***	***375***	***370***
NB Thru	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000
NB Right	230	<20	<20	<20	<20	<20	<20
SB Left	>1,000	420	410	430	400	410	425
SB Thru/Right	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000
EB Left	900	375	445	430	410	435	480
EB Thru	>1,000	865	880	895	850	850	850
EB Right	900	<20	235	235	215	130	255
WB Left	300	***375***	***385***	***410***	***340***	***350***	265
WB Thru/Right	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000

Values are rounded up to the nearest increment of 5 feet.
Locations exceeding mobility standards are shown with ***bold/italicized***

Site Entrance Right-Turn Lane Evaluation

Molalla Road at the proposed site approach was evaluated for a dedicated right-turn lane using criteria from Section 12.2 of the ODOT Analysis Procedures Manual (AMP) Version 2. The provided criteria evaluates the need for a right turn lane based on volumes, crash experience, and special cases. A right-turn lane is not recommended based on the following criteria.

Vehicular Volumes

The vehicular volume criteria looks at the intersecting volume of the roadway and the proposed driveway. The PM Peak hour represents the highest use case, with seven westbound right turning vehicles entering the site (as opposed to 2 in the AM peak hour). The design hourly volume for the westbound approach (including right turn movements) is 412 for the PM Peak hour. Using the Exhibit 12-2 from the ODOT APM, the location does not meet warrants for a dedicated right turn lane at the entrance.

Crash Experience

The five most recent years of crash records (Jan 1, 2013- Dec 31, 2017) for the study area were obtained from Oregon Department of Transportation (ODOT's) online database. A copy of these records is provided in **Appendix H**.

Two crashes are recorded along the frontage of the proposed site. An Injury A, head-on collision was recorded on June 19th, 2014, at 5:24 PM. The notes from the crash record indicate the driver was operating the vehicle while drowsy/fatigued/asleep and driving with a revoked/suspended license. The driver of the vehicle departed from their travel lane, resulting in the crash. This crash appears to be the result of driver behavior/error.

A second crash was recorded September 15th, 2016, at 4:24 PM, and is documented as a property damage only, fixed/other-object crash. No additional details are provided in the crash data base.

Right-turn lanes can be used to mitigate rear-end crashes. No rear-end crashes are recorded along the frontage of the property. A right-turn lane is not recommended based on crash experience.

Special Cases

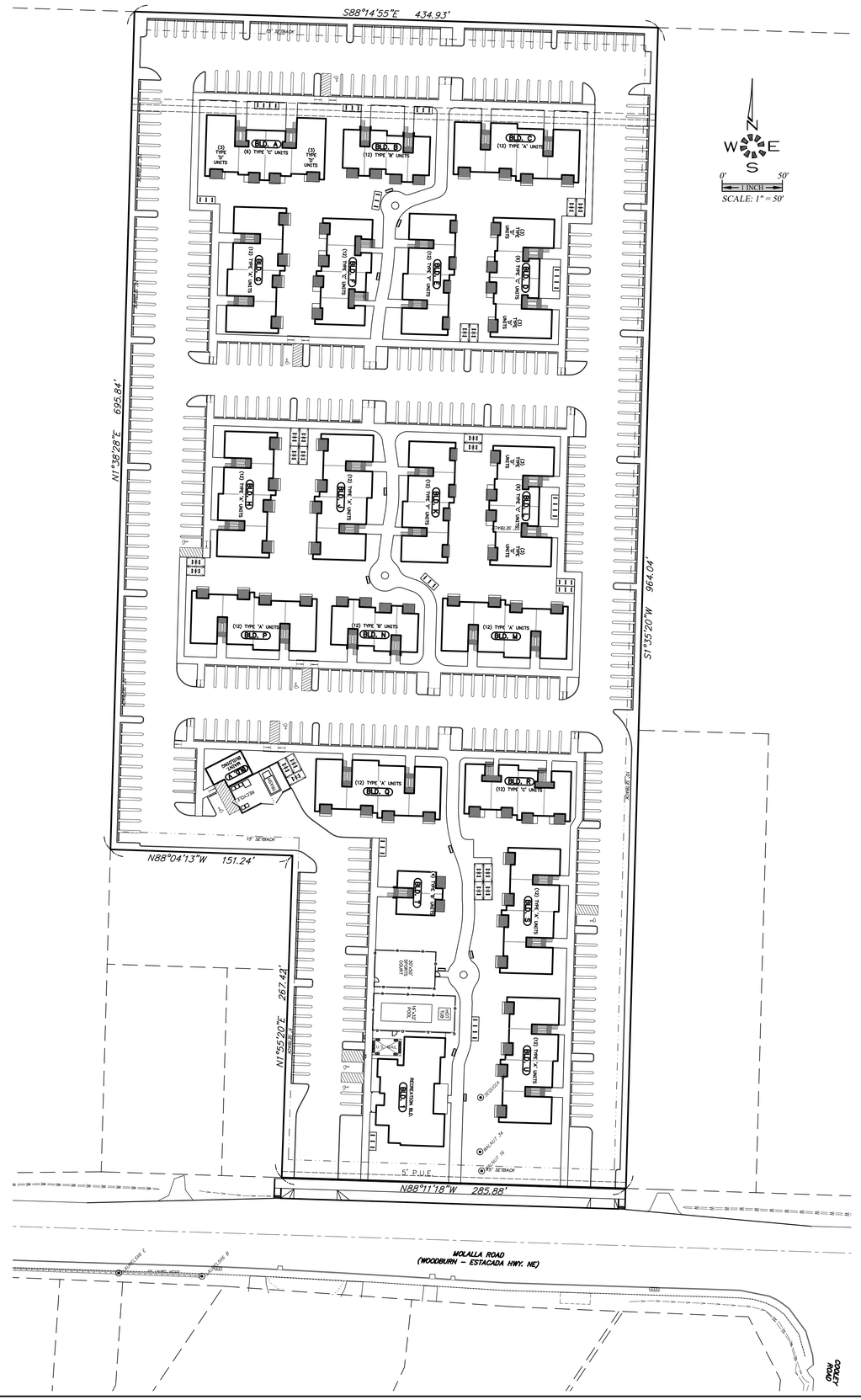
The proposed access is not located near any passing lanes or railroad crossings. The proposed access is located on a straight horizontal alignment of roadway. It is not currently recommended that a right turn lane be installed based on special cases criteria.

Key Findings

The key traffic impact findings associated with the proposed development include:

- The proposed development would generate 78 (20 in, 58 out) AM peak hour trips and 99 (61 in, 38 out) PM peak hour vehicle trips.
- All study intersections are expected to operate within mobility standards with the addition of the proposed site, with the exception of N Pacific Hwy (99E) / Molalla Road (OR 211). This location exceeds the target mobility standard during the PM Peak hour under the existing, background, and total (with project) analysis scenarios.

APPENDIX A: PROPOSED SITE PLAN



Owner :

IVAN AND ELENA SMERIKOV

22091 300th ST. SE
ERSKINE, MN 56535
PHONE: (503) 655-7933

Owner / Developer:

I AND E CONST.

9550 SE CLACKAMAS RD.
CLACKAMAS, OREGON 97015
PHONE: (503) 655-7933

WOODBURN VICINITY MAP

WOODBURN EASTSIDE APARTMENTS

SEC. 09, T. 5 S., R. 1 W., W.M.
CITY OF WOODBURN
MARION COUNTY, OREGON

SHEET INDEX

SDR1 - COVER SHEET
SDR2 - EXISTING CONDITIONS PLAN
SDR3 - ANNEXATION PLAN
SDR4 - PRELIMINARY SITE PLAN
SDR5 - PRELIMINARY SITE PLAN
SDR6 - SITE PLAN DETAILS
SDR7 - PRELIMINARY OPEN SPACE PLAN
SDR8 - PRELIMINARY PHOTOMETRIC PLAN
SDR9 - PRELIMINARY DRAINAGE PLAN
SDR10 - PRELIMINARY SANITARY SEWER PLAN
SDR11 - PRELIMINARY DOMESTIC WATER AND FIRE SERVICE PLAN

L1.1 SCHEMATIC LANDSCAPE PLAN
L1.2 SCHEMATIC LANDSCAPE PLAN
L1.3 LANDSCAPE NOTES & DETAILS

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

COVER SHEET

WOODBURN EASTSIDE APARTMENTS

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

6855p SDR1-COV

Design: M.D.G.
Drawn: C.D.S.
Checked: J.C.B.
Date: JUNE 2019
Scale: AS SHOWN

MARK D. GRENZ
96 54
JULY 14, 1978

EXPIRES: 06-30-2019

JOB # 6855

SDR1

J:\68xx\6855-Woodburn Eastside\Dwg v18\6855p.dwg, SDR1-COV, 10/24/2019 11:09:57 AM, CSchreiner

APPENDIX B: TRAFFIC COUNTS

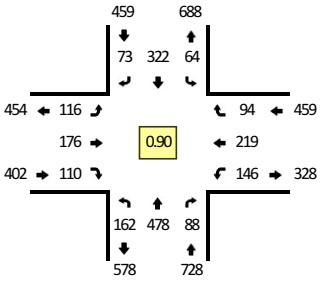
Type of peak hour being reported: Intersection Peak

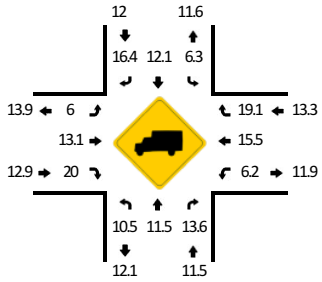
Method for determining peak hour: Total Entering Volume

LOCATION: OR-99E -- Molalla Rd
CITY/STATE: Marion, OR

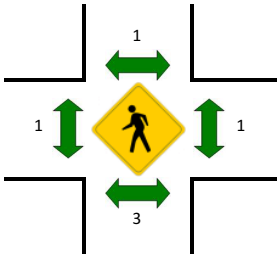
QC JOB #: 15064701
DATE: Thu, Sep 12 2019

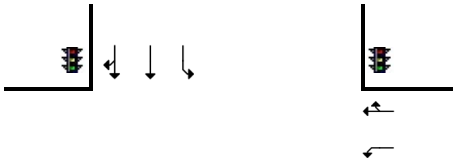
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

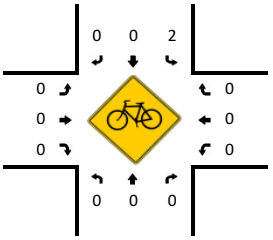


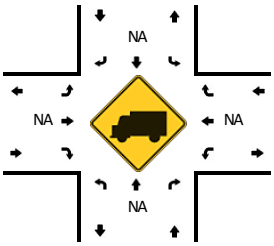


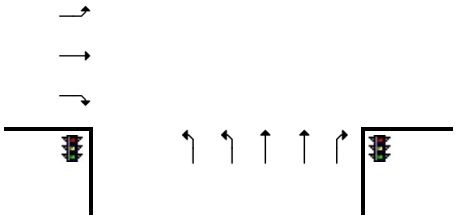
Quality Counts
DATA THAT DRIVES COMMUNITIES

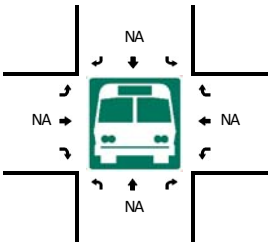












5-Min Count Period Beginning At	OR-99E (Northbound)				OR-99E (Southbound)				Molalla Rd (Eastbound)				Molalla Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	8	32	7	0	3	9	5	0	9	13	2	0	2	10	9	0	109	
6:05 AM	2	49	6	0	1	13	3	0	6	14	1	0	2	10	7	0	114	
6:10 AM	4	44	9	0	2	11	1	0	10	16	1	0	2	11	2	0	113	
6:15 AM	4	49	6	0	3	19	4	0	10	13	1	0	9	10	6	0	134	
6:20 AM	5	48	9	0	2	17	5	0	6	17	5	0	6	14	6	0	140	
6:25 AM	5	38	9	0	5	11	4	0	8	25	5	0	7	12	5	0	134	
6:30 AM	5	37	9	0	6	17	7	0	9	16	4	0	5	12	8	0	135	
6:35 AM	5	53	10	0	2	20	5	0	8	9	2	0	6	19	6	0	145	
6:40 AM	6	69	10	0	3	29	8	0	7	29	7	0	5	18	10	0	201	
6:45 AM	6	41	8	0	6	24	6	0	15	18	3	0	9	10	7	0	153	
6:50 AM	13	55	7	0	3	22	3	0	19	11	3	0	5	14	10	0	165	
6:55 AM	9	34	10	0	6	15	4	0	12	19	8	0	15	13	7	0	152	1695
7:00 AM	8	53	10	0	5	33	8	0	11	10	5	0	11	11	4	0	169	1755
7:05 AM	9	40	10	0	6	20	5	0	5	19	12	0	5	9	3	0	143	1784
7:10 AM	12	39	8	0	8	27	11	0	7	8	8	0	12	20	3	0	163	1834
7:15 AM	7	36	13	0	4	21	7	0	7	14	6	0	19	21	16	0	171	1871
7:20 AM	10	47	5	0	8	24	2	0	13	15	1	0	10	17	9	0	161	1892
7:25 AM	20	45	10	0	4	23	9	0	10	14	4	0	15	17	14	0	185	1943
7:30 AM	11	40	9	0	2	20	7	0	9	12	11	0	7	20	6	0	154	1962
7:35 AM	18	37	7	0	6	29	7	0	13	11	9	0	14	17	5	0	173	1990
7:40 AM	12	41	8	0	3	27	3	0	11	10	5	0	13	17	6	0	156	1945
7:45 AM	18	53	8	0	8	29	7	0	7	19	15	0	13	24	6	0	207	1999
7:50 AM	14	38	8	0	2	31	10	0	12	24	11	0	15	19	6	0	190	2024
7:55 AM	16	30	3	0	9	30	1	0	11	18	19	0	7	17	8	0	169	2041
8:00 AM	14	37	4	0	6	39	4	0	6	13	7	0	11	22	6	0	169	2041
8:05 AM	10	35	5	0	4	22	5	0	10	18	14	0	10	8	9	0	150	2048
8:10 AM	13	27	5	0	4	28	5	0	4	8	5	0	11	14	3	0	127	2012
8:15 AM	8	32	5	0	5	18	6	0	12	11	18	0	6	12	4	0	137	1978
8:20 AM	19	28	10	0	4	27	11	0	7	17	5	0	6	13	10	0	157	1974
8:25 AM	12	33	7	1	3	18	11	0	6	16	5	0	6	13	3	0	134	1923
8:30 AM	6	27	6	0	2	28	10	0	11	11	10	0	8	18	8	0	145	1914
8:35 AM	21	23	6	0	9	25	4	0	6	17	11	0	15	11	9	0	157	1898
8:40 AM	10	25	6	0	8	18	10	0	10	18	14	0	8	12	8	0	147	1889
8:45 AM	13	33	8	0	5	24	4	0	8	12	16	0	8	11	8	0	150	1832
8:50 AM	13	30	4	0	8	17	8	0	7	5	11	0	12	13	9	0	137	1779
8:55 AM	9	26	11	0	10	20	11	0	10	15	8	0	6	9	2	0	137	1747

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	192	484	76	0	76	360	72	0	120	244	180	0	140	240	80	0	2264
Heavy Trucks	32	60	20		0	24	8		8	12	28		12	36	4		244
Pedestrians		8				0				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/18/2019 2:50 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

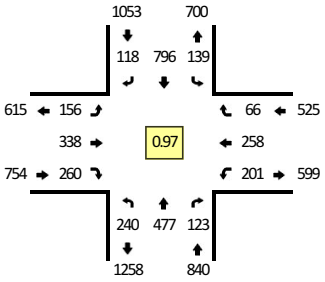
Type of peak hour being reported: Intersection Peak

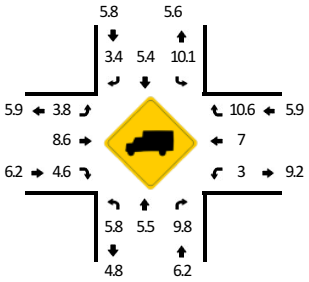
Method for determining peak hour: Total Entering Volume

LOCATION: OR-99E -- Molalla Rd
CITY/STATE: Marion, OR

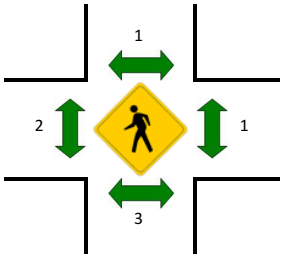
QC JOB #: 15064702
DATE: Thu, Sep 12 2019

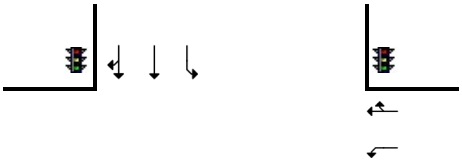
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

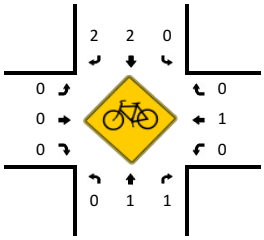


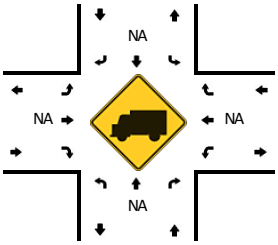


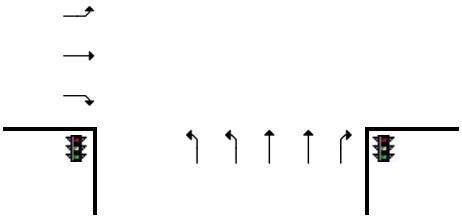
Quality Counts
DATA THAT DRIVES COMMUNITIES

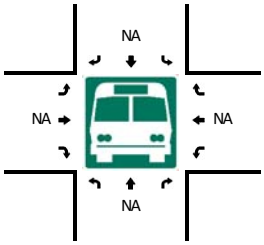












5-Min Count Period Beginning At	OR-99E (Northbound)				OR-99E (Southbound)				Molalla Rd (Eastbound)				Molalla Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	13	29	14	0	10	37	9	0	18	19	15	0	16	11	7	0	198	
3:05 PM	10	28	9	0	10	39	9	0	10	25	20	0	18	23	7	0	208	
3:10 PM	22	34	9	0	9	46	8	0	11	28	18	0	15	14	5	0	219	
3:15 PM	13	24	10	0	12	53	13	0	14	13	17	0	17	21	5	0	212	
3:20 PM	12	24	2	0	7	46	5	0	11	33	15	0	17	22	4	0	198	
3:25 PM	24	43	6	0	6	52	16	0	14	20	17	0	7	8	9	0	222	
3:30 PM	14	35	11	0	21	58	21	0	12	13	27	0	13	20	5	0	250	
3:35 PM	20	26	6	0	9	63	6	0	18	23	26	0	25	21	5	0	248	
3:40 PM	30	45	9	0	7	64	14	0	8	30	16	0	11	10	7	0	251	
3:45 PM	21	38	12	0	15	70	14	0	11	20	17	0	16	22	5	0	261	
3:50 PM	11	36	8	0	10	46	9	0	20	25	28	0	25	24	1	0	243	
3:55 PM	31	45	10	0	11	42	3	0	17	29	17	0	10	22	8	0	245	2755
4:00 PM	15	36	12	0	10	85	15	0	10	25	13	0	7	15	4	0	247	2804
4:05 PM	22	46	10	0	18	54	16	0	9	25	25	0	17	24	8	0	274	2870
4:10 PM	18	33	14	0	13	42	6	0	8	27	21	0	12	30	8	0	232	2883
4:15 PM	26	41	12	0	3	68	11	0	11	26	23	0	20	18	6	0	265	2936
4:20 PM	12	40	8	0	14	53	8	0	10	23	17	0	22	25	4	0	236	2974
4:25 PM	21	31	8	0	13	43	14	0	17	35	20	0	18	31	6	0	257	3009
4:30 PM	25	47	6	0	14	74	10	0	7	26	19	0	14	15	6	0	263	3022
4:35 PM	16	44	10	0	18	80	7	1	17	22	21	0	12	22	5	0	275	3049
4:40 PM	20	28	9	0	11	61	8	0	15	30	34	0	24	28	7	0	275	3073
4:45 PM	20	43	12	0	11	59	9	0	13	34	16	0	16	18	8	0	259	3071
4:50 PM	14	45	10	0	14	96	11	0	11	21	11	0	15	15	5	0	268	3096
4:55 PM	20	39	7	0	13	64	3	0	15	36	22	0	18	24	6	0	267	3118
5:00 PM	31	50	10	0	16	52	8	0	12	29	19	0	18	27	6	0	278	3149
5:05 PM	17	27	18	1	9	84	15	0	16	23	29	0	15	14	4	0	272	3147
5:10 PM	13	31	13	0	9	58	13	0	9	14	27	0	26	25	3	0	241	3156
5:15 PM	12	41	10	0	8	50	10	0	14	41	20	0	12	21	5	0	244	3135
5:20 PM	30	51	10	0	2	75	10	0	10	27	22	0	13	18	5	0	273	3172
5:25 PM	20	36	9	0	22	60	10	0	17	14	21	0	19	10	6	0	244	3159
5:30 PM	13	24	4	0	13	45	9	0	15	39	21	0	16	31	6	0	236	3132
5:35 PM	33	44	7	0	6	56	15	0	7	21	19	0	21	18	4	0	251	3108
5:40 PM	12	30	7	0	17	73	16	0	10	21	19	0	14	16	2	0	237	3070
5:45 PM	20	26	4	0	9	46	9	0	14	28	17	0	25	25	4	0	227	3038
5:50 PM	22	32	14	0	11	52	12	0	11	14	18	0	13	8	6	0	213	2983
5:55 PM	19	39	7	0	10	63	9	0	9	17	20	0	15	16	4	0	228	2944

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	272	464	140	4	152	800	104	0	172	352	280	0	204	260	64	0	3268
Heavy Trucks	24	36	4		8	16	0		0	24	16		8	4	8		148
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	1		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/18/2019 2:50 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cooley Rd -- Molalla Rd

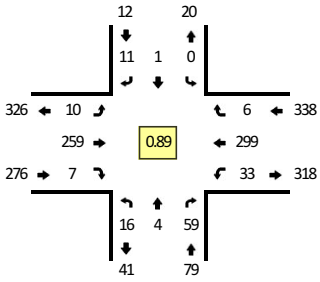
CITY/STATE: Marion, OR

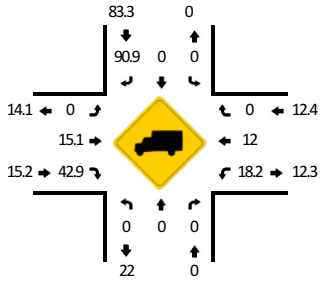
QC JOB #: 15064703

DATE: Thu, Sep 12 2019

Peak-Hour: 6:40 AM -- 7:40 AM

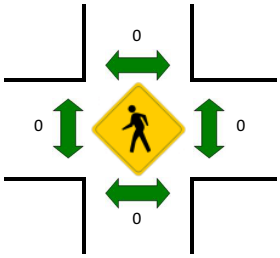
Peak 15-Min: 7:10 AM -- 7:25 AM

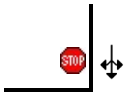


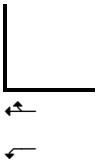


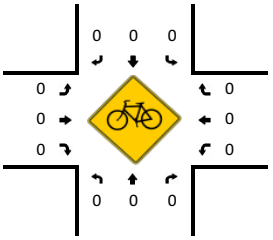
Quality Counts

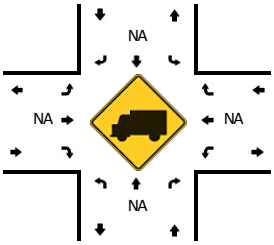
DATA THAT DRIVES COMMUNITIES

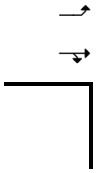


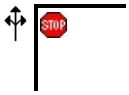


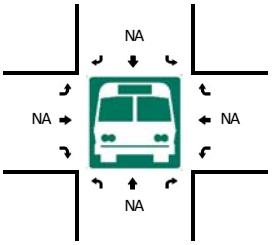












5-Min Count Period Beginning At	Cooley Rd (Northbound)				Cooley Rd (Southbound)				Molalla Rd (Eastbound)				Molalla Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	0	6	0	0	0	0	0	2	16	0	0	1	9	0	0	35	
6:05 AM	0	0	9	0	0	0	2	0	0	14	0	0	0	13	0	0	38	
6:10 AM	3	0	12	0	0	0	1	0	0	20	0	0	4	12	0	0	52	
6:15 AM	1	0	6	0	0	0	1	0	0	24	1	0	0	18	0	0	51	
6:20 AM	0	0	7	0	0	0	1	0	0	29	0	0	3	17	0	0	57	
6:25 AM	1	0	5	0	0	0	0	0	1	25	0	0	4	16	1	0	53	
6:30 AM	2	0	8	0	0	0	0	0	0	29	0	0	0	15	1	0	55	
6:35 AM	0	0	9	0	0	0	1	0	1	19	0	0	1	23	1	0	55	
6:40 AM	0	0	10	0	0	0	0	0	2	35	0	0	3	24	0	0	74	
6:45 AM	2	1	1	0	0	0	1	0	3	24	0	0	2	26	0	0	60	
6:50 AM	0	2	5	0	0	0	0	0	1	15	0	0	1	20	3	0	47	
6:55 AM	0	0	3	0	0	0	0	0	2	23	1	0	1	22	2	0	54	631
7:00 AM	2	0	6	0	0	0	0	0	1	16	1	0	2	17	1	0	46	642
7:05 AM	0	0	6	0	0	0	0	0	1	22	1	0	3	21	0	0	54	658
7:10 AM	0	1	5	0	0	0	1	0	0	23	1	0	2	30	0	0	63	669
7:15 AM	3	0	2	0	0	0	2	0	0	22	0	0	4	32	0	0	65	683
7:20 AM	1	0	5	0	0	0	4	0	0	22	0	0	6	32	0	0	70	696
7:25 AM	2	0	4	0	0	1	3	0	0	21	2	0	2	25	0	0	60	703
7:30 AM	0	0	9	0	0	0	0	0	0	16	1	0	5	22	0	0	53	701
7:35 AM	6	0	3	0	0	0	0	0	0	20	0	0	2	28	0	0	59	705
7:40 AM	0	0	3	0	0	0	0	0	1	15	0	0	1	29	0	0	49	680
7:45 AM	1	1	2	0	0	0	0	0	0	15	1	0	4	28	0	0	52	672
7:50 AM	2	0	4	0	0	0	1	0	0	17	2	0	1	25	0	0	52	677
7:55 AM	0	0	1	0	0	0	2	0	0	16	2	0	6	18	1	0	46	669
8:00 AM	1	0	1	0	0	0	0	0	1	15	1	0	0	17	0	0	36	659
8:05 AM	0	0	1	0	0	0	0	0	0	14	1	0	0	17	0	0	33	638
8:10 AM	0	0	2	0	0	0	0	0	0	12	2	0	4	14	0	0	34	609
8:15 AM	1	0	2	0	0	0	0	0	0	13	1	0	0	14	0	0	31	575
8:20 AM	1	0	0	0	0	0	0	0	0	16	3	0	5	14	0	0	39	544
8:25 AM	2	0	2	0	0	0	0	0	0	19	1	0	2	20	0	0	46	530
8:30 AM	2	0	2	0	0	0	0	0	0	13	1	0	2	19	0	0	39	516
8:35 AM	2	0	3	0	0	0	0	0	0	17	0	0	1	13	0	0	36	493
8:40 AM	3	0	0	0	0	0	1	0	0	17	0	0	3	9	0	0	33	477
8:45 AM	1	0	2	0	0	0	0	0	0	17	0	0	2	26	0	0	48	473
8:50 AM	0	0	2	0	0	0	2	0	0	11	1	0	2	12	0	0	30	451
8:55 AM	1	0	0	0	0	0	0	0	0	15	3	0	1	19	0	0	39	444

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	4	48	0	0	0	28	0	0	268	4	0	48	376	0	0	792
Heavy Trucks	0	0	0		0	0	28		0	36	0		4	44	0		112
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/18/2019 2:50 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cooley Rd -- Molalla Rd

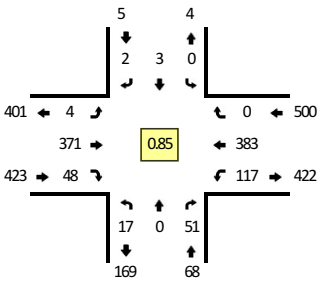
CITY/STATE: Marion, OR

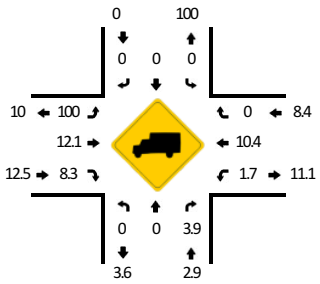
QC JOB #: 15064704

DATE: Thu, Sep 12 2019

Peak-Hour: 3:45 PM -- 4:45 PM

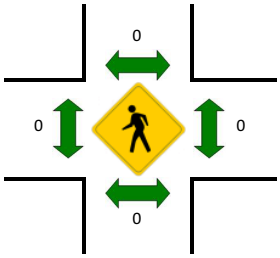
Peak 15-Min: 4:15 PM -- 4:30 PM

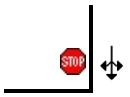


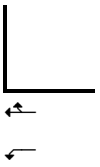


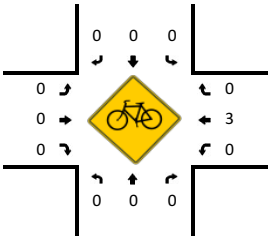
Quality Counts

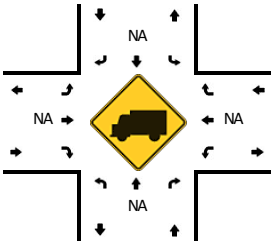
DATA THAT DRIVES COMMUNITIES

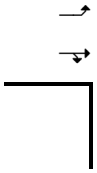


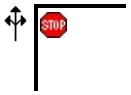


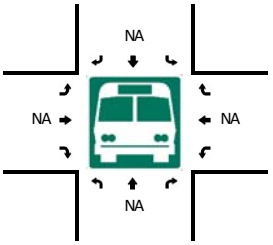












5-Min Count Period Beginning At	Cooley Rd (Northbound)				Cooley Rd (Southbound)				Molalla Rd (Eastbound)				Molalla Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	0	6	0	0	0	0	0	0	31	5	0	4	16	0	0	64	
3:05 PM	2	0	3	0	0	0	1	0	0	25	2	0	4	20	0	0	57	
3:10 PM	0	0	3	0	0	0	0	0	1	23	0	1	9	27	0	0	64	
3:15 PM	0	0	2	0	0	0	0	0	0	33	6	0	3	33	0	0	77	
3:20 PM	1	0	3	0	0	0	0	0	0	23	0	0	4	25	0	0	56	
3:25 PM	0	0	4	0	0	0	0	0	0	21	0	0	2	17	0	0	44	
3:30 PM	0	0	6	0	0	0	0	0	0	27	2	0	4	27	0	0	66	
3:35 PM	2	0	6	0	0	0	1	0	0	28	0	0	5	21	0	0	63	
3:40 PM	0	0	2	0	0	0	0	0	1	40	0	0	8	28	0	0	79	
3:45 PM	0	0	4	0	0	0	0	0	0	32	5	0	6	30	0	0	77	
3:50 PM	1	0	5	0	0	0	0	0	0	23	4	0	8	34	0	0	75	
3:55 PM	1	0	4	0	0	1	0	0	1	29	4	0	9	33	0	0	82	804
4:00 PM	1	0	5	0	0	0	0	0	1	35	2	0	8	23	0	0	75	815
4:05 PM	0	0	7	0	0	0	0	0	0	32	2	0	8	27	0	0	76	834
4:10 PM	3	0	7	0	0	0	0	0	0	28	1	0	9	32	0	0	80	850
4:15 PM	1	0	6	1	0	2	2	0	0	36	3	0	23	48	0	0	122	895
4:20 PM	1	0	1	0	0	0	0	0	0	36	7	0	8	37	0	0	90	929
4:25 PM	2	0	3	0	0	0	0	0	0	32	4	0	10	31	0	0	82	967
4:30 PM	2	0	3	0	0	0	0	0	1	32	5	0	6	23	0	0	72	973
4:35 PM	2	0	5	0	0	0	0	0	0	28	3	0	11	36	0	0	85	995
4:40 PM	2	0	1	0	0	0	0	0	1	28	8	0	11	29	0	0	80	996
4:45 PM	0	0	3	0	0	0	0	0	0	37	3	0	9	23	0	0	75	994
4:50 PM	1	0	8	0	0	0	0	0	1	25	4	0	10	14	0	1	64	983
4:55 PM	0	0	4	0	0	0	0	0	1	32	5	0	5	23	0	0	70	971
5:00 PM	1	0	4	0	0	0	0	0	0	35	8	0	6	29	0	0	83	979
5:05 PM	2	0	8	0	1	0	1	0	0	39	7	0	6	27	0	0	91	994
5:10 PM	0	0	11	0	0	1	1	0	0	24	1	0	7	29	0	0	74	988
5:15 PM	0	0	3	0	0	0	1	0	2	36	1	0	9	26	0	0	78	944
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5:25 PM	1	0	2	0	0	0	0	0	0	21	6	0	6	25	0	0	61	899
5:30 PM	2	0	9	0	0	0	0	0	1	32	5	0	2	28	0	0	79	906
5:35 PM	1	0	6	0	0	2	2	0	0	30	1	0	7	19	0	0	68	889
5:40 PM	2	0	4	0	1	0	1	0	0	23	2	0	3	21	0	0	57	866
5:45 PM	0	0	2	0	0	0	0	0	1	33	0	0	5	31	0	0	72	863
5:50 PM	2	0	4	0	0	0	0	0	0	27	4	0	2	8	0	0	47	846
5:55 PM	4	0	4	0	0	2	1	0	0	13	7	0	6	40	0	0	77	853

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	40	4	0	8	8	0	0	416	56	0	164	464	0	0	1176
Heavy Trucks	0	0	0		0	0	0		0	68	4		0	60	0		132
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/18/2019 2:50 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

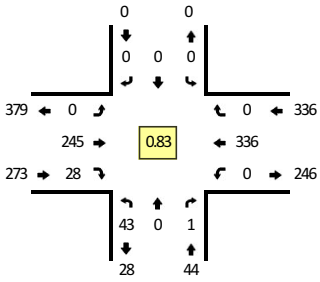
Type of peak hour being reported: Intersection Peak

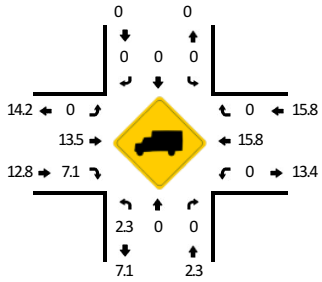
Method for determining peak hour: Total Entering Volume

LOCATION: June Way -- Molalla Rd
CITY/STATE: Marion, OR

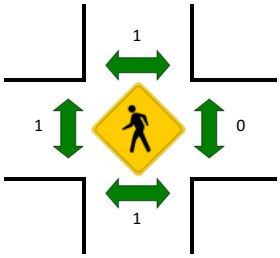
QC JOB #: 15064705
DATE: Thu, Sep 12 2019

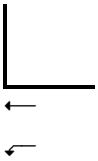
Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:10 AM -- 7:25 AM

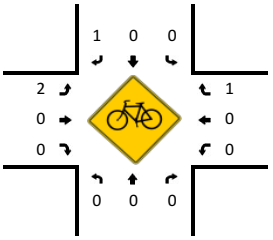


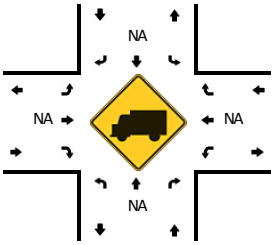


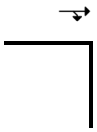
Quality Counts
DATA THAT DRIVES COMMUNITIES

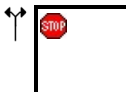


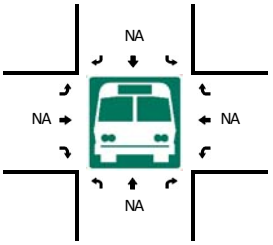












5-Min Count Period Beginning At	June Way (Northbound)				June Way (Southbound)				Molalla Rd (Eastbound)				Molalla Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	0	0	0	0	0	0	0	17	1	0	0	11	0	0	31	
6:05 AM	3	0	0	0	0	0	0	0	0	17	2	0	0	15	0	0	37	
6:10 AM	0	0	0	0	0	0	0	0	0	17	1	0	0	16	0	0	34	
6:15 AM	4	0	1	0	0	0	0	0	0	24	0	0	0	19	0	0	48	
6:20 AM	3	0	0	0	0	0	0	0	0	29	1	0	0	19	0	0	52	
6:25 AM	1	0	0	0	0	0	0	0	0	32	0	0	0	16	0	0	49	
6:30 AM	6	0	1	0	0	0	0	0	0	22	2	0	0	19	0	0	50	
6:35 AM	1	0	1	0	0	0	0	0	0	21	1	0	0	23	0	0	47	
6:40 AM	3	0	1	0	0	0	0	0	0	35	0	0	0	25	0	0	64	
6:45 AM	1	0	1	0	0	0	0	0	0	27	0	0	0	24	0	0	53	
6:50 AM	0	0	0	0	0	0	0	0	0	14	1	0	0	23	0	0	38	
6:55 AM	3	0	0	0	0	0	0	0	0	30	2	0	0	24	0	0	59	562
7:00 AM	2	0	0	0	0	0	0	0	0	14	2	0	0	17	0	0	35	566
7:05 AM	0	0	0	0	0	0	0	0	0	25	2	0	0	17	0	0	44	573
7:10 AM	5	0	0	0	0	0	0	0	0	24	1	0	0	35	0	0	65	604
7:15 AM	5	0	0	0	0	0	0	0	0	23	0	0	0	37	0	0	65	621
7:20 AM	4	0	0	0	0	0	0	0	0	22	1	0	0	39	0	0	66	635
7:25 AM	4	0	0	0	0	0	0	0	0	21	1	0	0	26	0	0	52	638
7:30 AM	4	0	1	0	0	0	0	0	0	15	2	0	0	22	0	0	44	632
7:35 AM	2	0	0	0	0	0	0	0	0	21	2	0	0	37	0	0	62	647
7:40 AM	3	0	0	0	0	0	0	0	0	15	0	0	0	27	0	0	45	628
7:45 AM	2	0	0	0	0	0	0	0	0	16	5	0	0	30	0	0	53	628
7:50 AM	6	0	0	0	0	0	0	0	0	23	7	0	0	25	0	0	61	651
7:55 AM	3	0	0	0	0	0	0	0	0	21	4	0	0	22	0	0	50	642
8:00 AM	5	0	0	0	0	0	0	0	0	19	3	0	0	19	0	0	46	653
8:05 AM	3	0	0	0	0	0	0	0	0	12	2	0	0	16	0	0	33	642
8:10 AM	1	0	0	0	0	0	0	0	0	14	1	0	0	14	0	0	30	607
8:15 AM	0	0	0	0	0	0	0	0	0	14	2	0	0	16	0	0	32	574
8:20 AM	1	0	1	0	0	0	0	0	0	20	2	0	0	15	0	0	39	547
8:25 AM	0	0	0	0	0	0	0	0	0	20	1	0	0	20	0	0	41	536
8:30 AM	2	0	0	0	0	0	0	0	0	12	0	0	0	23	0	0	37	529
8:35 AM	1	0	0	0	0	0	0	0	0	21	1	0	0	15	0	0	38	505
8:40 AM	0	0	0	0	0	0	0	0	0	15	1	0	0	11	0	0	27	487
8:45 AM	3	0	0	0	0	0	0	0	0	16	2	0	0	28	0	0	49	483
8:50 AM	0	0	1	0	0	0	0	0	0	12	2	0	0	15	0	0	30	452
8:55 AM	4	0	0	0	0	0	0	0	0	18	9	0	0	20	0	0	51	453

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	0	0	0	0	0	0	0	0	276	8	0	0	444	0	0	784
Heavy Trucks	0	0	0		0	0	0		0	36	0		0	72	0		108
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/18/2019 2:50 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

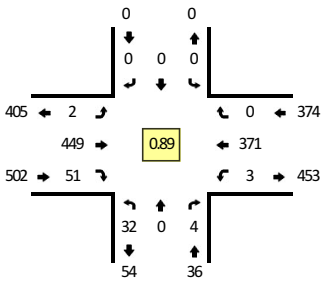
Type of peak hour being reported: Intersection Peak

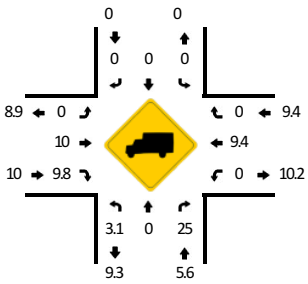
Method for determining peak hour: Total Entering Volume

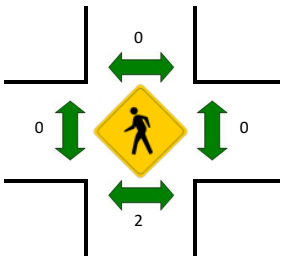
LOCATION: June Way -- Molalla Rd
CITY/STATE: Marion, OR

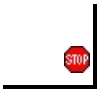
QC JOB #: 15064706
DATE: Thu, Sep 12 2019

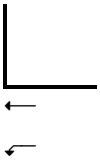
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

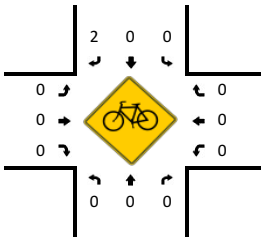


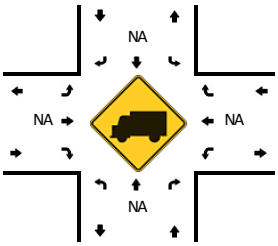


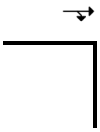


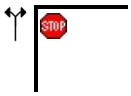


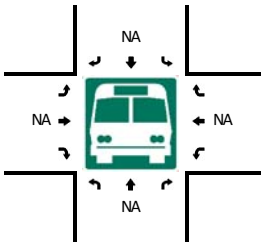












5-Min Count Period Beginning At	June Way (Northbound)				June Way (Southbound)				Molalla Rd (Eastbound)				Molalla Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	0	0	0	0	0	0	0	0	35	5	0	0	16	0	0	58	
3:05 PM	3	0	1	0	0	0	0	0	0	28	2	0	1	21	0	0	56	
3:10 PM	6	0	0	0	0	0	0	0	0	28	2	0	0	27	0	0	63	
3:15 PM	2	0	1	0	0	0	0	0	0	34	5	0	0	32	0	0	74	
3:20 PM	3	0	0	0	0	0	0	0	0	23	6	0	1	29	0	0	62	
3:25 PM	3	0	0	0	0	0	0	0	0	20	5	0	0	15	0	0	43	
3:30 PM	1	0	1	0	0	0	0	0	0	30	4	0	0	27	0	0	63	
3:35 PM	0	0	0	0	0	0	0	0	0	27	3	0	0	25	0	0	55	
3:40 PM	1	0	0	0	0	0	0	0	0	40	4	0	2	20	0	0	67	
3:45 PM	1	0	0	0	0	0	0	0	0	38	1	0	0	37	0	0	77	
3:50 PM	1	0	0	0	0	0	0	0	0	27	6	0	0	36	0	0	70	
3:55 PM	2	0	0	0	0	0	0	0	0	39	4	0	0	31	0	0	76	764
4:00 PM	6	0	0	0	0	0	0	0	0	32	4	0	0	26	0	0	68	774
4:05 PM	1	0	0	0	0	0	0	0	0	36	5	0	0	28	0	0	70	788
4:10 PM	1	0	1	0	0	0	0	0	0	31	7	1	1	33	0	0	75	800
4:15 PM	2	0	0	0	0	0	0	0	0	37	3	0	1	46	0	0	89	815
4:20 PM	1	0	0	0	0	0	0	0	0	44	2	1	0	37	0	0	85	838
4:25 PM	4	0	0	0	0	0	0	0	0	36	5	0	1	37	0	0	83	878
4:30 PM	1	0	1	0	0	0	0	0	0	39	1	0	0	22	0	0	64	879
4:35 PM	2	0	1	0	0	0	0	0	0	29	6	0	0	38	0	0	76	900
4:40 PM	1	0	0	0	0	0	0	0	0	37	4	0	0	32	0	0	74	907
4:45 PM	4	0	0	0	0	0	0	0	0	41	6	0	0	24	0	0	75	905
4:50 PM	6	0	0	0	0	0	0	0	0	29	5	0	0	14	0	0	54	889
4:55 PM	2	0	0	0	0	0	0	0	0	38	4	0	0	23	0	0	67	880
5:00 PM	7	0	1	0	0	0	0	0	0	44	5	0	0	37	0	0	94	906
5:05 PM	1	0	0	0	0	0	0	0	0	44	3	0	0	28	0	0	76	912
5:10 PM	0	0	0	0	0	0	0	0	0	26	5	0	0	29	0	0	60	897
5:15 PM	1	0	1	0	0	0	0	0	0	40	3	0	0	27	0	0	72	880
5:20 PM	2	0	0	0	0	0	0	0	0	35	4	0	0	20	0	0	61	856
5:25 PM	3	0	0	0	0	0	0	0	0	30	4	0	0	24	0	0	61	834
5:30 PM	2	0	0	0	0	0	0	0	0	36	6	0	0	34	0	0	78	848
5:35 PM	5	0	0	0	0	0	0	0	0	30	3	0	0	21	0	0	59	831
5:40 PM	3	0	0	0	0	0	0	0	0	25	2	0	0	23	0	0	53	810
5:45 PM	1	0	0	0	0	0	0	0	0	33	2	0	0	33	0	0	69	804
5:50 PM	3	0	0	0	0	0	0	0	0	33	5	0	0	10	0	0	51	801
5:55 PM	6	0	0	0	0	0	0	0	0	20	6	0	0	40	0	0	72	806

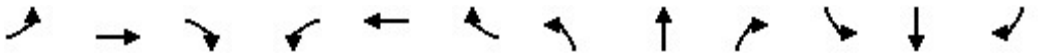
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	0	0	0	0	0	0	0	0	468	40	4	8	480	0	0	1028
Heavy Trucks	0	0	0		0	0	0		0	64	4		0	60	0		128
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/18/2019 2:50 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

APPENDIX C:
SYNCHRO REPORTS – 2019 EXISTING AM + PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	190	115	150	235	95	170	510	100	70	340	80
Future Volume (vph)	120	190	115	150	235	95	170	510	100	70	340	80
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
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	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	0.96		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)	1471	1549	1298	1471	1476		2906	2995	1311	1484	2877	
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)	1471	1549	1298	1471	1476		2906	2995	1311	1484	2877	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	211	128	167	261	106	189	567	111	78	378	89
RTOR Reduction (vph)	0	0	100	0	14	0	0	0	76	0	20	0
Lane Group Flow (vph)	133	211	28	167	353	0	189	567	35	78	447	0
Confl. Peds. (#/hr)	1		3	3		1	1		1	1		1
Heavy Vehicles (%)	13%	13%	13%	13%	13%	13%	11%	11%	11%	12%	12%	12%
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)	11.7	19.8	19.8	13.9	22.0		10.8	28.0	28.0	8.3	25.5	
Effective Green, g (s)	11.7	19.8	19.8	13.9	22.0		10.8	28.0	28.0	8.3	25.5	
Actuated g/C Ratio	0.13	0.22	0.22	0.15	0.24		0.12	0.31	0.31	0.09	0.28	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	191	340	285	227	360		348	931	407	136	815	
v/s Ratio Prot	0.09	0.14		c0.11	c0.24		c0.07	c0.19		0.05	0.16	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.70	0.62	0.10	0.74	0.98		0.54	0.61	0.08	0.57	0.55	
Uniform Delay, d1	37.5	31.7	28.0	36.3	33.8		37.3	26.3	21.9	39.2	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	10.5	3.6	0.2	11.7	42.4		1.7	1.7	0.2	5.7	1.4	
Delay (s)	48.0	35.3	28.1	48.0	76.2		39.0	28.1	22.1	44.9	28.8	
Level of Service	D	D	C	D	E		D	C	C	D	C	
Approach Delay (s)		36.9			67.4			29.7			31.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 1: OR 99E & Molalla Rd

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)	353	864	13	324	2026	306	359	1572	1571	16	389	1811
Average Queue (ft)	337	838	0	276	2009	296	355	1421	1184	1	385	1348
95th Queue (ft)	372	864	7	373	2111	378	374	1938	2169	13	418	2189
Link Distance (ft)		834			2018			1552	1552			1782
Upstream Blk Time (%)		100			92			77	60			37
Queuing Penalty (veh)		0			369			0	0			0
Storage Bay Dist (ft)	350		550	300		350	350			230	380	
Storage Blk Time (%)	77	30		76	51	40	99				95	0
Queuing Penalty (veh)	235	74		244	78	101	252				161	0

Intersection: 1: OR 99E & Molalla Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	1796
Average Queue (ft)	1326
95th Queue (ft)	2173
Link Distance (ft)	1782
Upstream Blk Time (%)	35
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	350	265	215	285	75	255	495	135	160	815	125
Future Volume (vph)	160	350	265	215	285	75	255	495	135	160	815	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
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)	1554	1636	1365	1554	1580		3014	3107	1359	1568	3068	
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)	1554	1636	1365	1554	1580		3014	3107	1359	1568	3068	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	167	365	276	224	297	78	266	516	141	167	849	130
RTOR Reduction (vph)	0	0	210	0	7	0	0	0	98	0	9	0
Lane Group Flow (vph)	167	365	66	224	368	0	266	516	43	167	970	0
Confl. Peds. (#/hr)	1		6	6		1	2		1	1		2
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	6%	6%	6%
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)	18.1	29.7	29.7	21.8	33.4		14.2	37.8	37.8	15.1	38.7	
Effective Green, g (s)	18.1	29.7	29.7	21.8	33.4		14.2	37.8	37.8	15.1	38.7	
Actuated g/C Ratio	0.15	0.24	0.24	0.18	0.27		0.11	0.30	0.30	0.12	0.31	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	226	390	325	272	424		344	944	412	190	954	
v/s Ratio Prot	0.11	0.22		c0.14	c0.23		0.09	0.17		c0.11	c0.32	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.74	0.94	0.20	0.82	0.87		0.77	0.55	0.10	0.88	1.02	
Uniform Delay, d1	50.9	46.4	37.9	49.4	43.4		53.5	36.1	31.1	53.8	42.9	
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	11.9	29.7	0.3	17.9	17.1		10.3	1.2	0.2	33.7	33.4	
Delay (s)	62.8	76.1	38.2	67.4	60.5		63.9	37.4	31.4	87.4	76.3	
Level of Service	E	E	D	E	E		E	D	C	F	E	
Approach Delay (s)		60.4			63.1			44.1			77.9	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	62.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	124.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 1: OR 99E & Molalla Rd

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)	371	884	458	325	1626	275	362	1581	1536	9	370	1799
Average Queue (ft)	333	844	30	158	862	275	362	1529	975	1	371	1709
95th Queue (ft)	445	877	234	381	2089	344	370	1709	2179	7	406	2036
Link Distance (ft)		834			2018			1552	1552			1782
Upstream Blk Time (%)		99			12			91	53			84
Queuing Penalty (veh)		0			53			0	0			0
Storage Bay Dist (ft)	350		550	300		350	350			230	380	
Storage Blk Time (%)	74	28	0	1	38	20	100				60	
Queuing Penalty (veh)	453	122	0	2	82	50	248				245	

Intersection: 1: OR 99E & Molalla Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	1799
Average Queue (ft)	1700
95th Queue (ft)	2047
Link Distance (ft)	1782
Upstream Blk Time (%)	83
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	30	1	355	50	5
Future Vol, veh/h	260	30	1	355	50	5
Conflicting Peds, #/hr	0	1	1	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	13	13	16	16	2	2
Mvmt Flow	313	36	1	428	60	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	350	0	763	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	431	-
Critical Hdwy	-	-	4.26	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.344	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1135	-	372	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1134	-	371	709
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	388	-	-	1134	-
HCM Lane V/C Ratio	0.171	-	-	0.001	-
HCM Control Delay (s)	16.2	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	55	5	390	35	5
Future Vol, veh/h	475	55	5	390	35	5
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	10	10	9	9	6	6
Mvmt Flow	534	62	6	438	39	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	598	0	1017	567
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	-	-	4.19	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.281	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	945	-	259	515
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	943	-	257	514
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	630	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	274	-	-	943	-
HCM Lane V/C Ratio	0.164	-	-	0.006	-
HCM Control Delay (s)	20.7	-	-	8.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	240	15	40	325	5	20	5	50	1	5	15
Future Vol, veh/h	5	240	15	40	325	5	20	5	50	1	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	14	14	14	12	12	12	0	0	0	93	93	93
Mvmt Flow	6	289	18	48	392	6	24	6	60	1	6	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	398	0	0	307	0	0	813	804	298	834	810	395
Stage 1	-	-	-	-	-	-	310	310	-	491	491	-
Stage 2	-	-	-	-	-	-	503	494	-	343	319	-
Critical Hdwy	4.24	-	-	4.22	-	-	7.1	6.5	6.2	8.03	7.43	7.13
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.03	6.43	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.03	6.43	-
Follow-up Hdwy	2.326	-	-	2.308	-	-	3.5	4	3.3	4.337	4.837	4.137
Pot Cap-1 Maneuver	1098	-	-	1199	-	-	299	319	746	205	230	495
Stage 1	-	-	-	-	-	-	705	663	-	422	423	-
Stage 2	-	-	-	-	-	-	555	550	-	519	518	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1098	-	-	1199	-	-	272	305	746	179	220	495
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	305	-	179	220	-
Stage 1	-	-	-	-	-	-	701	660	-	420	406	-
Stage 2	-	-	-	-	-	-	506	528	-	470	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	14.3	15.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	478	1098	-	-	1199	-	-	358
HCM Lane V/C Ratio	0.189	0.005	-	-	0.04	-	-	0.071
HCM Control Delay (s)	14.3	8.3	-	-	8.1	-	-	15.8
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	410	65	120	370	1	20	1	60	5	5	5
Future Vol, veh/h	5	410	65	120	370	1	20	1	60	5	5	5
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	20	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	6	482	76	141	435	1	24	1	71	6	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	436	0	0	558	0	0	1256	1250	520	1286	1288	436
Stage 1	-	-	-	-	-	-	532	532	-	718	718	-
Stage 2	-	-	-	-	-	-	724	718	-	568	570	-
Critical Hdwy	4.21	-	-	4.17	-	-	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	2.299	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1077	-	-	988	-	-	150	174	560	143	165	625
Stage 1	-	-	-	-	-	-	535	529	-	423	436	-
Stage 2	-	-	-	-	-	-	420	436	-	511	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	988	-	-	128	148	560	110	141	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	148	-	110	141	-
Stage 1	-	-	-	-	-	-	532	526	-	420	374	-
Stage 2	-	-	-	-	-	-	351	374	-	443	506	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.3	22.5	28.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	1077	-	-	988	-	-	169
HCM Lane V/C Ratio	0.318	0.005	-	-	0.143	-	-	0.104
HCM Control Delay (s)	22.5	8.4	-	-	9.2	-	-	28.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.3	0	-	-	0.5	-	-	0.3

APPENDIX D:
METHODS AND ASSUMPTIONS MEMORANDUM

MEMORANDUM

DATE: **September 26, 2019**

TO: **Eric Lilequist/City of Woodburn, Dago Garcia/ City of Woodburn, Casey Knecht/ODOT Region 2**

FROM: **Tegan Enloe, PE/Enloe Consulting, LLC**

SUBJECT: **Molalla Road Apartments Traffic Impact Analysis: Methods & Assumptions**

Background

The applicant is proposing to build an apartment complex located on the north side of Molalla Road just east of N Pacific Highway (Hwy) at 2145 Molalla Road. The proposed development would build two-hundred thirty-one (231) apartment units. The complex would have direct access to Molalla Road.

Project Study Area

The project study area is outlined in Figure 1. Study intersections are identified with circles on the figure and include:

1. N Pacific Hwy (99E) / Molalla Road (OR 211)
2. Molalla Road (OR 211) / June Way
3. Molalla Road (OR 211) / Proposed Site Driveway
4. Molalla Road (OR 211) / Cooley Road

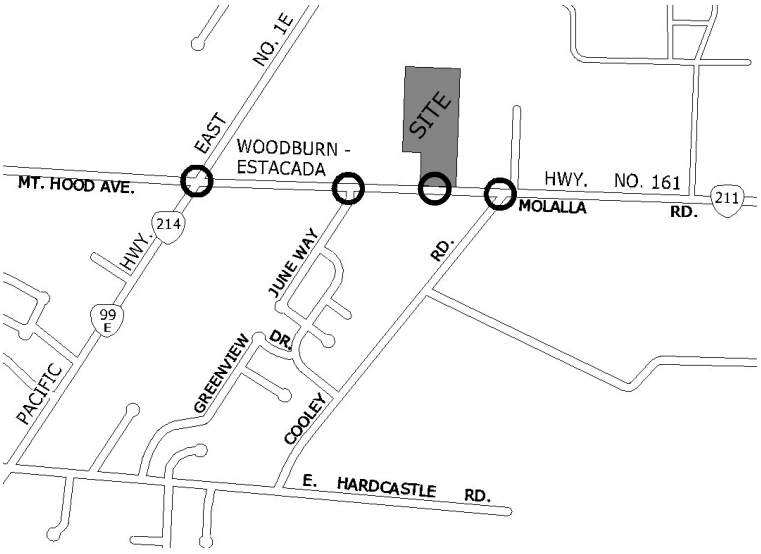


Figure 1: Study Area

Table 1 outlines study intersection ownership and applicable mobility standards.

Table 1: Intersection Mobility Standards and Ownership

No.	Intersection	Ownership[1]	Functional Classification[2]	Mobility Standard Type	Standard	
					Major	Minor
1	N Pacific Hwy (99E) / Molalla Road (OR 211)	ODOT	Principal Arterial/ Minor Arterial	V/C	0.90	
2	Molalla Road (OR 211) / June Way	ODOT	Principal Arterial/ Local	V/C	0.95	1.0
3	Molalla Road (OR 211) / Proposed Site Driveway	ODOT	Minor Arterial/ Local	V/C	0.95	1.0
4	Molalla Road (OR 211) / Cooley Road	ODOT	Principal Arterial/ Major Collector	V/C	0.95	0.95

Notes:
ODOT Standards based on OHP, Table 6 for Regional Highway, non-MPO less than or equal to 35 mph

Molalla Road (OR 211) is also known as Woodburn-Estacada Hwy No. 161

N Pacific Hwy (O 99E) is also known as Pacific Hwy No. 081

[1] Ownership, ODOT City of Woodburn Map, Accessed 08/09/2019
https://www.oregon.gov/ODOT/Data/Documents/City_Woodburn.pdf

[2] Functional Classification, ODOT TransGIS, Accessed 08/09/2019

Scenarios

The traffic analysis will be completed under the assumption that full build out and site occupancy will occur in 2021.

The following analysis scenarios are proposed for review:

- 2019 Existing Conditions, AM Peak Hour
- 2019 Existing Conditions, PM Peak Hour
- 2021 Background Traffic, AM Peak Hour
- 2021 Background Traffic, PM Peak Hour
- 2021 Total Traffic (Background + Site), AM Peak Hour
- 2021 Total Traffic (Background + Site), PM Peak Hour

A simulation-based queue length analysis will be provided for any intersections that exceed 0.70 volume-to-capacity ratio.

Analysis Volumes

AM and PM traffic counts for the study area were conducted on Thursday, September 12th, 2019. The intersection of North Pacific Highway (OR 99E)/Molalla Rd is separated from the remaining study area by a large driveway. The remaining intersections are separated by a few minor driveways. As such, the network will only be balanced between the intersections Molalla Road/June Way and Molalla Road (OR 211) /Cooley Road. 30th Highest Volume (HV) values will be used for all analysis scenarios.

Seasonal Adjustment Factor

To establish the 30th HV values for the analysis, the seasonal adjustment factor is calculated using the ODOT Characteristic Table, which identifies ATR 24-001 (Woodburn) as a representative ATR for the study area. Table 2 shows the seasonal adjustment factor calculations.

Table 2: Seasonal Adjustment Factor Calculation

	2017	2016	2015	2014	2013	Average
Peak Month	~~117~~ (August)	~~111~~ (June)	113 (June)	112 (July)	112 (July)	112
Count Month (September)	~~109~~	106	~~105~~	109	107	107
						Average Seasonal Adjustment Factor: 1.05
Note: strike through values represent the highest and lowest values and were excluded from the average.						

Future Forecasting

A growth rate for the study area is developed using ODOT's 2037 Future Volume Tables. Table 3 outlines the proposed Future Volume Table data points. An annual growth rate of 1.4% is proposed to be applied linearly to the existing volumes. This value is achieved by average of the two calculated values for North Pacific Highway (OR 99E), which represents the highest order roadway in the study area.

Table 3: Future Volume Table

Highway	Mile Point	Location	2016	2037	RSQ	21 Year Factor	Annual Rate
081 (OR99E)	31.65	0.05 mile north of Woodburn-Estacada Highway (OR211) and Hillsboro-Silverton Highway (OR214)	18300	22300	MODEL	1.22	1.0%
081 (OR99E)	31.80	0.10 mile south of Woodburn-Estacada Highway (OR211)	19500	26600	MODEL	1.36	1.7%
140	39.24	0.05 mile west of Pacific Highway East (OR99E)	13800	15800	MODEL	1.14	0.7%
161	0.15	0.15 mile east of Pacific Highway East (OR99E) and Hillsboro-Silverton Highway	8800	12300	0.5248	1.40	1.9%
							Average Annual Rate: 1.4%

Trip Generation

Trip generation values for the proposed development are provided in Table 4. These values will be added to the 2021 Background Traffic to develop 2021 Total Traffic volumes.

Table 4: Trip Generation

Land Use (ITE Codes)	Dwelling Units	Time Period	Trip Generation Rate	Peak Hour Trips		
				In	Out	Total
Multi-Family Mid-Rise (221)	231	AM Peak	Equation	20	58	78
TOTAL AM PEAK HOUR				**20**	**58**	**78**
Multi-Family Mid-Rise (221)	231	PM Peak	Equation	61	38	99
TOTAL PM PEAK HOUR				**61**	**38**	**99**

Trip Distribution

Trip distribution patterns are calculated based on a combination of existing count data and recommendations from the City and ODOT.

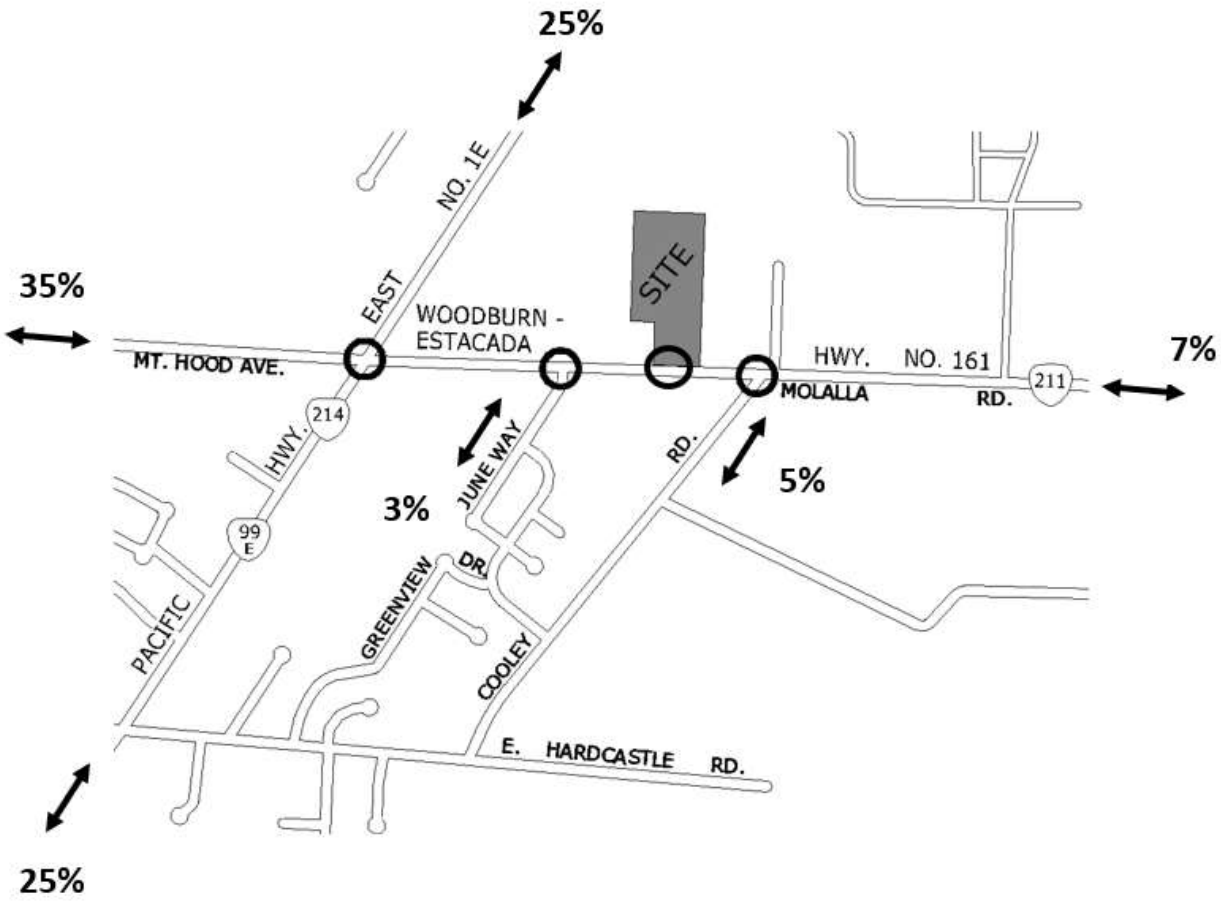


Figure 2: Proposed Trip Distribution

In Process Developments

Conversations with City and ODOT staff have indicated that trips at the intersection of North Pacific Highway (OR 99E)/Molalla Road from the Pacific Valley Apartments should be included as “in-process”. In process trips will be included in the Background and Total Traffic analysis scenarios.

Next Steps

If you have any questions or comments regarding the proposed approach, please contact our Project Manager, Tegan Enloe, PE, at 503.805.8115 or enloeconsulting@gmail.com.

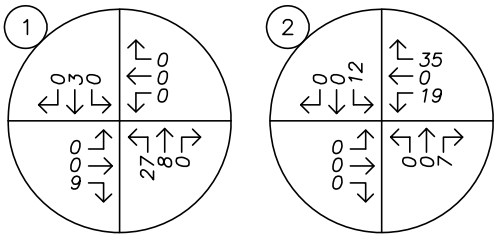
APPENDIX E:
IN-PROCESS TRIPS

LEGEND

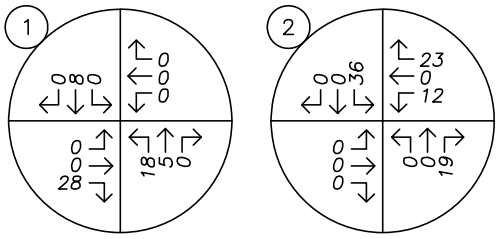
XX% PERCENT OF PROJECT TRIPS

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

AM PEAK HOUR



PM PEAK HOUR

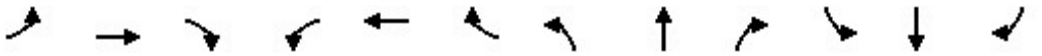


SITE TRIP DISTRIBUTION & ASSIGNMENT
Proposed Development Plan – Site Trips
AM & PM Peak Hours

no scale

FIGURE 3

APPENDIX F:
SYNCHRO REPORTS – 2021 BACKGROUND AM + PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	195	130	155	240	95	205	530	105	75	350	80
Future Volume (vph)	120	195	130	155	240	95	205	530	105	75	350	80
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
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	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	0.96		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)	1471	1549	1298	1471	1477		2906	2995	1311	1484	2879	
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)	1471	1549	1298	1471	1477		2906	2995	1311	1484	2879	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	217	144	172	267	106	228	589	117	83	389	89
RTOR Reduction (vph)	0	0	113	0	13	0	0	0	80	0	19	0
Lane Group Flow (vph)	133	217	31	172	360	0	228	589	37	83	459	0
Confl. Peds. (#/hr)	1		3	3		1	1		1	1		1
Heavy Vehicles (%)	13%	13%	13%	13%	13%	13%	11%	11%	11%	12%	12%	12%
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)	11.8	19.5	19.5	14.2	21.9		12.1	29.2	29.2	8.6	25.7	
Effective Green, g (s)	11.8	19.5	19.5	14.2	21.9		12.1	29.2	29.2	8.6	25.7	
Actuated g/C Ratio	0.13	0.21	0.21	0.16	0.24		0.13	0.32	0.32	0.09	0.28	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	189	330	276	228	353		384	955	418	139	808	
v/s Ratio Prot	0.09	0.14		c0.12	c0.24		c0.08	c0.20		0.06	0.16	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.70	0.66	0.11	0.75	1.02		0.59	0.62	0.09	0.60	0.57	
Uniform Delay, d1	38.2	32.9	29.0	37.0	34.8		37.4	26.4	21.8	39.8	28.1	
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	11.3	4.8	0.2	13.2	53.1		2.5	1.8	0.2	6.7	1.6	
Delay (s)	49.4	37.7	29.2	50.2	87.9		39.8	28.2	22.0	46.5	29.7	
Level of Service	D	D	C	D	F		D	C	C	D	C	
Approach Delay (s)		38.4			76.0			30.3			32.2	
Approach LOS		D			E			C			C	

Intersection Summary					
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.80				
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	20.0		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C		
Analysis Period (min)	15				

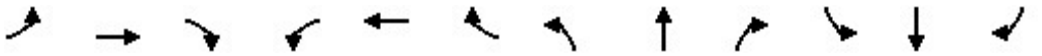
c Critical Lane Group

Intersection: 1: OR 99E & Molalla Rd

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)	362	868	401	320	2030	280	352	1594	1580	1	380	1826
Average Queue (ft)	340	844	30	256	2013	280	352	1513	1119	0	379	1419
95th Queue (ft)	428	895	235	408	2092	345	371	1778	2068	0	426	2147
Link Distance (ft)		834			2018			1552	1552			1782
Upstream Blk Time (%)		97			94			87	34			40
Queuing Penalty (veh)		0			386			0	0			0
Storage Bay Dist (ft)	350		550	300		350	350			230	380	
Storage Blk Time (%)	88	14	0	66	41	20	100				80	4
Queuing Penalty (veh)	284	37	0	220	65	53	265				139	4

Intersection: 1: OR 99E & Molalla Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	1791
Average Queue (ft)	1384
95th Queue (ft)	2120
Link Distance (ft)	1782
Upstream Blk Time (%)	38
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	360	300	225	290	80	280	515	135	165	850	125
Future Volume (vph)	165	360	300	225	290	80	280	515	135	165	850	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
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)	1554	1636	1365	1554	1578		3014	3107	1359	1568	3070	
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)	1554	1636	1365	1554	1578		3014	3107	1359	1568	3070	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	172	375	312	234	302	83	292	536	141	172	885	130
RTOR Reduction (vph)	0	0	224	0	7	0	0	0	98	0	9	0
Lane Group Flow (vph)	172	375	89	234	378	0	292	536	43	172	1006	0
Confl. Peds. (#/hr)	1		6	6		1	2		1	1		2
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	6%	6%	6%
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)	18.6	30.5	30.5	22.5	34.4		14.8	38.1	38.1	15.3	38.6	
Effective Green, g (s)	18.6	30.5	30.5	22.5	34.4		14.8	38.1	38.1	15.3	38.6	
Actuated g/C Ratio	0.15	0.24	0.24	0.18	0.27		0.12	0.30	0.30	0.12	0.31	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	228	394	329	276	429		352	936	409	189	937	
v/s Ratio Prot	0.11	0.23		c0.15	c0.24		0.10	0.17		c0.11	c0.33	
v/s Ratio Perm			0.07						0.03			
v/c Ratio	0.75	0.95	0.27	0.85	0.88		0.83	0.57	0.10	0.91	1.07	
Uniform Delay, d1	51.7	47.2	38.9	50.3	44.0		54.6	37.3	31.8	54.9	43.9	
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	13.2	33.0	0.5	20.7	18.9		14.8	1.4	0.3	41.0	51.2	
Delay (s)	64.9	80.3	39.4	71.0	63.0		69.4	38.7	32.1	95.9	95.1	
Level of Service	E	F	D	E	E		E	D	C	F	F	
Approach Delay (s)		62.3			66.0			47.0			95.2	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	69.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	126.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 1: OR 99E & Molalla Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	L	T	TR
Maximum Queue (ft)	364	860	352	325	1574	281	359	1576	1552	390	1810	1815
Average Queue (ft)	345	833	25	131	817	275	357	1543	1469	391	1682	1689
95th Queue (ft)	410	848	215	338	2108	336	384	1634	1702	397	2089	2124
Link Distance (ft)		834			2018			1552	1552		1782	1782
Upstream Blk Time (%)		99			16			74	55		81	79
Queuing Penalty (veh)		0			71			0	0		0	0
Storage Bay Dist (ft)	350		550	300		350	350			380		
Storage Blk Time (%)	87	16	0	1	34	0	79			100	0	
Queuing Penalty (veh)	572	78	0	2	77	0	203			425	0	

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	30	1	365	50	5
Future Vol, veh/h	265	30	1	365	50	5
Conflicting Peds, #/hr	0	1	1	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	13	13	16	16	2	2
Mvmt Flow	319	36	1	440	60	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	356	0	781	338
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.26	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.344	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1129	-	363	704
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1128	-	362	703
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	646	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	379	-	-	1128	-
HCM Lane V/C Ratio	0.175	-	-	0.001	-
HCM Control Delay (s)	16.5	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	485	55	5	405	35	5
Future Vol, veh/h	485	55	5	405	35	5
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	10	10	9	9	6	6
Mvmt Flow	545	62	6	455	39	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	609	0	1045	578
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	-	-	4.19	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.281	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	936	-	249	508
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	934	-	247	507
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	21.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	264	-	-	934	-
HCM Lane V/C Ratio	0.17	-	-	0.006	-
HCM Control Delay (s)	21.4	-	-	8.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	245	15	40	335	5	20	5	50	1	5	15
Future Vol, veh/h	5	245	15	40	335	5	20	5	50	1	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	14	14	14	12	12	12	0	0	0	93	93	93
Mvmt Flow	6	295	18	48	404	6	24	6	60	1	6	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	410	0	0	313	0	0	831	822	304	852	828	407
Stage 1	-	-	-	-	-	-	316	316	-	503	503	-
Stage 2	-	-	-	-	-	-	515	506	-	349	325	-
Critical Hdwy	4.24	-	-	4.22	-	-	7.1	6.5	6.2	8.03	7.43	7.13
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.03	6.43	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.03	6.43	-
Follow-up Hdwy	2.326	-	-	2.308	-	-	3.5	4	3.3	4.337	4.837	4.137
Pot Cap-1 Maneuver	1087	-	-	1193	-	-	291	311	740	198	223	487
Stage 1	-	-	-	-	-	-	699	659	-	414	417	-
Stage 2	-	-	-	-	-	-	546	543	-	514	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1087	-	-	1193	-	-	265	297	740	173	213	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	297	-	173	213	-
Stage 1	-	-	-	-	-	-	695	655	-	412	400	-
Stage 2	-	-	-	-	-	-	497	521	-	465	511	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	14.5	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	469	1087	-	-	1193	-	-	350
HCM Lane V/C Ratio	0.193	0.006	-	-	0.04	-	-	0.072
HCM Control Delay (s)	14.5	8.3	-	-	8.1	-	-	16.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	3.3

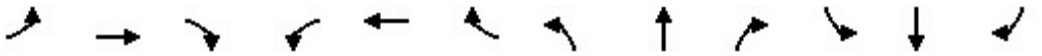
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	420	65	125	380	1	20	1	60	5	5	5
Future Vol, veh/h	5	420	65	125	380	1	20	1	60	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	6	494	76	147	447	1	24	1	71	6	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	448	0	0	570	0	0	1292	1286	532	1322	1324	448
Stage 1	-	-	-	-	-	-	544	544	-	742	742	-
Stage 2	-	-	-	-	-	-	748	742	-	580	582	-
Critical Hdwy	4.21	-	-	4.17	-	-	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	2.299	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1066	-	-	978	-	-	141	166	551	135	157	615
Stage 1	-	-	-	-	-	-	527	522	-	411	425	-
Stage 2	-	-	-	-	-	-	408	425	-	504	502	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	978	-	-	119	140	551	103	133	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	140	-	103	133	-
Stage 1	-	-	-	-	-	-	524	519	-	409	361	-
Stage 2	-	-	-	-	-	-	338	361	-	436	499	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.3	23.8	30.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	1066	-	-	978	-	-	159
HCM Lane V/C Ratio	0.334	0.006	-	-	0.15	-	-	0.111
HCM Control Delay (s)	23.8	8.4	-	-	9.3	-	-	30.4
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.4	0	-	-	0.5	-	-	0.4

APPENDIX G:
SYNCHRO REPORTS – 2021 TOTAL AM + PM



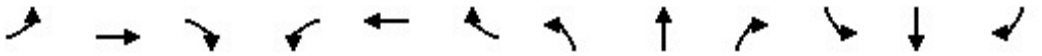
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	202	130	170	259	110	205	530	110	80	350	80
Future Volume (vph)	120	202	130	170	259	110	205	530	110	80	350	80
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
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	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	0.96		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)	1471	1549	1298	1471	1474		2906	2995	1311	1484	2879	
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)	1471	1549	1298	1471	1474		2906	2995	1311	1484	2879	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	224	144	189	288	122	228	589	122	89	389	89
RTOR Reduction (vph)	0	0	115	0	14	0	0	0	83	0	19	0
Lane Group Flow (vph)	133	224	29	189	396	0	228	589	39	89	459	0
Confl. Peds. (#/hr)	1		3	3		1	1		1	1		1
Heavy Vehicles (%)	13%	13%	13%	13%	13%	13%	11%	11%	11%	12%	12%	12%
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)	11.8	18.8	18.8	14.9	21.9		12.1	29.5	29.5	8.9	26.3	
Effective Green, g (s)	11.8	18.8	18.8	14.9	21.9		12.1	29.5	29.5	8.9	26.3	
Actuated g/C Ratio	0.13	0.20	0.20	0.16	0.24		0.13	0.32	0.32	0.10	0.29	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	188	316	264	237	350		381	959	419	143	822	
v/s Ratio Prot	0.09	0.14		c0.13	c0.27		c0.08	c0.20		0.06	0.16	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.71	0.71	0.11	0.80	1.13		0.60	0.61	0.09	0.62	0.56	
Uniform Delay, d1	38.5	34.1	29.8	37.1	35.1		37.7	26.5	21.9	40.0	28.0	
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	11.5	7.2	0.2	16.8	89.0		2.5	1.8	0.2	8.2	1.5	
Delay (s)	50.0	41.3	30.0	54.0	124.1		40.2	28.2	22.1	48.1	29.4	
Level of Service	D	D	C	D	F		D	C	C	D	C	
Approach Delay (s)		40.4			101.9			30.4			32.4	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 1: OR 99E & Molalla Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	L	T	TR
Maximum Queue (ft)	369	855	345	307	2027	286	364	1581	1566	373	1808	1785
Average Queue (ft)	340	837	10	276	2016	271	360	1477	1405	370	1428	1352
95th Queue (ft)	433	850	127	348	2051	368	371	1842	1828	408	2124	2058
Link Distance (ft)		834			2018			1552	1552		1782	1782
Upstream Blk Time (%)		99			97			85	50		42	29
Queuing Penalty (veh)		0			448			0	0		0	0
Storage Bay Dist (ft)	350		550	300		350	350			380		
Storage Blk Time (%)	84	15	0	60	23	20	100			79		
Queuing Penalty (veh)	275	42	0	212	42	53	265			138		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	382	300	235	302	90	280	515	150	180	850	125
Future Volume (vph)	165	382	300	235	302	90	280	515	150	180	850	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
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)	1554	1636	1365	1554	1574		3014	3107	1359	1568	3070	
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)	1554	1636	1365	1554	1574		3014	3107	1359	1568	3070	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	172	398	312	245	315	94	292	536	156	188	885	130
RTOR Reduction (vph)	0	0	220	0	8	0	0	0	109	0	9	0
Lane Group Flow (vph)	172	398	93	245	401	0	292	536	47	188	1006	0
Confl. Peds. (#/hr)	1		6	6		1	2		1	1		2
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	6%	6%	6%
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)	18.6	30.5	30.5	23.1	35.0		14.8	37.9	37.9	15.5	38.6	
Effective Green, g (s)	18.6	30.5	30.5	23.1	35.0		14.8	37.9	37.9	15.5	38.6	
Actuated g/C Ratio	0.15	0.24	0.24	0.18	0.28		0.12	0.30	0.30	0.12	0.30	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	227	392	327	282	433		351	927	405	191	933	
v/s Ratio Prot	0.11	c0.24		c0.16	c0.25		0.10	0.17		c0.12	c0.33	
v/s Ratio Perm			0.07						0.03			
v/c Ratio	0.76	1.02	0.28	0.87	0.93		0.83	0.58	0.11	0.98	1.08	
Uniform Delay, d1	52.0	48.2	39.3	50.5	44.7		54.9	37.8	32.4	55.6	44.2	
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	13.5	49.4	0.5	23.5	26.0		15.4	1.5	0.3	60.1	52.9	
Delay (s)	65.5	97.6	39.9	73.9	70.7		70.2	39.2	32.6	115.8	97.1	
Level of Service	E	F	D	E	E		E	D	C	F	F	
Approach Delay (s)		70.9			71.9			47.4			100.0	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	74.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	127.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 1: OR 99E & Molalla Rd

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)	368	854	460	322	1389	307	363	1578	1549	13	379	1808
Average Queue (ft)	299	834	36	107	341	307	363	1523	1190	1	379	1720
95th Queue (ft)	478	848	255	261	1060	330	368	1708	2097	8	425	2025
Link Distance (ft)		834			2018			1552	1552			1782
Upstream Blk Time (%)		98			2			90	18			84
Queuing Penalty (veh)		0			8			0	0			0
Storage Bay Dist (ft)	350		550	300		350	350			230	380	
Storage Blk Time (%)	69	36	0	0	16		100				80	
Queuing Penalty (veh)	469	168	0	0	38		258				340	

Intersection: 1: OR 99E & Molalla Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	1794
Average Queue (ft)	1704
95th Queue (ft)	2042
Link Distance (ft)	1782
Upstream Blk Time (%)	83
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	282	30	2	414	50	6
Future Vol, veh/h	282	30	2	414	50	6
Conflicting Peds, #/hr	0	1	1	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	13	13	16	16	2	2
Mvmt Flow	340	36	2	499	60	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	377	0	863	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	504	-
Critical Hdwy	-	-	4.26	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.344	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1109	-	325	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	607	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1108	-	324	684
Mov Cap-2 Maneuver	-	-	-	-	324	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	605	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	-	-	1108	-
HCM Lane V/C Ratio	0.197	-	-	0.002	-
HCM Control Delay (s)	18	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	537	55	6	437	35	7
Future Vol, veh/h	537	55	6	437	35	7
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	10	10	9	9	6	6
Mvmt Flow	603	62	7	491	39	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	667	0	1141	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	505	-
Critical Hdwy	-	-	4.19	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.281	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	890	-	218	471
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	888	-	216	470
Mov Cap-2 Maneuver	-	-	-	-	216	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	593	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	237	-	-	888	-
HCM Lane V/C Ratio	0.199	-	-	0.008	-
HCM Control Delay (s)	23.9	-	-	9.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	270	370	2	7	51
Future Vol, veh/h	18	270	370	2	7	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	13	13	13	2	2
Mvmt Flow	20	293	402	2	8	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	404	0	-	0	736	403
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	333	-
Critical Hdwy	4.23	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.317	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1098	-	-	-	386	647
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1098	-	-	-	379	647
Mov Cap-2 Maneuver	-	-	-	-	489	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	726	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1098	-	-	-	623
HCM Lane V/C Ratio	0.018	-	-	-	0.101
HCM Control Delay (s)	8.3	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	54	490	405	7	5	33
Future Vol, veh/h	54	490	405	7	5	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	7	7	2	2
Mvmt Flow	59	533	440	8	5	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	448	0	-	0	1095	444
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	651	-
Critical Hdwy	4.2	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.29	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1071	-	-	-	236	614
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	519	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1071	-	-	-	223	614
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1071	-	-	-	561
HCM Lane V/C Ratio	0.055	-	-	-	0.074
HCM Control Delay (s)	8.6	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	249	18	40	336	5	21	5	50	1	5	15
Future Vol, veh/h	5	249	18	40	336	5	21	5	50	1	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	14	14	14	12	12	12	0	0	0	93	93	93
Mvmt Flow	6	300	22	48	405	6	25	6	60	1	6	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	411	0	0	322	0	0	839	830	311	860	838	408
Stage 1	-	-	-	-	-	-	323	323	-	504	504	-
Stage 2	-	-	-	-	-	-	516	507	-	356	334	-
Critical Hdwy	4.24	-	-	4.22	-	-	7.1	6.5	6.2	8.03	7.43	7.13
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.03	6.43	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.03	6.43	-
Follow-up Hdwy	2.326	-	-	2.308	-	-	3.5	4	3.3	4.337	4.837	4.137
Pot Cap-1 Maneuver	1086	-	-	1184	-	-	288	308	734	196	220	486
Stage 1	-	-	-	-	-	-	693	654	-	414	416	-
Stage 2	-	-	-	-	-	-	546	543	-	509	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1086	-	-	1184	-	-	262	294	734	171	210	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	262	294	-	171	210	-
Stage 1	-	-	-	-	-	-	689	650	-	412	399	-
Stage 2	-	-	-	-	-	-	497	521	-	460	506	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	14.8	16.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1086	-	-	1184	-	-	347
HCM Lane V/C Ratio	0.199	0.006	-	-	0.041	-	-	0.073
HCM Control Delay (s)	14.8	8.3	-	-	8.2	-	-	16.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	423	67	125	384	1	23	1	60	5	5	5
Future Vol, veh/h	5	423	67	125	384	1	23	1	60	5	5	5
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	20	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	6	498	79	147	452	1	27	1	71	6	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	453	0	0	577	0	0	1303	1297	538	1333	1336	453
Stage 1	-	-	-	-	-	-	550	550	-	747	747	-
Stage 2	-	-	-	-	-	-	753	747	-	586	589	-
Critical Hdwy	4.21	-	-	4.17	-	-	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	2.299	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1062	-	-	972	-	-	139	163	547	132	155	611
Stage 1	-	-	-	-	-	-	523	519	-	408	423	-
Stage 2	-	-	-	-	-	-	405	423	-	500	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1062	-	-	972	-	-	117	138	547	101	131	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	138	-	101	131	-
Stage 1	-	-	-	-	-	-	520	516	-	406	359	-
Stage 2	-	-	-	-	-	-	335	359	-	432	496	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.3	26.1	31
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	268	1062	-	-	972	-	-	156
HCM Lane V/C Ratio	0.369	0.006	-	-	0.151	-	-	0.113
HCM Control Delay (s)	26.1	8.4	-	-	9.4	-	-	31
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.6	0	-	-	0.5	-	-	0.4

APPENDIX H:
CRASH DATA REPORTS

081: PACIFIC HIGHWAY EAST

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2013 to 12/31/2013, Both Add and Non-Add mileage

1 - 5 of 7 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S I N H	W C O R	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 / 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
02641	N	N	N	N		08/07/2013	MARION	1 14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						WE	WOODBURN	MN 0	PACIFIC HY 99E	N	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N -S									000	00
N						1P	WOODBURN UA	31.66	WOODBURN-ESTACADA H	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		026	000		07
N						45 9 6.462756	-122 49 50.8047239		008100100S00		(04)													OR<25					
																02	NONE 0	STOP										
																	PRVTE	N -S									011	00
																	PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		000	000		00
																								OR<25				
01256	N	N	N	N		02/04/2013	MARION	1 14		STRGHT		N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO	WOODBURN	MN 0	PACIFIC HY 99E	N	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N -S									000	00
N						8A	WOODBURN UA	31.69	WOODBURN-ESTACADA H	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	54	M	OR-Y		026	000		07
N						45 9 5.110524	-122 49 51.9847319		008100100S00		(04)													OR<25				
																02	NONE 0	STOP										
																	PRVTE	N -S									011	00
																	PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																								UNK				
00115	Y	N	N	N	N	01/11/2013	MARION	1 14		INTER	CROSS	N	N	SLT	S-1STOP	01	NONE 0	STRGHT										01
CITY						FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	S		TRF SIGNAL	N	ICE	REAR		PRVTE	S -N									000	00
N						4A	WOODBURN UA	31.70	PACIFIC HY 99E	06	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	34	F	OR-Y	047,026	000	000		01
N						45 9 4.6598039	-122 49 52.378068		008100100S00															OR<25				
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	INJC	36	M	OR-Y	000	000	000		00
																								OR<25				
00538	N	N	N	N		02/20/2013	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										27
NONE						WE	WOODBURN	MN 0	WOODBURN-ESTACADA H	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
N						5P	WOODBURN UA	31.70	PACIFIC HY 99E	06	1		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y	016,026	000	000		27
N						45 9 4.6598039	-122 49 52.378068		008100100S00															OR<25				
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	NONE	62	M	OTH-Y	000	000	000		00
																								N-RES				
02555	N	N	N	N	N	07/29/2013	MARION	1 14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R										02
CITY						MO	WOODBURN	MN 0	HILLSBORO-SILV HY	SW		STOP SIGN	N	DRY	TURN		PRVTE	W -SW									015	00
N						9A	WOODBURN UA	31.70	PACIFIC HY 99E	03	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y	028	000	000		02
N						45 9 4.6598039	-122 49 52.378068		008100100S00															OR<25				
																02	NONE 0	STRGHT										
																	PRVTE	NE-SW									000	00
																	PSNGR CAR		01	DRVR	NONE	26	F	OR-Y	000	000	000		00
																								OR<25				

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S I N V	W C O H	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG TYP / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03521	N	N	N	N	N	10/10/2013	MARION	1	14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY						TH	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	WET	TURN		PRVTE	E -W								000		00
N						6A	WOODBURN UA	31.70		PACIFIC HY 99E	02	1		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		000	000		00
N						45 9 4.6598039	-122 49 52.378068			008100100S00															OR<25					
																	02	NONE 0	TURN-L									000		00
																		PRVTE	W -NE											
																		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		004,028	000		02
																									OR>25					
03606	N	N	N	N		10/17/2013	MARION	1	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 1	STRGHT											13
NONE						TH	WOODBURN	MN	0	PACIFIC HY 99E	S	(RSDMD)	UNKNOWN	N	DRY	SS-O		PRVTE	S -N								000		00
N						12P	WOODBURN UA	31.73		WOODBURN-ESTACADA H	05			N	DAY	PDO		SEMI TOW		01	DRVR	NONE	51	M	OR-Y		045	000		13
N						45 9 3.328776	-122 49 53.5778759			008100100S00		(04)													OR<25					
																	02	NONE 0	STRGHT									000		00
																		PRVTE	S -N											
																		PSNGR CAR		01	DRVR	NONE	66	M	OR-Y		000	000		00
																									OR>25					

081: PACIFIC HIGHWAY EAST

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2014 to 12/31/2014, Both Add and Non-Add mileage

1 - 3 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	C N	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02308	N	N	N	N				07/11/2014	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE								FR	WOODBURN	MN 0		PACIFIC HY 99E	NE	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	NE-SW									000		00
N								3P	WOODBURN UA	31.66		HILLSBORO-SILV HY	03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		026	000		07
N								45 9 6.460776	-122 49 50.8064879			008100100S00		(04)													OR<25					
																			02	NONE 0	STOP											
																				PRVTE	NE-SW									011		00
																				PSNGR CAR		01	DRVR	INJB	55	M	OR-Y		000	000		00
																											OR<25					
02020	N	N	N	N				06/19/2014	MARION	1	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											13
NONE								TH	WOODBURN	MN 0		HILLSBORO-SILV HY	NE	(NONE)	UNKNOWN	N	DRY	SS-O		PRVTE	NE-SW									000		00
N								6P	WOODBURN UA	31.68		PACIFIC HY 99E	04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		045	000		13
N								45 9 5.560848	-122 49 51.591828			008100100S00		(04)													OR<25					
																			02	NONE 0	STRGHT											
																				PRVTE	NE-SW									000		00
																				PSNGR CAR		01	DRVR	NONE	40	M	OR-Y		000	000		00
																											OR<25					
02222	N	N	N	N				07/05/2014	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
CITY								SA	WOODBURN	MN 0		HILLSBORO-SILV HY	NE		L-GRN-SIG	N	DRY	REAR		PRVTE	NE-SW									000		00
N								2P	WOODBURN UA	31.70		PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	46	M	NONE	043,026	000			07
N								45 9 4.66	-122 49 52.38			008100100S00															OR<25					
																			02	NONE 0	STOP											
																				PRVTE	NE-SW									012	013	00
																				PSNGR CAR		01	DRVR	INJC	32	F	OR-Y		000	000		00
																											OR<25					
																			02	NONE 0	STOP											
																				PRVTE	NE-SW									012	013	00
																				PSNGR CAR		02	PSNG	INJC	08	M			000	000		00
																			02	NONE 0	STOP											
																				PRVTE	NE-SW									012	013	00
																				PSNGR CAR		03	PSNG	INJC	11	F			000	000		00
																			02	NONE 0	STOP											
																				PRVTE	NE-SW									012	013	00
																				PSNGR CAR		04	PSNG	INJC	04	M			000	000		00
																			02	NONE 0	STOP											
																				PRVTE	NE-SW									012	013	00
																				PSNGR CAR		05	PSNG	INJC	23	F			000	000		00
																			03	NONE 0	STOP											
																				PRVTE	NE-SW									022		00
																				PSNGR CAR		01	DRVR	INJC	73	F	OR-Y		000	000		00
																											OR<25					

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2014 to 12/31/2014, Both Add and Non-Add mileage

4 - 6 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E E D / D R U G S, A L C, M J I N V, S C H L, W O R K (SPEAU, ALGC, DRUGS, MJINV, SCHL, WORK)	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
02591	N N N N N N	08/02/2014	MARION	1 14		INTER	CROSS	N	N	CLR	O-1STOP	01 NONE 0	STRGHT									10
CITY		SA	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	DRY	HEAD	PRVTE	SW-NE								000	00
N		12P	WOODBURN UA	31.70	PACIFIC HY 99E	06	1		N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	36	M	SUSP		080	000	10
N		45 9 4.6608479	-122 49 52.377168		008100100S00													OR<25				
												02 NONE 0	STOP									
												PRVTE	NE-SW								011	00
												PSNGR CAR		01 DRVR	INJB	56	F	OR-Y		000	000	00
																		OR<25				
03793	N N N N	10/26/2014	MARION	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									07
NO RPT		SU	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	WET	REAR	PRVTE	NE-SW								000	00
N		4P	WOODBURN UA	31.70	PACIFIC HY 99E	06	1		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	M	OR-Y		026	000	07
N		45 9 4.66	-122 49 52.38		008100100S00													UNK				
												02 NONE 0	STOP									
												PRVTE	NE-SW								011	00
												PSNGR CAR		01 DRVR	NONE	37	F	OR-Y		000	000	00
																		OR<25				
02716	N N N N N N	08/13/2014	MARION	1 14		INTER	CROSS	N	N	CLR	PED	01 NONE 0	STRGHT									02
CITY		WE	WOODBURN	MN 0	HILLSBORO-SILV HY	SW		STOP SIGN	N	DRY	PED	PRVTE	NW-SE								015	00
N		2P	WOODBURN UA	31.70	PACIFIC HY 99E	09	1		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	57	F	OR-Y		029	000	02
N		45 9 4.6608479	-122 49 52.377168		008100100S00													OR<25				
													-									
													STRGHT	01 PED	INJC	38	F		I XWLK	000	000	00
													W E									

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

081: PACIFIC HIGHWAY EAST

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2015 to 12/31/2015, Both Add and Non-Add mileage

1 - 3 of 6 Crash records shown.

SER# INVEST RD DPT UNLOC?	S D M P R J S W E A U I C O 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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03234	N N N N N N	08/26/2015	MARION	1 16		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										013,004	07
CITY		WE	WOODBURN	MN 0	PACIFIC HY 99E	NE	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	NE-SW									000		00
N		9A	WOODBURN UA	31.68	HILLSBORO-SILV HY	03			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	22	F	OR-Y		043,026	000		07
N		45 9 5.56	-122 49 51.59		008100100S00		(04)													OR<25					
												02	NONE 0	STOP											
													PRVTE	NE-SW									011	013	00
													PSNGR CAR		01	DRVR	NONE	25	M	OR-Y		000	022		00
																				OR<25					
												03	NONE 0	STOP											
													PRVTE	NE-SW									011	004	00
													PSNGR CAR		01	DRVR	INJC	36	M	OR-Y		000	000		00
																				OR<25					
												03	NONE 0	STOP											
													PRVTE	NE-SW									011	004	00
													PSNGR CAR		02	PSNG	INJC	24	M			000	000		00
02858	N N N N	07/24/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		FR	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
N		UNK	WOODBURN UA	31.70	PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	51	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	NONE	00	M	OR-Y		000	000		00
																				UNK					
03475	N Y N N N N	09/11/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
CITY		FR	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
N		8P	WOODBURN UA	31.70	PACIFIC HY 99E	06	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	67	M	OR-Y		043,026	000		07
N		45 9 4.66	-122 49 52.38		008100100S00															OR<25					
												02	NONE 0	STOP											
													PRVTE	NE-SW									011	013	00
													PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		000	022		00
																				OR<25					
												02	NONE 0	STOP											
													PRVTE	NE-SW									011	013	00
													PSNGR CAR		02	PSNG	NO<5	01	M			000	000		00
												03	UNKN 0	STOP											
													UNKN	NE-SW									011		00
													PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																				UNK					
04469	N N N N	11/13/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										013	27,04
CITY		FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	E -W									000		00
N		8P	WOODBURN UA	31.70	PACIFIC HY 99E	02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	68	M	OR-Y		016,020	038		27,04
N		45 9 4.66	-122 49 52.38		008100100S00															OR<25					

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2015 to 12/31/2015, Both Add and Non-Add mileage

4 - 6 of 6 Crash records shown.

SER# INVEST RD DPT UNLOC?	S D M P R J S W E A U I C O 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	SPCL USE TRLR QTY OWNER V# TYPE	MOVE FROM TO	PRTC P# TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
												01 NONE 0	STRGHT									
												PRVTE	E -W								000	00
												PSNGR CAR		02 PSNG	INJC	70	F			000	000	00
												02 NONE 0	STRGHT									
												PRVTE	S -N								000 013	00
												PSNGR CAR		01 DRVR	INJC	49	M	OR-Y		000	022	00
																		OR<25				
												02 NONE 0	STRGHT									
												PRVTE	S -N								000 013	00
												PSNGR CAR		02 PSNG	INJC	10	M			000	000	00
												02 NONE 0	STRGHT									
												PRVTE	S -N								000 013	00
												PSNGR CAR		03 PSNG	INJC	17	M			000	000	00
												03 NONE 0	STRGHT									
												PRVTE	S -N								000	00
												PSNGR CAR		01 DRVR	NONE	71	M	OR-Y		000	000	00
																		OR<25				
01709	N N N N	05/11/2015	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 0	TURN-R									02
CITY		MO	WOODBURN	MN 0	WOODBURN-ESTACADA H	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	E -N								000	00
N		12P	WOODBURN UA	31.70	PACIFIC HY 99E	02	1		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	19	F	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
												SEMI TOW		01 DRVR	NONE	30	M	OTH-Y		000	000	00
																		N-RES				
05246	N N N N N N	12/29/2015	MARION	1 14		STRGHT		N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									29
CITY		TU	WOODBURN	MN 0	PACIFIC HY 99E	S	(NONE)	L-GRN-SIG	N	WET	REAR	PRVTE	S -N								000	00
N		7A	WOODBURN UA	31.72	WOODBURN-ESTACADA H	05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	60	M	OR-Y		026	000	29
N		45 9 3.78	-122 49 53.17		008100100S00		(05)											OR>25				
												02 NONE 0	STOP									
												PRVTE	S -N								011	00
												PSNGR CAR		01 DRVR	NONE	30	F	OR-Y		000	000	00
																		OR<25				

081: PACIFIC HIGHWAY EAST

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2016 to 12/31/2016, Both Add and Non-Add mileage

1 - 5 of 7 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	R U G S	J N H V	S I R L	C O W K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05319	N	N	N	N	N	N	12/01/2016	MARION	1 16			ALLEY		N	N	CLD	ANGL-OTH	01	NONE 9	TURN-L										02
CITY							TH	WOODBURN	MN 0		PACIFIC HY 99E	NE	(NONE)	STOP SIGN	N	DRY	TURN		N/A	W -NE								018		00
N							4P	WOODBURN UA	31.65		HILLSBORO-SILV HY	05			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 9 6.91	-122 49 50.41			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					
01131	N	N	N	N	N	N	03/18/2016	MARION	1 14			INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 9	TURN-R										100	08
CITY							FR	WOODBURN	MN 0		WOODBURN-ESTACADA H	N		TRF SIGNAL	N	DRY	FIX		N/A	E -N								000		00
N							5P	WOODBURN UA	31.70		PACIFIC HY 99E	05	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 9 4.66	-122 49 52.38			008100100S00															UNK					
04475	N	N	N	N	N	N	10/12/2016	MARION	1 14			INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY							WE	WOODBURN	MN 0		HILLSBORO-SILV HY	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW								000		00
N							10A	WOODBURN UA	31.70		PACIFIC HY 99E	06	0		N	DAY	INJ		TRUCK		01	DRVR	INJC	40	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	40	M	OR-Y		000	000		00
																										OR<25					
00417	N	N	N	N	N	N	01/29/2016	MARION	1 14			INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT											29
CITY							FR	WOODBURN	MN 0		HILLSBORO-SILV HY	NE		TRF SIGNAL	N	WET	REAR		N/A	NE-SW								000		00
N							5P	WOODBURN UA	31.70		PACIFIC HY 99E	06	0		N	DUSK	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	NE-SW								011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
02580	N	N	N	N			06/11/2016	MARION	1 14			INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE							SA	WOODBURN	MN 0		WOODBURN-ESTACADA H	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N								000		00
N							3P	WOODBURN UA	31.70		PACIFIC HY 99E	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								011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
02787	N	N	N	N			07/04/2016	MARION	1 14			INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY							MO	WOODBURN	MN 0		WOODBURN-ESTACADA H	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	W -E								000		00
N							9P	WOODBURN UA	31.70		PACIFIC HY 99E	04	1		N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	28	F	OR-Y		097	000		00
N							45 9 4.66	-122 49 52.38			008100100S00															OR<25					

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2016 to 12/31/2016, Both Add and Non-Add mileage

6 - 7 of 7 Crash records shown.

SER# INVEST RD DPT UNLOC?	S P E E D	 A L C	D R U G S	M J I N V	 S C H L	 W 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 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
																	02	NONE 0	STRGHT											
																		PRVTE	S -N									000		00
																		PSNGR CAR		01	DRVR	NONE	39	M	OR-Y OR>25		097	000		00
05249	N	N	N	N	N	N	11/26/2016	MARION	1 14		STRGHT		N	Y	RAIN	FIX OBJ	01	NONE 9	STRGHT										040,062 ,001	16
CITY							SA	WOODBURN	MN 0	PACIFIC HY 99E	S	(NONE)	UNKNOWN	N	WET	FIX		N/A	S -N									000		00
Y							6P	WOODBURN UA	31.74	WOODBURN-ESTACADA H	08			N	DLIT	PDO		MTRCYCLE		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 9 2.89	-122 49 53.97		008100100S00		(04)													UNK					

081: PACIFIC HIGHWAY EAST

Highway 081 ALL ROAD TYPES, MP 31.65 to 31.74 01/01/2017 to 12/31/2017, Both Add and Non-Add mileage

1 - 5 of 7 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S I N H	W C O R	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG TYP / MILEPNT	FC	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	A GE	S EX	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04036	N	N	N	N		09/26/2017	MARION	1	16		STRGHT		Y	N	CLR	O-1STOP	01	NONE 9	BACK											10
CITY						TU	WOODBURN	MN 0		PACIFIC HY 99E	NE	(NONE)	UNKNOWN	N	DRY	BACK		N/A	UN-UN									000	00
N						3P	WOODBURN UA	31.67		HILLSBORO-SILV HY	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				
05247	N	N	N	N		12/05/2017	MARION	1	16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						TU	WOODBURN	MN 0		HILLSBORO-SILV HY	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW								000	00
N						2P	WOODBURN UA	31.70		PACIFIC HY 99E	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				
00346	N	N	N	N	N	01/27/2017	MARION	1	14		INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT											07
CITY						FR	WOODBURN	MN 0		WOODBURN-ESTACADA H	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N								000	00
N						10A	WOODBURN UA	31.70		PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	56	F	OR-Y	043,026	000	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	000		00
																									OR<25				
04476	N	N	N	N		10/21/2017	MARION	1	14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-R											02
NO RPT						SA	WOODBURN	MN 0		WOODBURN-ESTACADA H	CN		TRF SIGNAL	N	WET	TURN		PRVTE	E -N								000	00
N						7P	WOODBURN UA	31.70		PACIFIC HY 99E	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	000		00
																									OR<25				
04442	N	N	N	N		10/20/2017	MARION	1	14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-R											02
NONE						FR	WOODBURN	MN 0		WOODBURN-ESTACADA H	CN		TRF SIGNAL	N	DRY	TURN		N/A	E -N								000	00
N						2P	WOODBURN UA	31.70		PACIFIC HY 99E	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				

SER# / INVEST / RD DPT / UNLOC?	S P / E D	A	D R / U G	M J / N V	S / H L	W / O / R / K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A GE	S EX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05532	N	N	N	N	N	N	12/21/2017	MARION	1	14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										04
CITY			TH				WOODBURN	WOODBURN	MN 0		WOODBURN-ESTACADA H	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -E								022		00
N			5P				WOODBURN UA	31.70			PACIFIC HY 99E	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					
05491	N	N	N	N	N	N	12/20/2017	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
CITY			WE				WOODBURN	WOODBURN	MN 0		PACIFIC HY 99E	S	(NONE)	L-GRN-SIG	N	DRY	REAR		PRVTE	S -N								000		00
N			10A				WOODBURN UA	31.72			WOODBURN-ESTACADA H	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					
																		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					

140: HILLSBORO-SILVERTON

Highway 140 ALL ROAD TYPES, MP 39.24 to 39.29 01/01/2013 to 12/31/2013, Both Add and Non-Add mileage

1 - 4 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P / E D	A L C	D R / U G S	M J / N I V	S C / H L	W O / R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03446	N	N	N	N			10/04/2013	MARION	1	14		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT									013	
CITY			FR				WOODBURN	MN 0	HILLSBORO-SILV HY		W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W -E								000		00
N			5P				WOODBURN UA	39.25	PACIFIC HY 99E		03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		026	000		07
N			45 9 4.7381039				-122 49 55.4148839		014000100S00			(04)														OR<25					
																		02	NONE 0	STOP									011	013	00
																			PRVTE	W -E								000		00
																			PSNGR CAR		01	DRVR	INJC	22	F	OR-Y		000	000		00
																										OR<25					
																		03	NONE 0	STOP									022		00
																			PRVTE	W -E								000		00
																			PSNGR CAR		01	DRVR	INJC	35	M	OR-Y		000	000		00
																										OR<25					
04207	N	N	N	N			11/27/2013	MARION	1	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											13
NONE			WE				WOODBURN	MN 0	HILLSBORO-SILV HY		W	(NONE)	L-TURN REF	N	DRY	SS-O		PRVTE	W -E								000		00
N			3P				WOODBURN UA	39.26	PACIFIC HY 99E		04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		045	000		13
N			45 9 4.718772				-122 49 54.6549959		014000100S00			(04)														OR<25					
																		02	NONE 0	STRGHT									000		00
																			PRVTE	W -E								000		00
																			PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		000	000		00
																										OR<25					
01047	N	N	N	N			04/06/2013	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE			SA				WOODBURN	MN 0	HILLSBORO-SILV HY		W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000		00
N			9A				WOODBURN UA	39.27	PACIFIC HY 99E		06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		07
N			45 9 4.6994399				-122 49 53.8951079		014000100S00																	UNK					
																		02	NONE 0	STOP									011		00
																			PRVTE	W -E								000		00
																			PSNGR CAR		01	DRVR	NONE	64	F	OR-Y		000	000		00
																										OR<25					
00688	N	N	N	N			03/05/2013	MARION	1	14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	TURN-R											07
NO RPT			TU				WOODBURN	MN 0	HILLSBORO-SILV HY		SW		R-GRN-SIG	N	WET	REAR		PRVTE	W -S								000		00
N			6P				WOODBURN UA	39.29	PACIFIC HY 99E		09	1		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		026	000		07
N			45 9 4.6608479				-122 49 52.3771319		014000100S00																	OR<25					
																		02	NONE 0	STOP									013		00
																			PRVTE	W -S								000		00
																			PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		000	000		00
																										OR<25					

SER# / INVEST / RD DPT / UNLOC?	S P / E D	A	D R / U	M J / I	S / C	W / O / R / K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01463	N D	N	N	N			05/08/2013	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	TURN-R										07
NONE			WE					WOODBURN	MN 0		HILLSBORO-SILV HY	SW		STOP SIGN	N	DRY	REAR		PRVTE	W -S								000		00
N			12P					WOODBURN UA	39.29		PACIFIC HY 99E	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	76	F	OR-Y		026	000		07
N			45 9 4.6608479				-122 49 52.3771319				014000100S00															OR>25					
																		02	NONE 0	STOP										
																			PRVTE	W -S								013		00
																			PSNGR CAR		01	DRVR	INJC	60	F	OR-Y		000	000		00
																										OR<25					
																		02	NONE 0	STOP										
																			PRVTE	W -S								013		00
																			PSNGR CAR		02	PSNG	INJC	51	F			000	000		00
01920	N D	N	N	N			06/12/2013	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	TURN-R										07
NONE			WE					WOODBURN	MN 0		HILLSBORO-SILV HY	SW		STOP SIGN	N	DRY	REAR		PRVTE	W -SW								000		00
N			11A					WOODBURN UA	39.29		PACIFIC HY 99E	09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000		07
N			45 9 4.6608479				-122 49 52.3771319				014000100S00															UNK					
																		02	NONE 0	STOP										
																			PRVTE	W -SW								011		00
																			PSNGR CAR		01	DRVR	NONE	63	F	OR-Y		000	000		00
																										OR<25					

140: HILLSBORO-SILVERTON

Highway 140 ALL ROAD TYPES, MP 39.24 to 39.29 01/01/2014 to 12/31/2014, Both Add and Non-Add mileage

1 - 4 of 4 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S I N V	C N H L	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00054	N	N	N	N			01/07/2014	MARION	1	14		STRGHT		Y	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE							TU	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	W -E								000		00
N							3P	WOODBURN UA	39.25		PACIFIC HY 99E	03			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	55	M	OR-Y		026	000		07
N							45 9 4.738176	-122 49 55.416684			014000100S00		(03)													OR<25					
																		02	NONE 0	STOP										
																			PRVTE	W -E								011		00
																			PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		000	000		00
																										OR<25					
02111	N	N	N	N	N	N	06/27/2014	MARION	1	14		STRGHT		N	N	CLD	O-STRGHT	01	NONE 0	STRGHT										05
CITY							FR	WOODBURN	MN 0		PACIFIC HY 99E	W	(NONE)	NONE	N	DRY	HEAD		PRVTE	E -W								000		00
Y							4P	WOODBURN UA	39.25		HILLSBORO-SILV HY	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	39	M	OR-Y		039,080	000		05
N							45 9 4.738176	-122 49 55.416684			014000100S00		(04)													OR<25					
																		02	NONE 0	STRGHT										
																			PRVTE	W -E								000		00
																			PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		000	000		00
																										OR<25					
04710	N	N	N	N	N	N	12/29/2014	MARION	1	14		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY							MO	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W -E								000		00
N							5P	WOODBURN UA	39.25		PACIFIC HY 99E	03			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	65	M	OR-Y		026	000		07
N							45 9 4.74	-122 49 55.42			014000100S00		(03)													OR<25					
																		02	NONE 0	STOP										
																			PRVTE	W -E								011	013	00
																			PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		000	000		00
																										OR<25					
																		03	NONE 0	STOP										
																			PRVTE	W -E								011		00
																			PSNGR CAR		01	DRVR	NONE	43	M	OR-Y		000	000		00
																										OR<25					
02826	Y	N	N	N	N	N	08/21/2014	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										01,07
CITY							TH	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W -E								000		00
N							9P	WOODBURN UA	39.27		PACIFIC HY 99E	03			N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	28	M	NONE		047,026	000		01,07
N							45 9 4.6995119	-122 49 53.8969079			014000100S00		(03)													OR<25					
																		02	NONE 0	STOP										
																			PRVTE	W -E								011		00
																			PSNGR CAR		01	DRVR	INJC	16	M	OR-Y		000	000		00
																										OR<25					

140: HILLSBORO-SILVERTON

Highway 140 ALL ROAD TYPES, MP 39.24 to 39.29 01/01/2015 to 12/31/2015, Both Add and Non-Add mileage

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R E L	M J U G	S I N H	W C O R	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05183	N	N	N	N	N	12/23/2015	MARION	1	14		INTER	CROSS	N	N	RAIN	O-1STOP	01	NONE 0	BACK										10
CITY						WE	WOODBURN	MN	0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	BACK		PRVTE	E -W								000		00
N						1P	WOODBURN UA	39.29		PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		011	000		10
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	31	F	OR-Y		000	000		00
																									OR<25				
00603	N	N	N	N		02/09/2015	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						MO	WOODBURN	MN	0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000		00
N						UNK	WOODBURN UA	39.29		PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		026	000		29
N						45 9 4.66	-122 49 52.38			014000100S00															UNK					
																	02	NONE 0	STOP										
																		PRVTE	W -E								011		00
																		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		000	000		00
																									UNK				
01653	N	N	N	N	N	05/07/2015	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY						TH	WOODBURN	MN	0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000		00
N						2P	WOODBURN UA	39.29		PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y	043,026	000	000		07
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	42	M	OR-Y	000	000	000		00
																									OR>25				

140: HILLSBORO-SILVERTON

Highway 140 ALL ROAD TYPES, MP 39.24 to 39.29 01/01/2016 to 12/31/2016, Both Add and Non-Add mileage

1 - 4 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R E C	M J U G	S I N S	C H V	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP	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 / TO / FROM	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05598	N	N	N	N			12/16/2016	MARION	1	14		STRGHT		Y	N	UNK	S-1STOP	01	NONE 9	STRGHT										29
NONE							FR	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	UNK	REAR		N/A	W -E								000		00
N							4P	WOODBURN UA	39.24		PACIFIC HY 99E	00			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 9 4.76	-122 49 56.18			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					
03085	N	N	N	N			07/23/2016	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NO RPT							SA	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W -E								000		00
N							3P	WOODBURN UA	39.25		PACIFIC HY 99E	04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	31	F	OR-Y		026	000		29
N							45 9 4.74	-122 49 55.42			014000100S00		(04)													OR<25					
																		01	NONE 0	STRGHT											
																			PRVTE	W -E								000		00
																			PSNGR CAR		02	PSNG	NO<5	04	M			000	000		00
																		02	NONE 0	STOP											
																			PRVTE	W -E								011		00
																			PSNGR CAR		01	DRVR	INJC	62	M	OR-Y		000	000		00
																										OR<25					
02314	Y	Y	N	N	N	N	06/04/2016	MARION	1	14		STRGHT		N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										040	35,33,30
CITY							SA	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	DRY	FIX		PRVTE	E -W								000	040	00
Y							12A	WOODBURN UA	39.25		PACIFIC HY 99E	08			N	DLIT	INJ		PSNGR CAR		01	DRVR	INJA	20	M	OR-Y		051,050,081	017		33,30
N							45 9 4.74	-122 49 55.42			014000100S00		(04)													OR<25					
																		02	NONE 0	STRGHT											
																			PRVTE	W -E								000		00
																			PSNGR CAR		01	DRVR	INJA	61	M	OR-Y		000	000		00
																										OR>25					
04872	N	N	N	N			11/04/2016	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										07,29
NONE							FR	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W -E								000		00
N							1P	WOODBURN UA	39.26		PACIFIC HY 99E	03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	33	F	OR-Y		043,026	000		07,29
N							45 9 4.72	-122 49 54.66			014000100S00		(04)													OR<25					
																		02	NONE 0	STOP											
																			PRVTE	W -E								011		00
																			PSNGR CAR		01	DRVR	INJC	86	M	OR-Y		000	000		00
																										OR<25					
01226	N	N	N	N			03/24/2016	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE							TH	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	DRY	REAR		N/A	W -E								000		00
N							11A	WOODBURN UA	39.26		PACIFIC HY 99E	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 9 4.72	-122 49 54.66			014000100S00		(04)													UNK					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	C O R K	W 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	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE 9 N/A PSNGR CAR	STOP W -E	01	DRVR	NONE	00	Unk	UNK UNK		000	011 000		00 00
02917 CITY	N	N	N	N	N	N	07/13/2016 WE	MARION WOODBURN	1 14 MN 0	HILLSBORO-SILV HY	INTER W	CROSS	N STOP SIGN	N N	CLR DRY	PED PED	01	NONE 0 PRVTE	TURN-R W -SW										27,02 00
N			12P				45 9 4.7	WOODBURN UA -122 49 53.9	39.27	PACIFIC HY 99E 014000100S00	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		016,029	038		27,02
																			- STRGHT SW NE	01	PED	INJB	26	F		I XWLK	000	000		00

140: HILLSBORO-SILVERTON

Highway 140 ALL ROAD TYPES, MP 39.24 to 39.29 01/01/2017 to 12/31/2017, Both Add and Non-Add mileage

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A C	M J U S	S I N V	C H L	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG TYP / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00265	N	N	N	N			01/20/2017	MARION	1	14		STRGHT		Y	N	CLD	S-1STOP	01	NONE 9	STRGHT										07
CITY							FR	WOODBURN	MN 0		HILLSBORO-SILV HY	W	(NONE)	UNKNOWN	N	WET	REAR		N/A	W -E								000		00
N							7A	WOODBURN UA	39.25		PACIFIC HY 99E	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					
03029	N	N	N	N			07/26/2017	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							WE	WOODBURN	MN 0		HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000		00
N							3P	WOODBURN UA	39.29		PACIFIC HY 99E	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	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	STRGHT										07
CITY							TU	WOODBURN	MN 0		HILLSBORO-SILV HY	W		L-GRN-SIG	N	DRY	REAR		PRVTE	W -E								000		00
N							1P	WOODBURN UA	39.29		PACIFIC HY 99E	06	1		N	DAY	INJ		SEMI TOW		01	DRVR	INJC	55	M	OTH-Y	043,026	000	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	000		00
																										OR<25					

CONTINUOUS SYSTEM CRASH LISTING

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.00 to 0.44 01/01/2013 to 12/31/2013, Both Add and Non-Add mileage

1 - 5 of 7 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S D M / P R J S W / E A U I C O / 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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00037	N N N N	01/04/2013	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										07
NONE		FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR	PRVTE	E -W								000		00
N		3P	WOODBURN UA	0.00	PACIFIC HY 99E	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	00	M	OR-Y		026	000		07
N		45 9 4.660704	-122 49 52.3754759		016100100S00													OR<25					
												02 NONE 0	STOP										
												PRVTE	E -W								011		00
												PSNGR CAR		01 DRVR	INJB	38	M	OR-Y		000	000		00
																		OR<25					
02652	N N N N	08/09/2013	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01 NONE 0	STRGHT										07
CITY		FR	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR	PRVTE	E -W								000		00
N		8P	WOODBURN UA	0.00	PACIFIC HY 99E	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		026	000		07
N		45 9 4.660704	-122 49 52.3754759		016100100S00													UNK					
												02 NONE 0	STOP										
												PRVTE	E -W								011		00
												PSNGR CAR		01 DRVR	INJC	44	M	OR-Y		000	000		00
																		OR<25					
01603	N N N N	05/19/2013	MARION	1 14		STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT										07
NO RPT		SU	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	E -W								000		00
N		5P	WOODBURN UA	0.03	PACIFIC HY 99E	04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	71	F	OR-Y		026	000		07
N		45 9 4.511628	-122 49 50.237832		016100100S00		(02)											OR<25					
												02 NONE 0	STOP										
												PRVTE	E -W								011		00
												PSNGR CAR		01 DRVR	NONE	49	F	OR-Y		000	000		00
																		OR<25					
03764	N N N N	10/28/2013	MARION	1 14		ALLEY		N	N	CLR	ANGL-OTH	01 NONE 0	TURN-L										02
CITY		MO	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN	PRVTE	S -W								018		00
N		5P	WOODBURN UA	0.08	PACIFIC HY 99E	03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	16	M	OR-Y		028	000		02
N		45 9 4.449456	-122 49 46.707384		016100100S00		(02)											OR<25					
												02 NONE 0	STRGHT										
												PRVTE	W -E								000		00
												PSNGR CAR		01 DRVR	INJC	36	F	OR-Y		000	000		00
																		OR>25					
00174	N N N N N N	01/15/2013	MARION	1 14		STRGHT		Y	N	CLD	S-1STOP	01 NONE 0	STRGHT										07
CITY		TU	WOODBURN	MN 0	WOODBURN-ESTACADA H	W	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	W -E								000		00
N		2P	WOODBURN UA	0.22	JUNE WAY	03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	00	M	UNK		026	000		07
N		45 9 4.497984	-122 49 36.4136519		016100100S00		(02)											UNK					
												02 NONE 0	STOP										
												PRVTE	W -E								011		00
												PSNGR CAR		01 DRVR	INJC	18	F	OR-Y		000	000		00
																		OR<25					

SER# / INVEST / RD DPT / UNLOC?	S P / E D	A	D R / U G / S	M J / N I / V	S C / H	W O / L	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04646	N	Y	N	N	N	N	12/26/2013	MARION	1 14		INTER	3-LEG	N	Y	FOG	FIX OBJ	01	NONE 0	STRGHT										079	03
CITY							TH		MN 0		N		STOP SIGN	N	WET	FIX		PRVTE	S -N									000	079	00
N							3A	WOODBURN UA	0.38		06	0		N	DARK	INJ		PSNGR CAR		01	DRVR	INJB	27	M	OR-Y		021	088		03
N							45 9 4.388832	-122 49 24.775392		016100100S00															OR<25					
																	01	NONE 0	STRGHT											
																		PRVTE	S -N									000	079	00
																		PSNGR CAR		02	PSNG	INJB	25	M			000	000		00
01741	N	N	N	N	N	N	05/30/2013	MARION	1 14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
STATE							TH		MN 0		CN		STOP SIGN	N	DRY	ANGL		PRVTE	W -E									000		00
N							7A	WOODBURN UA	0.38		04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	32	M	OR-Y		000	000		00
N							45 9 4.388832	-122 49 24.775392		016100100S00															OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	S -N									015		00
																		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		028	000		02
																									OR<25					

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.00 to 0.44 01/01/2014 to 12/31/2014, Both Add and Non-Add mileage

1 - 4 of 5 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J N V	S I H L	C N S K	W O R	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01950	N	N	N	N	N	N	N	06/13/2014	MARION	1	14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	TURN-R											02
CITY			FR					WOODBURN	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		UNKNOWN	N	DRY	PED		PRVTE	E -N								000		00
N			10A					WOODBURN UA	0.00			PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		029	000		02
N			45 9 4.6608479					-122 49 52.377168				016100100S00															OR<25					
																					- STRGHT	01	PED	INJB	15	M		I XWLK	000	000		00
																					S N											
01725	N	N	N	N				05/25/2014	MARION	1	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE			SU					WOODBURN	WOODBURN	MN 0		WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	E -W								000		00
N			3P					WOODBURN UA	0.02			PACIFIC HY 99E	04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		026	000		07
N			45 9 4.562352					-122 49 50.9649239				016100100S00		(02)													OR<25					
																			02	NONE 0	STOP											
																				PRVTE	E -W								011		00
																				PSNGR CAR		01	DRVR	INJC	26	F	OR-Y		000	000		00
																											OR<25					
00368	N	N	N	N	N	N		02/05/2014	MARION	1	14		ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										013	02
CITY			WE					WOODBURN	WOODBURN	MN 0		WOODBURN-ESTACADA H	E	(NONE)	STOP SIGN	N	DRY	TURN		PRVTE	S -W								018	013	00
N			5P					WOODBURN UA	0.08			PACIFIC HY 99E	04			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		028	000		02
N			45 9 4.449492					-122 49 46.709112				016100100S00		(02)													OR<25					
																			02	NONE 0	STRGHT											
																				PRVTE	E -W								000		00
																				PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		000	000		00
																											OR<25					
																			03	NONE 0	STRGHT											
																				PRVTE	W -E								000		00
																				PSNGR CAR		01	DRVR	NONE	48	F	OR-Y		000	000		00
																											OR<25					
01273	N	N	N	N	N	N	N	04/20/2014	MARION	1	14		STRGHT		N	N	CLD	S-1STOP	01	NONE	STRGHT											27,07
CITY			SU					WOODBURN	WOODBURN	MN 0		WOODBURN-ESTACADA H	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	E -W								000		00
N			2P					WOODBURN UA	0.18			JUNE WAY	04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		016,026	038		27,07
N			45 9 4.48416					-122 49 39.356508				016100100S00		(02)													OR<25					
																			02	NONE 0	STOP											
																				PRVTE	E -W								011		00
																				PSNGR CAR		01	DRVR	INJC	38	M	OR-Y		000	000		00
																											OR>25					
02018	N	N	N	N	N	N		06/19/2014	MARION	1	14		STRGHT		N	N	CLR	O-STRGHT	01	NONE 0	STRGHT											16
STATE			TH							MN 0			UN	(NONE)	UNKNOWN	N	DRY	HEAD		PRVTE	E -W								000		00
Y			5P					WOODBURN UA	0.34				03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	30	M	SUSP		080	025		16
N			45 9 4.418928					-122 49 27.6846239				016100100S00		(02)													OR<25					

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

SER# INVEST RD DPT UNLOC?	S P E E D	A L C	D R U G S	M J I N V	S C H L	W 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 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
																	01	NONE 0	STRGHT											
																		PRVTE	E -W									000		00
																		PSNGR CAR		02	PSNG	INJC	30	M			000	000		00
																	01	NONE 0	STRGHT											
																		PRVTE	E -W									000		00
																		PSNGR CAR		03	PSNG	INJB	55	M			000	000		00
																	01	NONE 0	STRGHT											
																		PRVTE	E -W									000		00
																		PSNGR CAR		04	PSNG	INJA	20	M			000	000		00
																	02	NONE 0	STRGHT											
																		PRVTE	W -E									000		00
																		PSNGR CAR		01	DRVR	INJA	57	M	OR-Y		000	000		00
																									OR<25					

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.00 to 0.44 01/01/2015 to 12/31/2015, Both Add and Non-Add mileage

1 - 5 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R E L	M J U G	S I N V	W C H L	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG TYP / MILEPNT	FC	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01257	N	N	N	N	N	04/08/2015	MARION	1	16		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 1	STRGHT										054	
CITY						WE	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W								000	054	00
N						7A	WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	67	M	OR-Y		043,026	000		07
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	47	M	OR-Y		000	000		00
																									OR<25					
01315	N	N	N	N		04/12/2015	MARION	1	16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NO RPT						SU	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W								000		00
N						5P	WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000		29
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	NONE	49	M	OR-Y		000	000		00
																									OR<25					
01586	N	N	N	N		04/18/2015	MARION	1	16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						SA	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W								000		00
N						7P	WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000		29
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	NONE	21	F	OR-Y		000	000		00
																									OR<25					
01713	N	N	N	N	N	05/12/2015	MARION	1	16		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY						TU	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W								000		00
N						11A	WOODBURN UA	0.00		PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		043,026	000		07
N						45 9 4.66	-122 49 52.38			016100100S00															OR<25					
																	02	NONE 1	STOP											
																		PRVTE	E -W								011		00
																		SEMI TOW		01	DRVR	NONE	23	M	OR-Y		000	000		00
																									OR<25					
02600	N	N	N	N		07/10/2015	MARION	1	16		ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE						FR	WOODBURN	MN	0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	W -E								000		00
N						5P	WOODBURN UA	0.06		PACIFIC HY 99E	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		000	000		00
N						45 9 4.47	-122 49 48.13			016100100S00		(02)													OR<25					
																	02	NONE 0	TURN-L											
																		PRVTE	N -E								018		00
																		PSNGR CAR		01	DRVR	NONE	51	F	OR-Y		028	000		02
																									OR<25					

6 - 6 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P / E / E / D	A / L / C	D R / U / G / S	M J / S / N / V	I / H / L	C / R / K	W / O	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	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	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04792	N	N	N	N	N	N	N	12/02/2015	MARION	1	16		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											02
CITY			WE						WOODBURN	MN	0	WOODBURN-ESTACADA H	CN		STOP SIGN	N	WET	TURN		PRVTE	W -E									000		00
N			10A						WOODBURN UA	0.23		JUNE WAY	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	25	M	OTH-Y		000	000		00
N			45 9 4.5						-122 49 35.68			016100100S00															N-RES					
																			01	NONE 0	STRGHT											
																				PRVTE	W -E								000		00
																				PSNGR CAR		02	PSNG	INJC	29	M			000	000		00
																			02	NONE 0	TURN-L											
																				PRVTE	SW-W								015		00
																				PSNGR CAR		01	DRVR	INJB	24	M	OR-Y		028	000		02
																											OR<25					

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.00 to 0.44 01/01/2016 to 12/31/2016, Both Add and Non-Add mileage

1 - 3 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	R G S	J U N V	S I H L	C N L	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG TYP / MILEPNT	FC	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 / TO / FROM	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04926	N	N	N	N	N	N	N	11/07/2016	MARION	1 16			INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY								MO	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W								000		00
N								9A	WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		026	000		29
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	19	F	OR-Y	000	000		00
																											OR<25				
																			02	NONE 0	STOP										
																				PRVTE	E -W								011		00
																				PSNGR CAR		02	PSNG	INJC	54	F		000	000		00
																			02	NONE 0	STOP										
																				PRVTE	E -W								011		00
																				PSNGR CAR		03	PSNG	INJC	56	F		000	000		00
																			02	NONE 0	STOP										
																				PRVTE	E -W								011		00
																				PSNGR CAR		04	PSNG	INJC	56	F		000	000		00
05739	N	N	N	N	N	N		12/27/2016	MARION	1 16			INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
CITY								TU	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W								000		00
N								2P	WOODBURN UA	0.00		PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	89	F	OR-Y	043,026	000		07
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	66	M	OR-Y	000	000		00
																											OR>25				
																			02	NONE 0	STOP										
																				PRVTE	E -W								011		00
																				PSNGR CAR		02	PSNG	INJC	65	F		000	000		00
03768	Y	N	N	N	N	N		08/31/2016	MARION	1 16			INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT											01,29
CITY								WE	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		N/A	E -W								000		00
N								11A	WOODBURN UA	0.00		PACIFIC HY 99E	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			016100100S00															UNK				
																			02	NONE 9	STOP										
																				N/A	E -W								011		00
																				PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
																											UNK				
85114	N	N	N	N				11/05/2016	MARION	1 16			STRGHT		N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NONE								SA	WOODBURN	MN 0		HILLSBORO-SILV HY	E	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	E -W								001		00
N								12P	WOODBURN UA	0.03		PACIFIC HY 99E	04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y	026	000		29
N								45 9 4.51	-122 49 50.26			016100100S00		(02)													OR>25				

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L C	M J U G S	S N I N V	W C O H L	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	23	F	OR-Y OR<25		000	011 000		00 00
04127 CITY N N	N	N	N	N	N	09/20/2016 TU 10A 45 9 4.49	MARION WOODBURN WOODBURN UA -122 49 49.55	1 16 MN 0 0.04	 WOODBURN-ESTACADA H PACIFIC HY 99E 016100100S00	STRGHT E 03	(NONE)	N UNKNOWN	N N N	CLR DRY DAY	OVERTURN NCOL PDO	01	NONE 9 N/A SEMI TOW	STRGHT W -E	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		10 00 00
05663 CITY N N	N	N	N	N	N	12/21/2016 WE 11A 45 9 4.45	MARION WOODBURN WOODBURN UA -122 49 46.71	1 16 MN 0 0.08	 WOODBURN-ESTACADA H PACIFIC HY 99E 016100100S00	ALLEY E 03	(NONE)	N STOP SIGN N	N N N	CLR DRY DAY	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	INJC	30	M	OR-Y OR<25		000	000 000		03 00 00
02544 NONE N N	N	N	N	N	N	06/17/2016 FR 5P 45 9 4.45	MARION WOODBURN WOODBURN UA -122 49 46.71	1 16 MN 0 0.08	 WOODBURN-ESTACADA H PACIFIC HY 99E 016100100S00	ALLEY E 03	(NONE)	N STOP SIGN N	N N N	CLR DRY DAY	O-1 L-TURN TURN PDO	01 02	NONE 9 N/A PSNGR CAR NONE 0 PRVTE PSNGR CAR	TURN-L E -S TURN-L S -W	01	DRVR	NONE	00	Unk	UNK UNK OR-Y OR<25		000	019 000 018 000		02 00 00 00 03
00747 NO RPT N N	N	N	N	N		02/20/2016 SA 11A 45 9 4.45	MARION WOODBURN WOODBURN UA -122 49 46.71	1 16 MN 0 0.08	 WOODBURN-ESTACADA H PACIFIC HY 99E 016100100S00	ALLEY E 04	(NONE)	N STOP SIGN N	N N N	CLR DRY DAY	ANGL-OTH TURN PDO	01 02	NONE 9 N/A PSNGR CAR NONE 9 N/A PSNGR CAR	TURN-L S -W STRGHT E -W	01	DRVR	NONE	00	Unk	UNK UNK UNK UNK		000	018 000 000 000		02 00 00 00 00
03017 NONE N N	N	N	N	N		07/20/2016 WE 5P 45 9 4.46	MARION WOODBURN WOODBURN UA -122 49 45.24	1 16 MN 0 0.10	 WOODBURN-ESTACADA H PACIFIC HY 99E 016100100S00	STRGHT E 03	(NONE)	N UNKNOWN Y	N N N	CLR DRY DAY	S-1STOP REAR PDO	01 02	NONE 9 N/A PSNGR CAR NONE 9 N/A PSNGR CAR	STRGHT W -E STOP W -E	01	DRVR	NONE	00	Unk	UNK UNK UNK UNK		000	000 000 011 000		29 00 00 00 00

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S I N S	C N H V	W O R L	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01957	N	N	N	N	N	N	05/10/2016	MARION	1 16		STRGHT		N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											27,29
STATE							TU	WOODBURN	MN 0	WOODBURN-ESTACADA H	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W -E									000		00
N							7P	WOODBURN UA	0.26	JUNE WAY	03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	F	OR-Y		016,042	038		27,29
N							45 9 4.48	-122 49 33.5		016100100S00		(02)													OR<25					
																	02	NONE 0	STRGHT									000		00
																		PRVTE	W -E											
																		FARM TRCTR		01	DRVR	INJC	55	M	OR-Y	000	000		00
																									OR<25				
04031	N	N	N	N			09/15/2016	MARION	1 16		STRGHT		N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT										040,121 ,100	10
STATE							TH	WOODBURN	MN 0	WOODBURN-ESTACADA H	E	(NONE)	UNKNOWN	N	DRY	FIX		N/A	W -E									000		00
Y							4P	WOODBURN UA	0.31	JUNE WAY	01			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 9 4.44	-122 49 29.87		016100100S00		(02)													UNK					

161: WOODBURN-ESTACADA

Highway 161 ALL ROAD TYPES, MP 0.00 to 0.44 01/01/2017 to 12/31/2017, Both Add and Non-Add mileage

1 - 5 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S I N V	C N H L	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP / PNT	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03473	N	N	N	N			08/06/2017	MARION	1	16		INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 9	STRGHT										29
NONE							SU	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	UNK	REAR		N/A	E -W								000		00
N							12P	WOODBURN UA	0.00		PACIFIC HY 99E	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					
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					

Highway 161 ALL ROAD TYPES, MP 0.00 to 0.44 01/01/2017 to 12/31/2017, Both Add and Non-Add mileage

6 - 6 of 6 Crash records shown.

SER# INVEST RD DPT UNLOC?	S P E E D	 A L C	D R U G S	M J I N V	 S C H L	 W 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 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
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
Y							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					