

Transportation Impact Analysis

# **The Cove Mixed-use Development**

Oregon City, Oregon

**July 2015**

## Transportation Impact Analysis

# The Cove Mixed-use Development

Oregon City, Oregon

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## **Section 1**

### Executive Summary

## Executive Summary

This report presents Kittelson & Associates, Inc.'s (KAI) traffic impact analysis (TIA) for the Cove Mixed-Use Development project. The scope of this analysis and the underlying assumptions have been reviewed and approved by City staff and representatives from the Oregon Department of Transportation (ODOT). The development is planned to be constructed in five major phases, with all phases expected to be constructed by 2020. As such, the traffic analysis in this report considers full buildout of all phases.

The report includes an inventory and assessment of existing conditions; a forecast and assessment of future background traffic conditions, without the proposed development; and, an assessment of the future total traffic conditions that includes the proposed development.

### KEY FINDINGS

#### ***Year 2015 Existing Conditions***

- All of the study intersections operate within the established mobility standards of the governing agency during the weekday a.m. and p.m. peak hours.
- A review of historical crash data does not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.
- The southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection was observed to exceed the available striped lane queue storage during the weekday a.m. peak hour.

#### ***Year 2020 Background Traffic Conditions***

- Existing traffic volumes are increased by agreed upon annual growth rates to estimate the year 2020 weekday peak period traffic volumes.
- All study intersections are forecast to continue to operate within the established mobility standards of the governing agency during the weekday a.m. and p.m. peak periods.
- The southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection is forecast to continue to exceed the available striped lane queue storage during the weekday a.m. peak hour.

#### ***Development Plan***

- The proposed development plan consists of the following development:
  - 439 housing units (244 apartments and 195 condo/townhome units);
  - 14,950 square feet of restaurants (5,950 square feet of high-turnover, 8,000 square feet of quality restaurant, and 1,000 square feet coffee shop);
  - 84,212 square feet of general office space

- 50,400 square feet of medical-dental office space;
- A public marina with 150 boat slips (half to be used by on-site development); and
- A City park.
- The proposed development plan is estimated to generate approximately 6,489 net new daily vehicle trips. Of the net new daily vehicle trips, approximately 406 will occur during the a.m. peak hour, and approximately 609 will occur during the p.m. peak hour.

### **Year 2020 Total Traffic Conditions**

- All study intersections are forecast to continue to operate acceptably during the weekday a.m. and p.m. peak periods upon site buildout.
- The southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection is forecast to continue to exceed the available striped lane queue storage during the weekday a.m. peak hour. *No site-generated traffic is expected to increase the queue at this location.*

## **RECOMMENDATIONS**

The following list provides a summary of the mitigation measures recommended as part of this proposed development.

- Signage, above-ground utilities, and landscaping near the internal intersections and site access points should be maintained to ensure adequate sight distance.

Additional details of the study methodology, findings, and recommendations are provided within this report.

## **Section 2**

### Introduction

# Introduction

## PROJECT DESCRIPTION

The applicant proposes to develop a largely vacant land parcel located on the southern banks of Clackamette Cove in the City of Oregon City. Figure 1 shows the site vicinity map.

The proposed plan, illustrated in Figure 2, consists of approximately 439 housing units (244 apartments and 195 condo/townhome units); 14,950 square feet of restaurants (5,950 square feet of high-turnover, 8,000 square feet of quality restaurant, and 1,000 square feet coffee shop); 84,212 square feet of general office space, 50,400 square feet of medical-dental office space; a public marina with 150 boat slips (half to be used by on-site development); and a City park.

The development is planned to be constructed in five major phases, with all phases expected to be constructed by 2020. As such, the traffic analysis in this report considers full buildout of all phases.

## SCOPE OF THE REPORT

This analysis determines the transportation-related impacts associated with the development and was prepared in accordance with the City of Oregon City requirements for traffic impact studies. The study intersections and scope of this project were selected through conversations with City and ODOT staff.

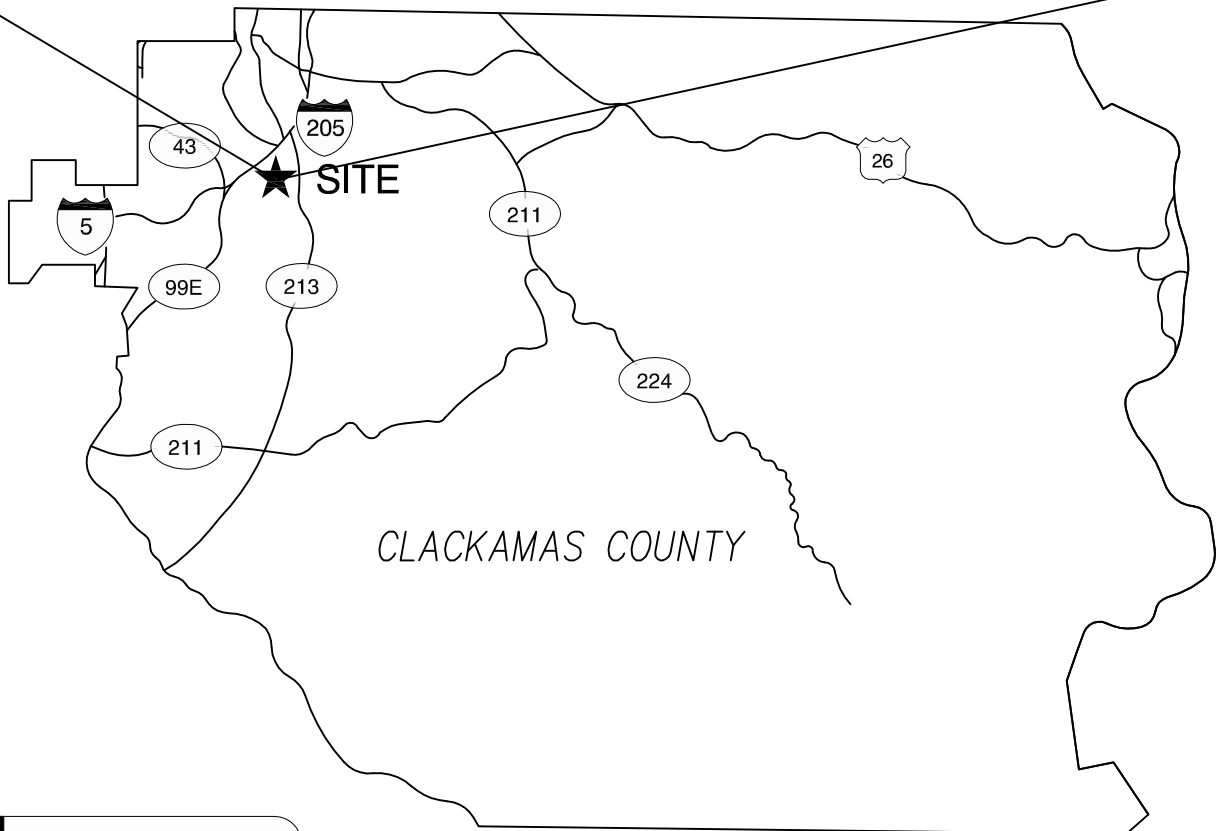
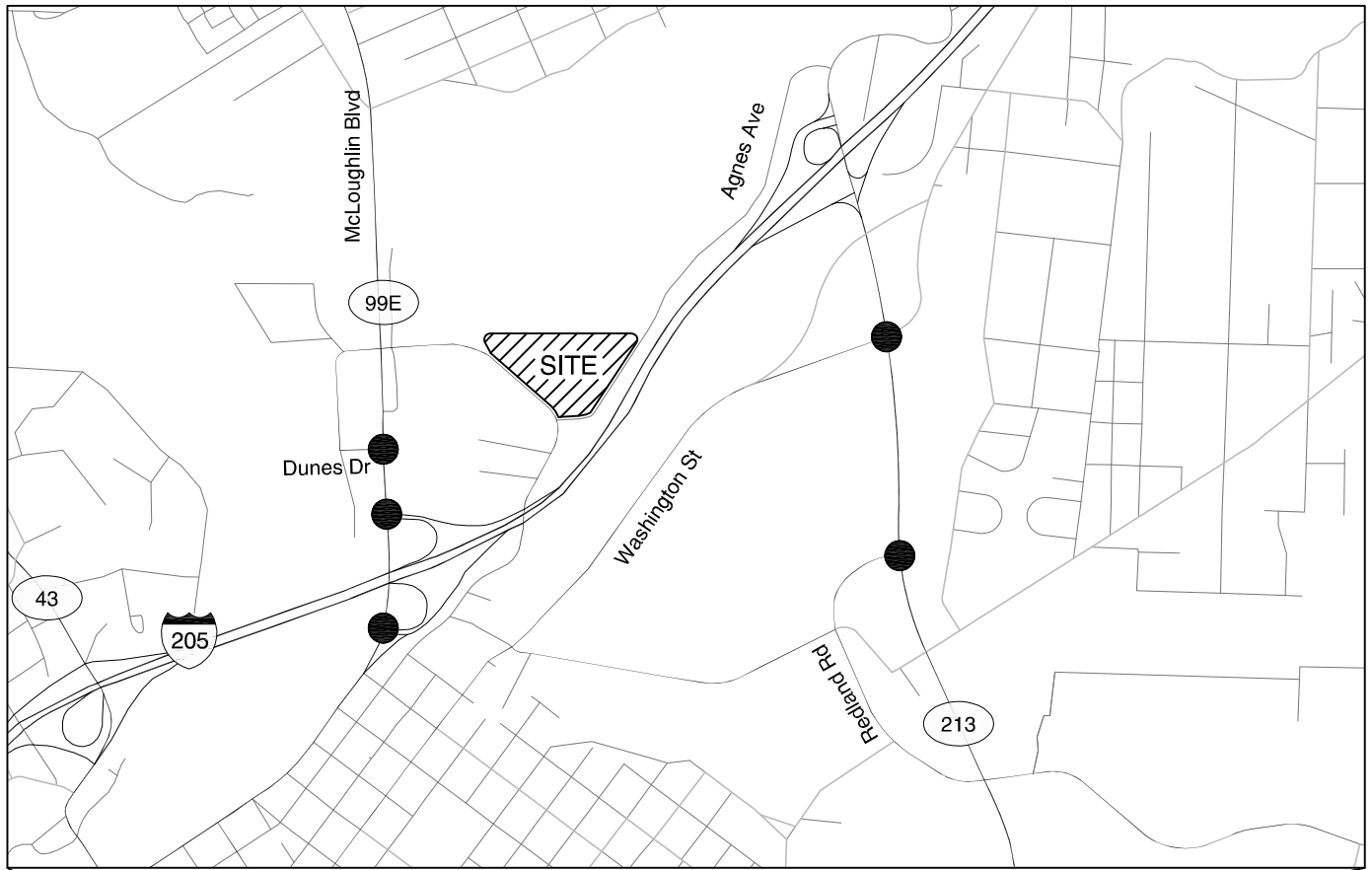
### ***Study Intersections***

Operations of the following intersections (as identified by the City and ODOT) are studied and summarized in this report:

- ORE 99E /Dunes Drive-Oregon City Shopping Center
- ORE 99E /I-205 SB Ramp Terminal
- ORE 99E /I-205 NB Ramp Terminal
- ORE 213/Washington Street
- ORE 213/Redland Road

### ***Analysis Period***

The study analyzes traffic operations during the weekday a.m. and p.m. peak hours. These are the time periods when the combination of site and background traffic volumes on the surrounding transportation system is likely to be greatest.



**LEGEND**

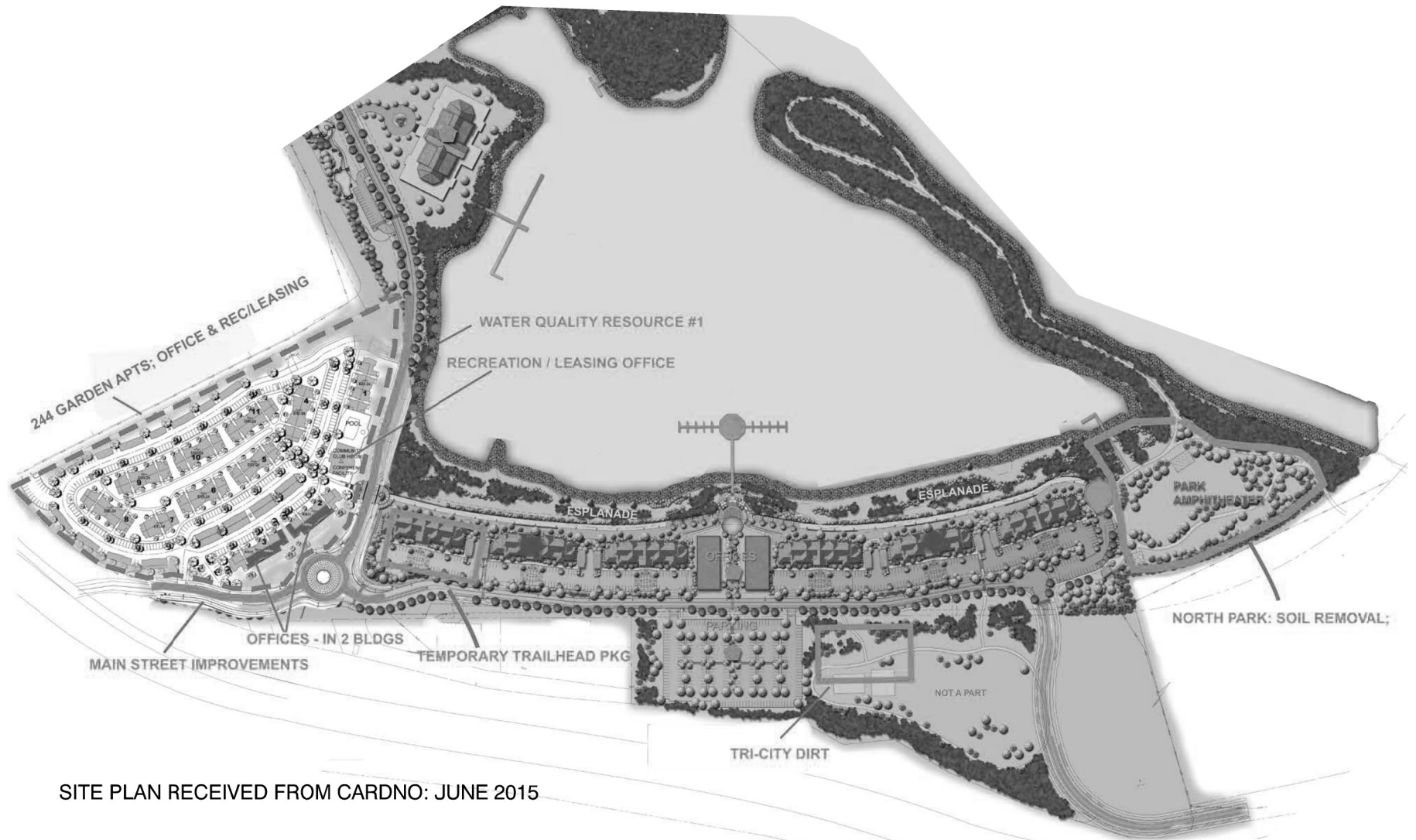
● - STUDY INTERSECTION

**SITE VICINITY  
OREGON CITY, OREGON**

FIGURE

**1**

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SITE PLAN RECEIVED FROM CARDNO: JUNE 2015

PROPOSED DEVELOPMENT PLAN  
OREGON CITY, OREGON

FIGURE  
2

## ***Analysis Scenarios***

The proposed development (all phases) is expected to be built out in year 2020. This report evaluates these transportation issues:

- Year 2015 existing land-use and transportation-system conditions within the site vicinity during the weekday a.m. and p.m. peak hours;
- Developments and transportation improvements planned in the study area;
- Forecast year 2020 background traffic conditions during the weekday a.m. and p.m. peak hours;
- Trip generation and distribution estimates for the proposed development (all phases);
- Forecast year 2020 total traffic conditions during the weekday a.m. and p.m. peak hours (with build-out of the site); and,
- Queue storage deficiencies.

Conclusions and recommendations are provided at the end of the report.

### **Section 3**

#### Existing Conditions

## Existing Conditions

The existing conditions analysis identifies the site conditions and current operational and geometric characteristics of the roadways within the study area. These conditions are compared with future conditions later in this report.

### SITE CONDITIONS AND ADJACENT LAND USES

Kittelson & Associates, Inc. (KAI) staff visited and inventoried the proposed development site and surrounding study area in July 2015. At that time, KAI collected information regarding site conditions, adjacent land uses, existing traffic operations and queuing conditions, and transportation facilities in the study area.

The proposed site is generally undeveloped and inside the City limits of Oregon City. The site fronts the Clackamette Cove to the north, the Tri-Cities Water Treatment facility to the northeast, the I-205 freeway to the southeast, and the Oregon City Shopping Center to the west. A small portion of the proposed site, to the southeast, is currently occupied by a concrete plant.

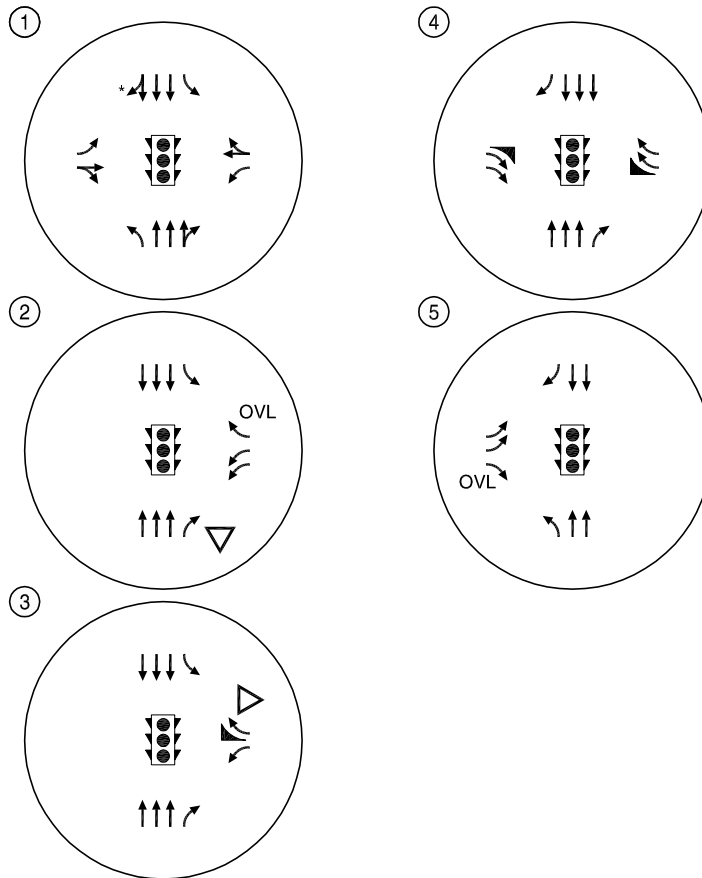
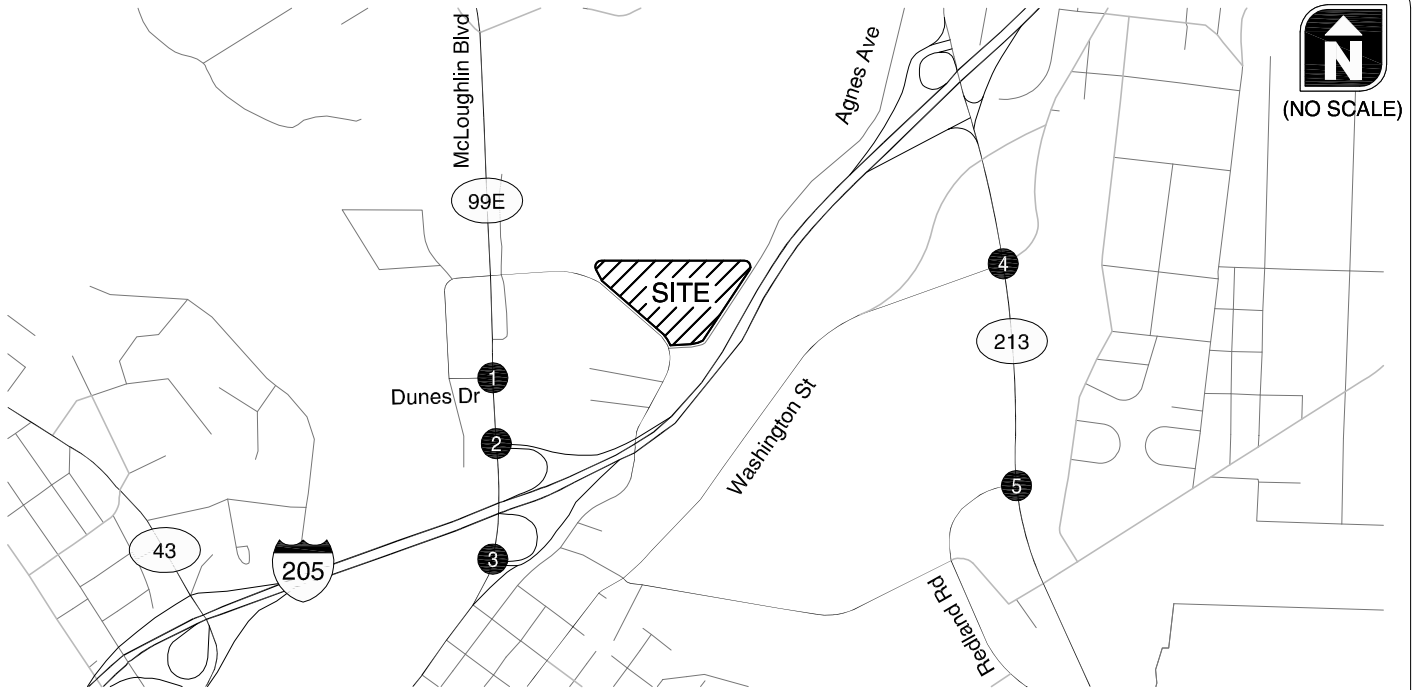
### TRANSPORTATION FACILITIES

Table 1 summarizes the existing transportation facilities that make up the study area intersections or roadway immediately adjacent or within the site development area. Figure 3 illustrates the existing lane configurations and traffic control devices at all 5 study intersections.

**Table 1 Existing Transportation Facilities**

| Roadway               | Functional Classification | Cross Section | Speed Limit (mph) | Sidewalks            | Bicycle Lanes        | On-Street Parking |
|-----------------------|---------------------------|---------------|-------------------|----------------------|----------------------|-------------------|
| I-205                 | Interstate Highway        | 4-6 lanes     | 55                | No                   | No                   | No                |
| ORE 213               | District Highway          | 5-6 lanes     | 45-55             | No                   | Shoulder             | No                |
| ORE 99E (N. of I-205) | District Highway          | 4-8 lanes     | 30-40             | Yes                  | Yes                  | No                |
| ORE 99E (S. of I-205) | Regional Highway          | 5-6 lanes     | 30-40             | Yes-South Path-North | Yes-South Path-North | No                |
| Dunes Drive           | Collector                 | 3 lanes       | NP <sup>1</sup>   | Yes                  | Yes                  | No                |
| Main Street           | Collector                 | 2 lanes       | 25                | No                   | Yes                  | No                |
| Agnes Avenue          | Collector                 | 2 lanes       | 25                | West Side            | No                   | No                |
| Washington Street     | Minor Arterial            | 5 lanes       | NP <sup>1</sup>   | Yes                  | Partial              | No                |
| Clackamas River Drive | Minor Arterial            | 3-4 lanes     | NP <sup>1</sup>   | Partial              | Yes                  | No                |
| Redland Road          | Minor Arterial            | 4-5 lanes     | 35                | No                   | Yes                  | No                |

<sup>1</sup> NP = Speed sign not posted in vicinity of study intersection.



**LEGEND**

- RAISED ISLAND
- YIELD
- OVERLAP
- STOP SIGN
- TRAFFIC SIGNAL

\*This movement operates as a flared right-turn lane.

**EXISTING LANE CONFIGURATIONS AND  
TRAFFIC CONTROL DEVICES  
OREGON CITY, OREGON**

**FIGURE  
3**

## **Pedestrian and Bicycle Facilities**

Field observations taken in the site vicinity revealed low levels of pedestrian and bicycle activity along the study area roadways during the a.m. and p.m. peak hours of the day. Sidewalks are generally not provided in the site vicinity along Main Street, but there are bicycle lanes and new continuous sidewalk facilities and a multi-use path nearby along Dunes Drive and OR 99E. The Clackamas River Trail path is also provided along the south side of Clackamette Cove leading to the northeast where it crosses over a pedestrian bridge over the Clackamas River to 82<sup>nd</sup> Drive.

## **Transit Facilities**

The study area is serviced by Tri-Met bus routes 32, 33, 34, and 79, which lead to and from Portland and the Oregon City Transit Center to the south. Bus stops for these routes are located on ORE 99E near Oregon City Shopping Center. No service exists on Main Street within the site vicinity.

## **INTERSECTION TRAFFIC COUNTS**

Manual turning movement counts were obtained at the five existing study intersections on mid-week days in the month of June 2015. The weekday morning peak hour was found to occur between 7:30 and 8:30 a.m. for the intersections in the ORE 99E corridor and between 7:05 and 8:05 a.m. for the remaining study intersections in the ORE 213 corridor. Therefore, in order to produce a conservative estimate of current morning peak hour operating conditions, the separate a.m. peak hours for these two highway corridors were analyzed. Counts showed that the weekday p.m. peak hour patterns were consistent from 5:00 to 6:00 p.m. in both corridors.

*Appendix "A" contains the traffic count summary sheets.*

## **LEVEL OF SERVICE STANDARDS**

All level of service (LOS) analyses described in this report were performed in accordance with the procedures stated in the 2010 Highway Capacity Manual (HCM, Reference 1). *A description of level of service and the criteria by which they are determined is presented in Appendix "B".* Appendix "B" also indicates how level of service is measured and what is generally considered the acceptable range of level of service.

All intersection operational analyses in this report utilized the peak 15-minute flow rate during the weekday a.m. and p.m. peak hours. Using the peak 15-minute flow rate ensures that this analysis is based on a reasonable worst-case scenario. For this reason, the analysis reflects conditions that are only likely to occur for 15 minutes out of each average peak hour. The transportation system will likely operate under conditions better than those described in this report during all other time periods.

All study intersections intersect ORE 99E or ORE 213, whereby the mobility standards of ODOT apply. ODOT uses a volume-to-capacity (v/c) ratio metric to evaluate mobility conditions. Per the Oregon Highway Plan (OHP, Reference 2), the mobility target for the study intersections along ORE

213 and ORE 99E (from the I-205 NB ramps to the north) is a v/c ratio of 1.10 or less during the peak hour. This is due to their location within a designated *Regional Center* of the Portland Metro area. This metric applies to mainline highway operations as well as intersecting street approaches and private driveways.

There is one exemption to the ODOT mobility standards stated above for ORE 99E. The updated Oregon City Transportation System Plan (TSP, Reference 3), which was adopted in June 2013, has a mobility standard exemption clause for ORE 99E at the I-205 freeway interchange. This section of the TSP states:

“State owned streets should comply with the mobility targets included in the Oregon Highway Plan. However, for proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, the OR 99E/I-205 SB Ramps, OR 99E/I-205 NB Ramps, OR 213/ Beaver Creek Road, and I-205/OR 213 Interchange intersections shall be exempt from meeting the state mobility targets until further solutions (beyond those included in the TSP) or alternative mobility targets are explored for the intersections.”

The proposed Cove Development is a land use that is consistent with the underlying zoning and a prior detailed development master plan. As such, as stated in the TSP excerpt above, the Cove Development application is exempted from meeting the ODOT mobility standard of 1.10 v/c ratio at the two ramp terminals of the I-205/OR 99E interchange. Based on conversations with the City’s traffic engineering sub-consultant, the purpose of this exemption is so that the City and ODOT can develop alternative mobility standards in the future for the interchange that promote alternative travel choices. As described later in this report, the bicycle and pedestrian connections that will be realized or enhanced (i.e. river trail) with this project meet this goal to promote alternative travel choices.

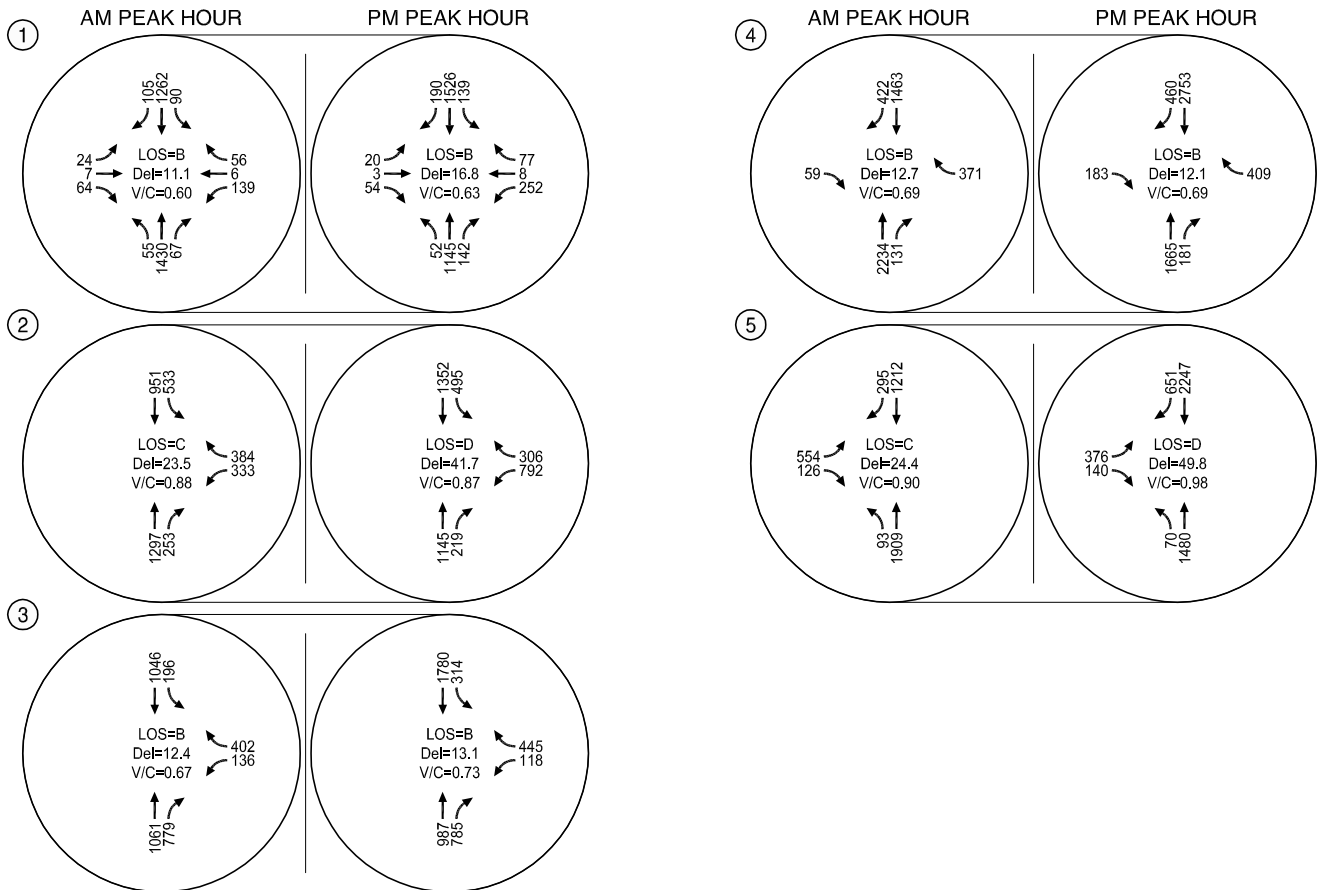
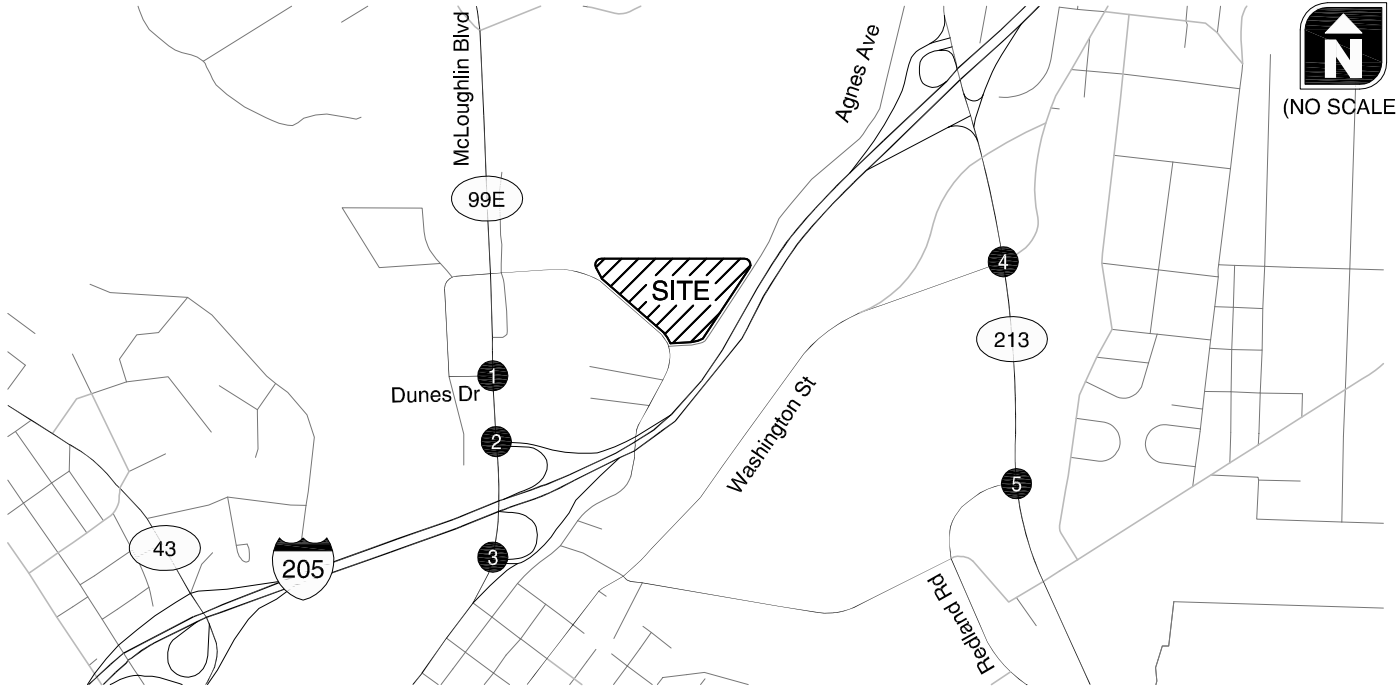
## EXISTING INTERSECTION OPERATIONS

Figure 4 summarizes the existing traffic volumes and operations for all study intersections during the weekday a.m. and p.m. peak hours. As shown, all of the study intersections currently operate at v/c ratios below the ODOT mobility standard of 1.10 or less during the weekday a.m. and p.m. peak hours.

*Appendix “C” includes the level-of-service worksheets under existing traffic conditions.*

### Queuing

The available queue storage at each of the study intersections was reviewed and field-observed during the weekday a.m. and p.m. peak hours. No queue storage deficiencies were observed except the southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection. Vehicles queues were observed to extend to Dunes Drive during the peak fifteen minutes of the weekday a.m. peak hour. No blockage through the intersection was observed. *The 95<sup>th</sup> percentile queuing analysis output sheets are provided in Appendix “I.”*

**LEGEND**

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

**EXISTING TRAFFIC OPERATIONS  
WEEKDAY AM AND PM PEAK HOURS  
OREGON CITY, OREGON**

FIGURE

**4**

## TRAFFIC SAFETY

The crash history at the study intersections was reviewed to identify potential safety issues. ODOT provided crash data from the study intersections for the five-year period: January 1, 2009 to December 31, 2013. No crashes were reported at the OR99E/Dunes Drive intersection during this period. Table 2 summarizes the crash data at the four other study intersections over the five-year period.

**Table 2 Study Intersection Crash Histories**

| Intersection                   | Number of Crashes | Collision Type |          |       |       | Severity |        |
|--------------------------------|-------------------|----------------|----------|-------|-------|----------|--------|
|                                |                   | Turning        | Rear-End | Angle | Other | PDO      | Injury |
| ORE 99E/I-205 SB Ramp Terminal | 36                | 15             | 18       | 0     | 3     | 20       | 16     |
| ORE 99E/I-205 NB Ramp Terminal | 40                | 14             | 25       | 0     | 1     | 23       | 17     |
| ORE 213/Washington Street      | 40                | 5              | 27       | 4     | 4     | 22       | 18     |
| ORE 213/Redland Road           | 22                | 5              | 16       | 0     | 1     | 6        | 16     |

### ORE 99E/I-205 SB Ramp Terminal

There were a total of seven left-turn crashes that occurred between northbound-through and southbound-left vehicles. Thirty of the reported crashes occurred either during dark (15 crashes) or wet (15 crashes) conditions.

### ORE 99E/I-205 NB Ramp Terminal

There were a total of nine rear-end crashes (southeast-northwest) and a total of eight left-turn crashes between northbound through and southbound left movements.

### ORE 213/Washington Street

Although the intersection has 27 reported rear-end collisions, the intersection geometry was reconfigured in 2012 and was under construction from 2011-2012.

### ORE 213/Redland Road

No significant patterns or trends could be identified for crashes at this intersection

No pattern or trends were identified with the provided crash data that would require mitigation as a result of the impacts of the proposed development application.

*Appendix D contains the ODOT crash data.*

**Section 4**  
Transportation Impact  
Analysis

## Transportation Impact Analysis

The transportation impact analysis identifies how the study area's transportation system will operate in the year the proposed development is expected to be fully built, year 2020. The impact of traffic generated by the proposed Cove Mixed-Use Development during the typical weekday a.m. and p.m. peak hours is examined herein.

### YEAR 2020 BACKGROUND TRAFFIC CONDITIONS

The year 2020 background traffic analysis identifies how the study area's transportation system will operate without the proposed development. This analysis includes general growth in the region, but does not include traffic from the proposed development.

#### **Traffic Volumes**

The year 2020 traffic volumes are developed by applying a per-year linear growth rate to the existing traffic volumes and adding traffic from the in-process developments in the area. Based on availability of local traffic count data, the growth rate along the analysis roadways was estimated based on observed growth from 2008 traffic volumes to 2015 collected traffic volumes used for this study. As such, the following observations and growth assumptions were applied:

- During the weekday a.m. peak hour, most intersections showed negative growth, while the Dunes/99E and I-205 SB Ramps/99E showed approximately two percent annual growth.

As a result, for the weekday a.m. peak hour, a two-percent growth was applied to the northbound- and southbound-through movements along ORE 99E and turning movements for the north and south I-205 ramp terminals. A half-percent annual growth rate was applied for all other movements along ORE 213.

- During the weekday p.m. peak hour, all study intersections showed a negative growth.

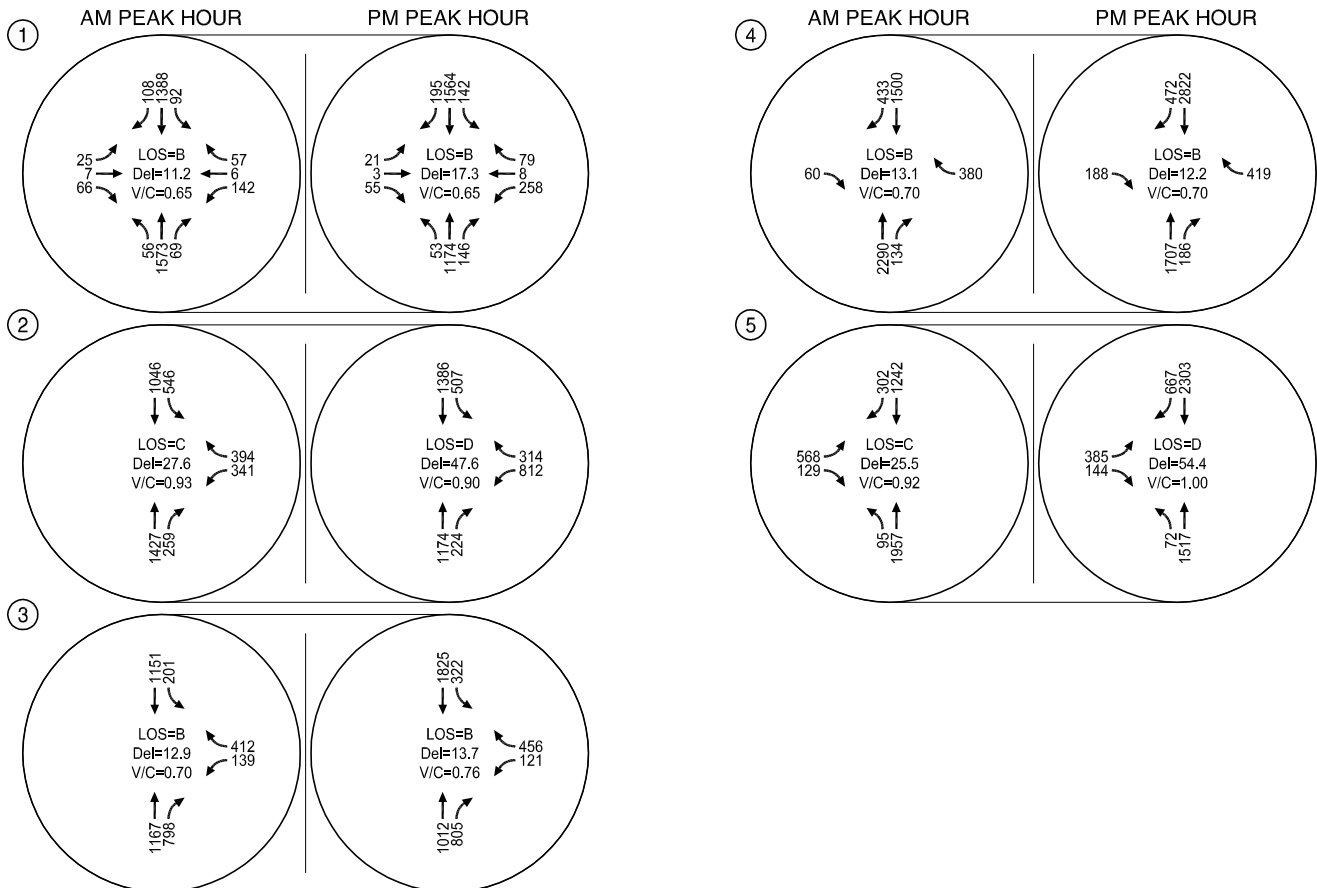
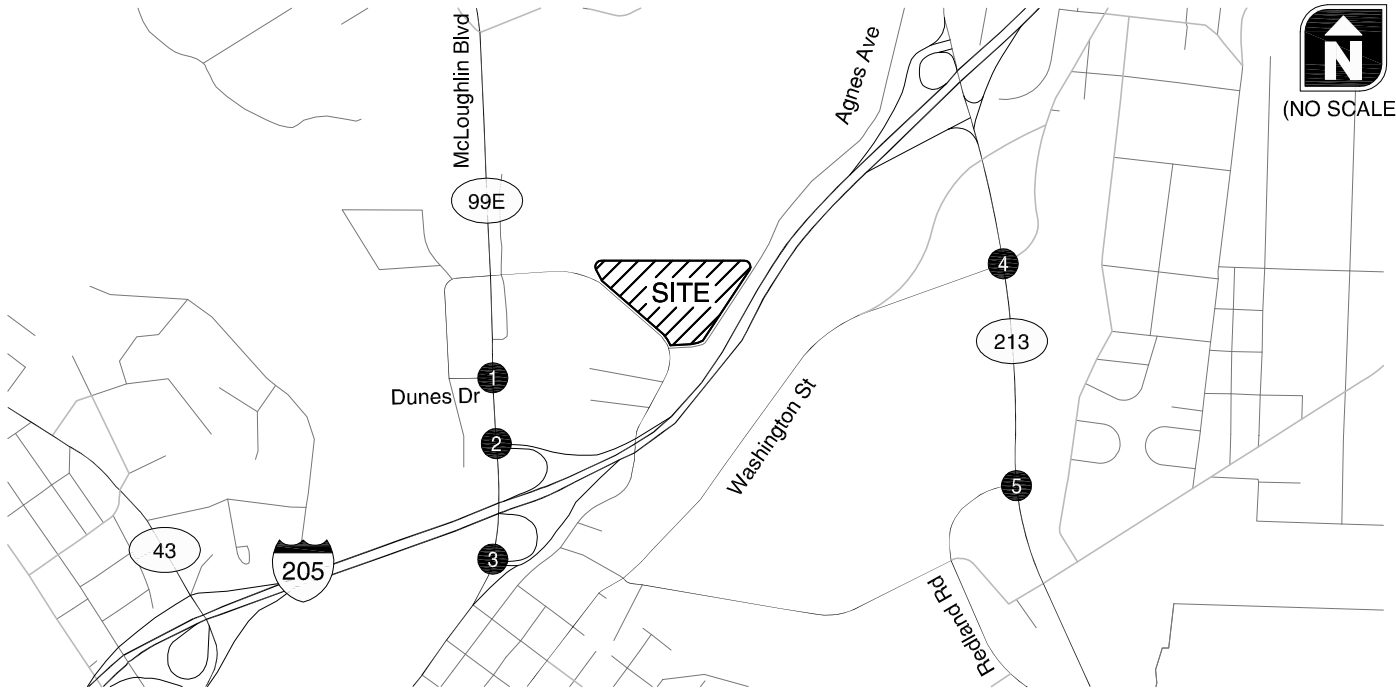
To provide a conservatively high traffic volume analysis, a half-percent annual growth rate was applied to all movements at all study intersections for the weekday p.m. peak hour.

Year 2020 background traffic volumes at the study intersections for the weekday a.m. and p.m. peak hours are shown in Figure 5.

#### **Year 2020 Background Levels of Service**

The background volumes shown in Figure 5 were used to generate an operational analysis at each study intersection for the weekday a.m. and p.m. to determine the year 2020 background traffic levels of service. As shown in Figure 5, all of the study intersections are forecast to continue to operate at acceptable levels of service during the weekday a.m. and p.m.

*Appendix "E" includes the year 2020 background traffic conditions level-of-service worksheets*

**LEGEND**

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

**2020 BACKGROUND TRAFFIC OPERATIONS  
WEEKDAY AM AND PM PEAK HOURS  
OREGON CITY, OREGON**

FIGURE

**5**

## PROPOSED DEVELOPMENT PLAN

The proposed plan, as illustrated previously in Figure 2, consists of approximately 439 housing units (244 apartments and 195 condo/townhome units); 14,950 square feet of restaurants (5,950 square feet of high-turnover, 8,000 square feet of quality restaurant, and 1,000 square feet coffee shop); 84,212 square feet of general office space, 50,400 square feet of medical-dental office space; a public marina with 150 boat slips (half to be used by on-site development); and a City park.

The development is planned to be constructed in five major phases, with all phases expected to be constructed by 2020. As such, the traffic analysis in this report considers full buildout of all phases.

Access to the site is provided by the existing roadway network, consisting of Main Street to the south and Agnes Avenue to the north (the new segments of Agnes Street will be constructed as a part of this development and have been assumed to access the site for one-way inbound traffic only). Main Street provides robust connectivity to ORE 99E via Clackamette Drive/Dunes Drive and the Oregon City Shopping mall access road. Main Street also provides connectivity to ORE 99E from the 15<sup>th</sup> Street/99E intersection.

### ***Trip Generation***

Estimates of daily, weekday a.m. peak hour, and weekday p.m. peak hour vehicle trip ends for the proposed Cove development are based on empirical observations at similar sites. These observations are summarized in the standard reference *Trip Generation, 9<sup>th</sup> Edition*, published by the Institute of Transportation Engineers (ITE, Reference 4).

Internal trips have been determined for mixed-use land development, based on the methodology presented in the *Trip Generation Handbook* (Reference 5). As determined by the ITE methodology, the individual land uses within the mixed-use development account for a proportion of internal trips that will not be generated from outside of the development. For the weekday a.m. peak hour, a 25-percent internalization rate was calculated. For the weekday p.m. peak hour: 11-percent internalization. These internalization rates exclude the Marina, as this was considered separately due to its unique land use. The Marina, with 150 berths, will have 75 allotted for public use while 75 will be privately owned by residents of the Cove development. Thus, a fifty percent internalization reduction was taken for the Marina trips.

Table 3 summarizes the estimated trip generation (shown on the following page).

**Table 3 Estimated Trip Generation**

| Land Use                                          | ITE Land Use Code | Size       | Daily Trips  | Weekday AM Peak Hour Trips |            |            | Weekday PM Peak Hour Trips |            |            |
|---------------------------------------------------|-------------------|------------|--------------|----------------------------|------------|------------|----------------------------|------------|------------|
|                                                   |                   |            |              | Total                      | In         | Out        | Total                      | In         | Out        |
| Apartment                                         | 220               | 244 units  | 1,623        | 124                        | 25         | 99         | 151                        | 98         | 53         |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -162         | -29                        | -6         | -23        | -15                        | -10        | -5         |
| Residential Condominium/Townhouse                 | 230               | 195 units  | 1,133        | 86                         | 15         | 71         | 101                        | 68         | 33         |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -113         | -20                        | -3         | -17        | -10                        | -7         | -3         |
| High Turnover Sit-Down Restaurant                 | 932               | 5,950 SF   | 757          | 64                         | 35         | 29         | 59                         | 36         | 23         |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -76          | -15                        | -8         | -7         | -6                         | -4         | -2         |
| <i>Pass-by Trips (43% Daily, 43% AM, 43% PM)</i>  |                   |            | -293         | -21                        | -11        | -10        | -23                        | -14        | -9         |
| Quality Restaurant                                | 931               | 8,000 SF   | 720          | 6                          | 5          | 1          | 60                         | 40         | 20         |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -72          | -1                         | -1         | 0          | -6                         | -4         | -2         |
| Coffee/Donut Shop w/ Drive-Through                | 937               | 1,000 SF   | 819          | 101                        | 52         | 49         | 43                         | 22         | 21         |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -82          | -23                        | -12        | -11        | -4                         | -2         | -2         |
| <i>Pass-by Trips (83% Daily, 83% AM, 83% PM)</i>  |                   |            | -611         | -64                        | -33        | -31        | -32                        | -16        | -16        |
| General Office Building                           | 710               | 84,212 SF  | 929          | 131                        | 115        | 16         | 126                        | 22         | 104        |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -93          | -30                        | -27        | -3         | -13                        | -2         | -11        |
| Medical-Dental Office Building (average)          | 720               | 50,400 SF  | 1,821        | 120                        | 95         | 25         | 180                        | 50         | 130        |
| <i>Internal Trips (11% Daily, 25% AM, 11% PM)</i> |                   |            | -182         | -31                        | -25        | -6         | -18                        | -5         | -13        |
| Marina (Fitted Daily, AVG AM & PM)                | 420               | 150 berths | 694          | 12                         | 4          | 8          | 29                         | 17         | 12         |
| <i>Internal Trips (50% Daily, 50% AM, 50% PM)</i> |                   |            | -347         | -6                         | -2         | -4         | -15                        | -9         | -6         |
| Regional Park                                     | 417               | 5.28 acres | 24           | 2                          | 1          | 1          | 2                          | 1          | 1          |
| <b>Total Net New Trip Generation</b>              |                   |            | <b>6,489</b> | <b>406</b>                 | <b>219</b> | <b>187</b> | <b>609</b>                 | <b>281</b> | <b>328</b> |

As shown in Table 3, the proposed Cove mixed-use development is estimated to generate approximately 6,489 net new daily trips. Of the net new daily trips, approximately 406 are estimated to occur during the weekday a.m. peak hour, and approximately 609 are estimated to occur during the weekday p.m. peak hour.

*The ITE internalization worksheets are included in Appendix "F."*

It should be noted that due to the immediate adjacency of the Oregon City Shopping Center there could be additional internalization of trips with retail uses that have not been considered in this analysis for simplicity. However, it is reasonable to expect that there will be some trip sharing, resulting in a net new trip generation even lower than that shown in Table 3.

### **Site Trip Distribution**

The distribution of site-generated trips is based on a review of the surrounding land uses and transportation systems, observation of existing turning movement travel patterns, and the result of a Select Zone Analysis prepared by Metro staff. Each of these technical resources, combined with field observation of optimal travel routes during the peak hours, contributed to the trip distribution pattern used in this analysis. The resulting estimated trip distribution pattern and site-generated trips are illustrated in Figure 6.

*The 2010 Metro model select zone analysis output is included in Appendix "G."*

## **YEAR 2020 TOTAL TRAFFIC CONDITIONS**

The total traffic conditions analysis forecasts how the study area's transportation system will operate with the traffic generated by the proposed Cove mixed-use development. The estimated site generated trips shown in Figure 6 were added to the 2020 background traffic volumes shown in Figure 5 to arrive at the year 2020 total traffic volumes shown in Figure 7. As shown in Figure 7, all study intersections are forecast to continue to operate acceptably within ODOT operations thresholds.

*Appendix "H" includes the year 2020 total traffic conditions level-of-service worksheets*

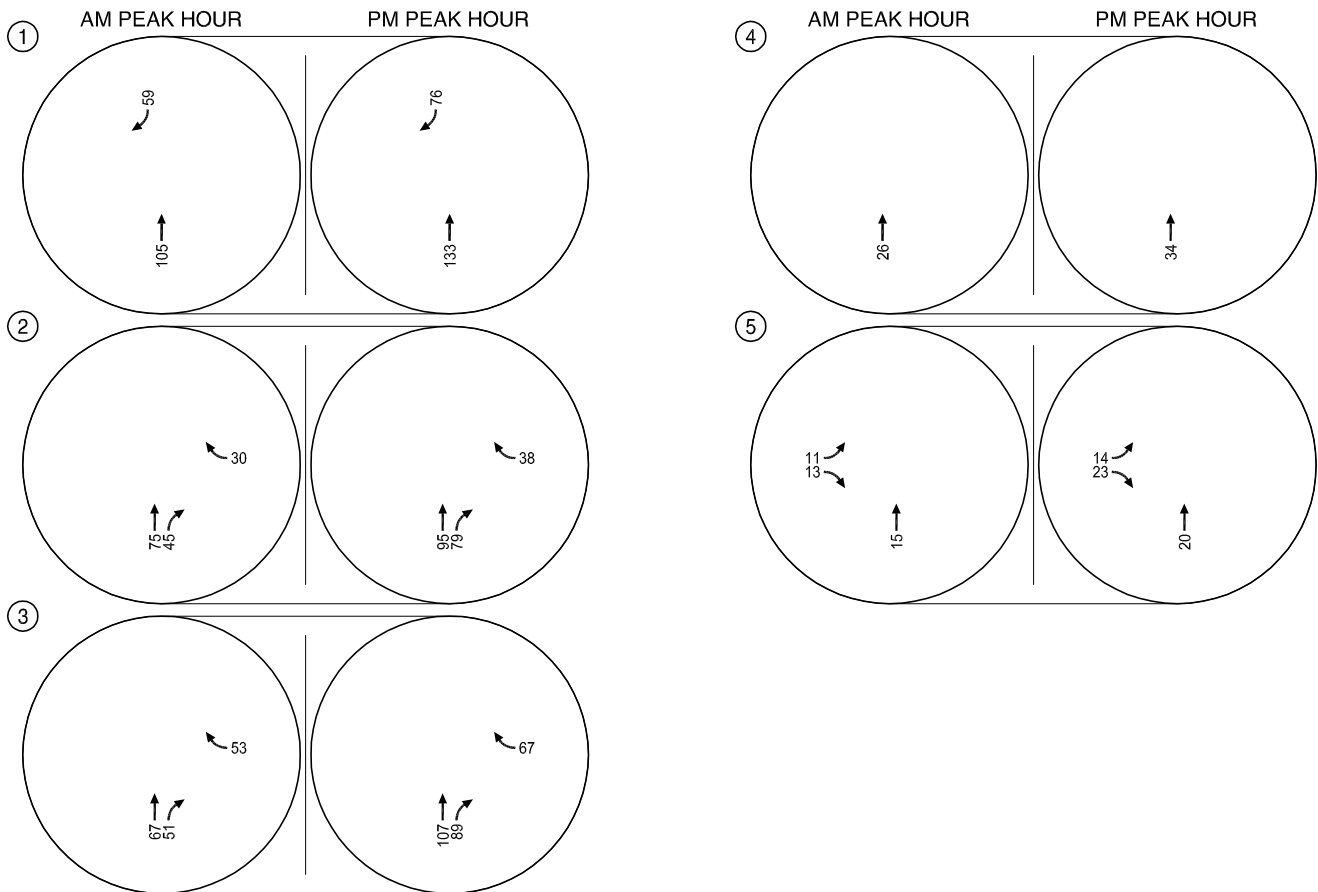
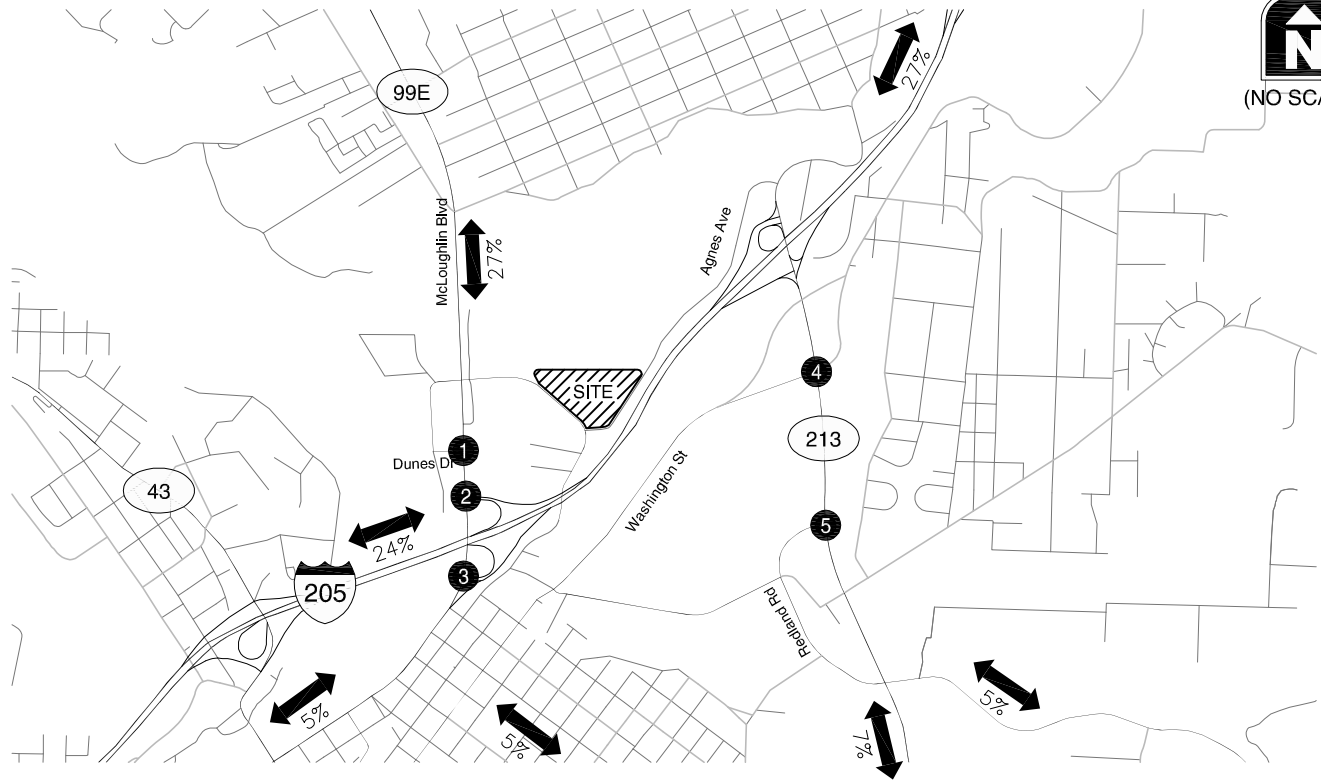
### **Queuing Assessment**

As described in the Existing Conditions section of this report, no queue storage deficiencies were observed except the southbound left-turn movement at the ORE 99E/I-205 SB Ramp Terminal intersection. Vehicles queues were observed to extend to Dunes Drive during the peak fifteen minutes of the weekday a.m. peak hour. No blockage through the intersection was observed.

This queue storage deficiency is forecast to continue to occur during the 2020 background traffic operations and upon full site buildout. As shown in Figure 6, no site-generated traffic is forecast to impact this movement during the weekday a.m. peak hour as a result of the robust street system. A more direct route (less distance and travel times during the peak hours) to access the southbound off-ramp from the site is to use Main Street to 15<sup>th</sup> Street. As such, no site-generated traffic is expected to increase the queue at this location during the weekday a.m. peak hour.

No other queue storage deficiencies are forecast at the remaining study intersections.

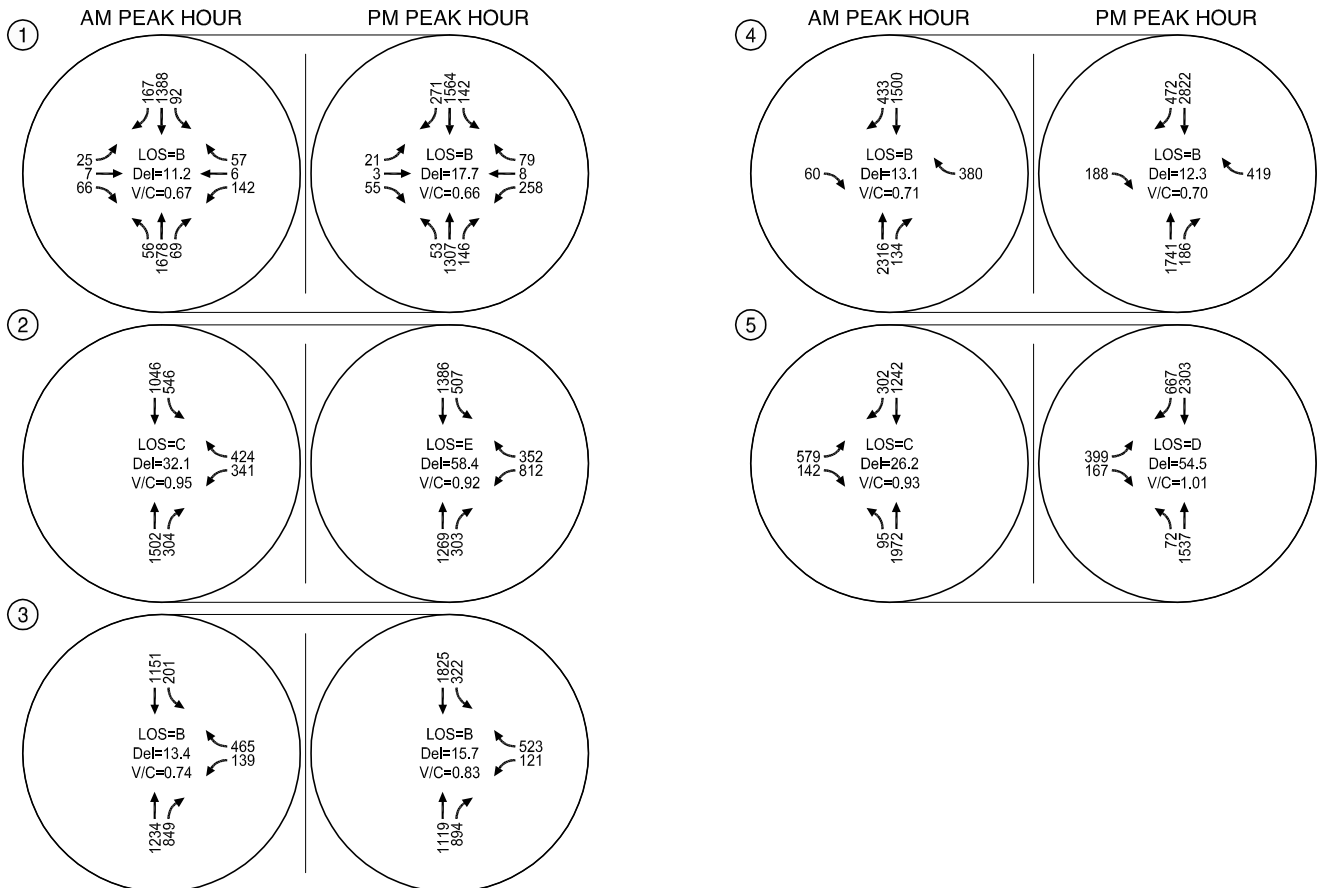
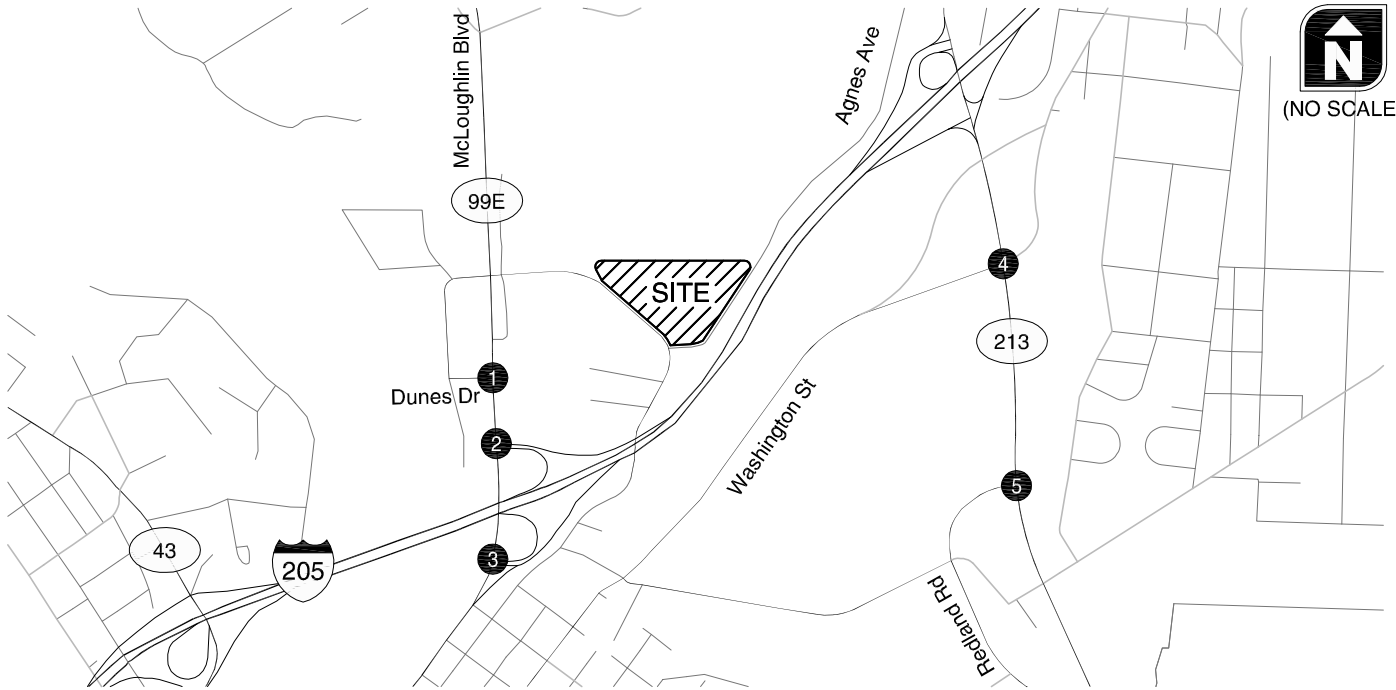
*The 95<sup>th</sup> percentile queuing analysis output sheets are provided in Appendix "I."*



Note: Some trips have been assigned to routes involving non-study intersections (i.e. Agnes Ave, Main St, Abernethy Rd).

**ESTIMATED TRIP DISTRIBUTION PATTERN  
AND SITE GENERATED TRIPS  
OREGON CITY, OREGON**

FIGURE  
**6**

**LEGEND**

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

**2020 TOTAL TRAFFIC OPERATIONS  
WEEKDAY AM AND PM PEAK HOURS  
OREGON CITY, OREGON**

FIGURE

**7**

## **Section 5**

### Conclusions and Recommendations

## Conclusions and Recommendations

The results of the traffic impact analysis indicate that the proposed Cove Mixed-Use Development can be constructed while maintaining acceptable levels of service and safety on the surrounding transportation system. The findings of this analysis and our recommendations are discussed below.

### KEY FINDINGS

#### ***Year 2015 Existing Conditions***

- All of the study intersections operate within the established mobility standards of the governing agency during the weekday a.m. and p.m. peak hours.
- A review of historical crash data does not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.
- The southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection was observed to exceed the available striped lane queue storage during the weekday a.m. peak hour.

#### ***Year 2020 Background Traffic Conditions***

- Existing traffic volumes are increased by agreed upon annual growth rates to estimate the year 2020 weekday peak period traffic volumes.
- All study intersections are forecast to continue to operate within the established mobility standards of the governing agency during the weekday a.m. and p.m. peak periods.
- The southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection is forecast to continue to exceed the available striped lane queue storage during the weekday a.m. peak hour.

#### ***Development Plan***

- The proposed development plan consists of the following development:
  - 439 housing units (244 apartments and 195 condo/townhome units);
  - 14,950 square feet of restaurants (5,950 square feet of high-turnover, 8,000 square feet of quality restaurant, and 1,000 square feet coffee shop);
  - 84,212 square feet of general office space
  - 50,400 square feet of medical-dental office space;
  - A public marina with 150 boat slips (half to be used by on-site development); and
  - A City park.

- The proposed development plan is estimated to generate approximately 6,489 net new daily vehicle trips. Of the net new daily vehicle trips, approximately 406 will occur during the a.m. peak hour, and approximately 609 will occur during the p.m. peak hour.

### **Year 2020 Total Traffic Conditions**

- All study intersections are forecast to continue to operate acceptably during the weekday a.m. and p.m. peak periods upon site buildout.
- The southbound left-turn movement at the ORE 99E /I-205 SB Ramp Terminal intersection is forecast to continue to exceed the available striped lane queue storage during the weekday a.m. peak hour. *No site-generated traffic is expected to increase the queue at this location.*

## **RECOMMENDATIONS**

The following list provides a summary of the mitigation measures recommended as part of this proposed development.

- Signage, above-ground utilities, and landscaping near the internal intersections and site access points should be maintained to ensure adequate sight distance.

## **Section 6**

### References

## References

1. Transportation Research Board. *Highway Capacity Manual*. 2010.
2. Oregon Department of Transportation. *1999 Oregon Highway Plan*. 1999, republished with amendments in year 2015.
3. Kittelson & Associates. *Oregon City Transportation System Plan*. 2013.
4. Institute of Transportation Engineers. *Trip Generation*, 9<sup>th</sup> Edition.
5. Institute of Transportation Engineers. *Trip Generation Handbook*.

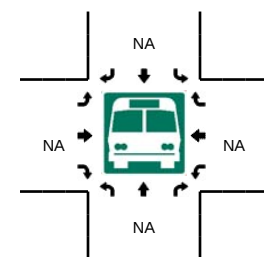
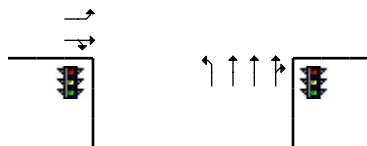
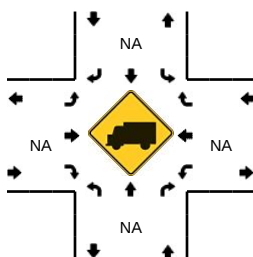
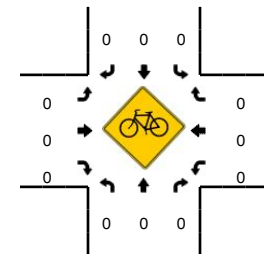
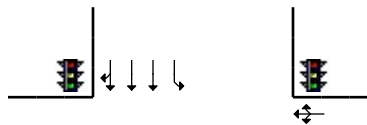
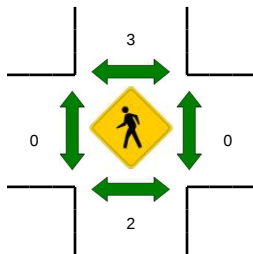
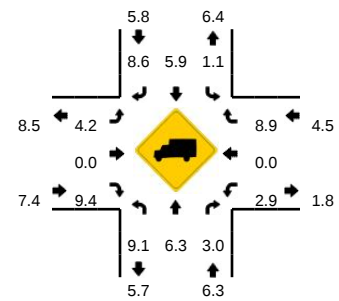
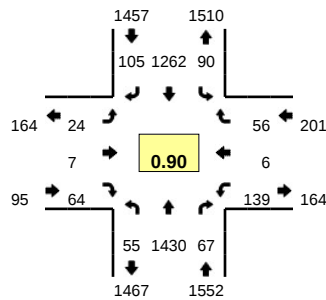
## **Appendix A**

### Traffic Count Data

**LOCATION:** McLoughlin Blvd -- Dunes Dr  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13413103  
**DATE:** Tue, Jun 02 2015

**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:40 AM -- 7:55 AM**



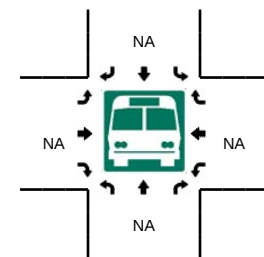
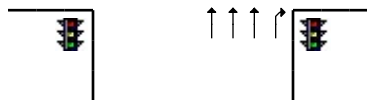
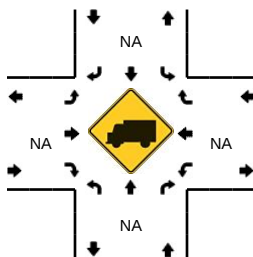
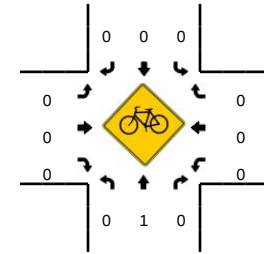
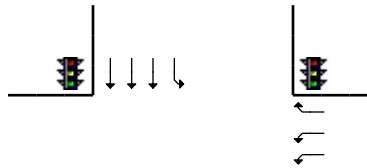
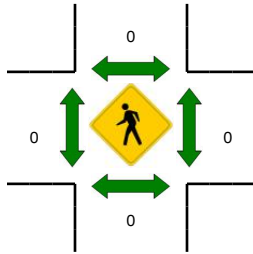
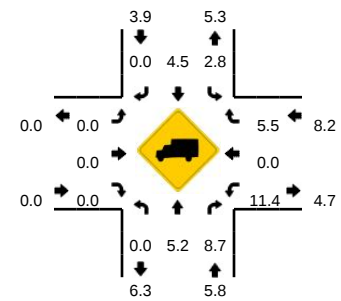
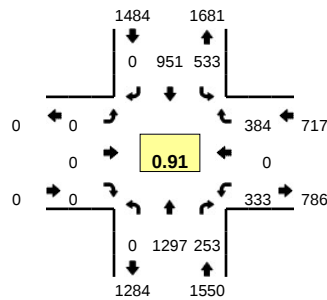
| 5-Min Count Period<br>Beginning At | McLoughlin Blvd (Northbound) |      |       |   | McLoughlin Blvd (Southbound) |      |       |   | Dunes Dr (Eastbound) |      |       |   | Dunes Dr (Westbound) |      |       |   | Total        | Hourly Totals |
|------------------------------------|------------------------------|------|-------|---|------------------------------|------|-------|---|----------------------|------|-------|---|----------------------|------|-------|---|--------------|---------------|
|                                    | Left                         | Thru | Right | U | Left                         | Thru | Right | U | Left                 | Thru | Right | U | Left                 | Thru | Right | U |              |               |
| 7:00 AM                            | 1                            | 85   | 3     | 0 | 4                            | 80   | 2     | 0 | 0                    | 0    | 3     | 0 | 9                    | 0    | 3     | 0 | 190          |               |
| 7:05 AM                            | 5                            | 82   | 5     | 0 | 5                            | 101  | 5     | 0 | 0                    | 0    | 3     | 0 | 9                    | 1    | 1     | 0 | 217          |               |
| 7:10 AM                            | 1                            | 88   | 5     | 0 | 7                            | 75   | 5     | 0 | 2                    | 1    | 5     | 0 | 10                   | 1    | 2     | 0 | 202          |               |
| 7:15 AM                            | 4                            | 71   | 9     | 0 | 1                            | 85   | 3     | 0 | 0                    | 0    | 1     | 0 | 7                    | 1    | 5     | 0 | 187          |               |
| 7:20 AM                            | 2                            | 96   | 4     | 0 | 11                           | 132  | 4     | 0 | 1                    | 1    | 4     | 0 | 10                   | 0    | 5     | 0 | 270          |               |
| 7:25 AM                            | 3                            | 103  | 4     | 0 | 5                            | 97   | 5     | 0 | 0                    | 1    | 0     | 0 | 16                   | 0    | 3     | 0 | 237          |               |
| 7:30 AM                            | 5                            | 114  | 4     | 0 | 4                            | 97   | 7     | 0 | 4                    | 1    | 7     | 0 | 9                    | 0    | 8     | 0 | 260          |               |
| 7:35 AM                            | 1                            | 101  | 4     | 1 | 6                            | 112  | 6     | 0 | 0                    | 0    | 5     | 0 | 7                    | 0    | 2     | 0 | 245          |               |
| 7:40 AM                            | 1                            | 151  | 5     | 0 | 4                            | 123  | 11    | 0 | 2                    | 0    | 7     | 0 | 5                    | 0    | 4     | 0 | 313          |               |
| 7:45 AM                            | 12                           | 117  | 4     | 0 | 8                            | 111  | 8     | 0 | 1                    | 1    | 5     | 0 | 11                   | 1    | 1     | 0 | 280          |               |
| 7:50 AM                            | 3                            | 136  | 7     | 0 | 15                           | 126  | 10    | 0 | 3                    | 1    | 4     | 0 | 15                   | 0    | 6     | 0 | 326          |               |
| 7:55 AM                            | 4                            | 159  | 8     | 0 | 4                            | 101  | 9     | 0 | 1                    | 1    | 5     | 0 | 10                   | 0    | 5     | 0 | 307          | 3034          |
| 8:00 AM                            | 5                            | 102  | 7     | 0 | 9                            | 91   | 8     | 0 | 5                    | 0    | 7     | 0 | 12                   | 0    | 6     | 0 | 252          | 3096          |
| 8:05 AM                            | 3                            | 105  | 3     | 0 | 9                            | 108  | 10    | 0 | 0                    | 0    | 5     | 0 | 17                   | 0    | 5     | 0 | 265          | 3144          |
| 8:10 AM                            | 7                            | 91   | 4     | 1 | 9                            | 85   | 14    | 0 | 3                    | 1    | 4     | 0 | 16                   | 2    | 2     | 0 | 239          | 3181          |
| 8:15 AM                            | 7                            | 127  | 4     | 0 | 6                            | 115  | 5     | 0 | 2                    | 0    | 7     | 0 | 12                   | 2    | 4     | 0 | 291          | 3285          |
| 8:20 AM                            | 3                            | 100  | 9     | 0 | 10                           | 106  | 4     | 0 | 1                    | 0    | 3     | 0 | 14                   | 1    | 7     | 0 | 258          | 3273          |
| 8:25 AM                            | 2                            | 127  | 8     | 0 | 6                            | 87   | 13    | 0 | 2                    | 2    | 5     | 0 | 11                   | 0    | 6     | 0 | 269          | 3305          |
| 8:30 AM                            | 8                            | 111  | 8     | 0 | 4                            | 76   | 10    | 0 | 2                    | 0    | 4     | 0 | 21                   | 0    | 4     | 0 | 248          | 3293          |
| 8:35 AM                            | 5                            | 90   | 8     | 0 | 7                            | 90   | 11    | 0 | 2                    | 0    | 4     | 0 | 15                   | 0    | 2     | 0 | 234          | 3282          |
| 8:40 AM                            | 5                            | 98   | 7     | 1 | 11                           | 93   | 6     | 0 | 0                    | 1    | 8     | 0 | 13                   | 1    | 4     | 0 | 248          | 3217          |
| 8:45 AM                            | 5                            | 105  | 3     | 0 | 4                            | 101  | 11    | 0 | 1                    | 0    | 6     | 0 | 14                   | 1    | 8     | 0 | 259          | 3196          |
| 8:50 AM                            | 6                            | 108  | 8     | 0 | 12                           | 93   | 8     | 0 | 3                    | 0    | 4     | 0 | 9                    | 0    | 3     | 0 | 254          | 3124          |
| 8:55 AM                            | 2                            | 110  | 8     | 0 | 3                            | 83   | 10    | 0 | 1                    | 0    | 3     | 0 | 11                   | 0    | 4     | 0 | 235          | 3052          |
| <b>Peak 15-Min Flowrates</b>       | <b>Northbound</b>            |      |       |   | <b>Southbound</b>            |      |       |   | <b>Eastbound</b>     |      |       |   | <b>Westbound</b>     |      |       |   | <b>Total</b> |               |
| All Vehicles                       | 64                           | 1616 | 64    | 0 | 108                          | 1440 | 116   | 0 | 24                   | 8    | 64    | 0 | 124                  | 4    | 44    | 0 | 3676         |               |
| Heavy Trucks                       | 4                            | 72   | 4     |   | 0                            | 52   | 8     |   | 4                    | 0    | 4     |   | 0                    | 0    | 0     |   | 148          |               |
| Pedestrians                        |                              | 0    |       |   |                              | 0    |       |   |                      | 0    |       |   |                      | 0    |       |   | 0            |               |
| Bicycles                           | 0                            | 0    | 0     |   | 0                            | 0    | 0     |   | 0                    | 0    | 0     |   | 0                    | 0    | 0     |   | 0            |               |
| Railroad                           |                              |      |       |   |                              |      |       |   |                      |      |       |   |                      |      |       |   |              |               |
| Stopped Buses                      |                              |      |       |   |                              |      |       |   |                      |      |       |   |                      |      |       |   |              |               |

**Comments:**

**LOCATION:** McLoughlin Blvd -- I-205 SB Ramps  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13413101  
**DATE:** Tue, Jun 02 2015

**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:40 AM -- 7:55 AM**



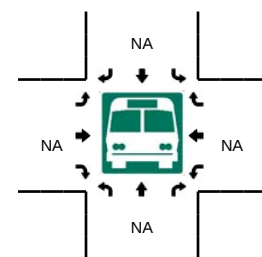
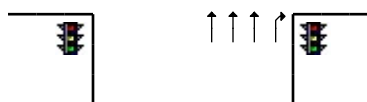
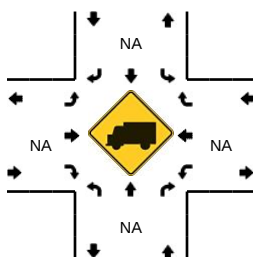
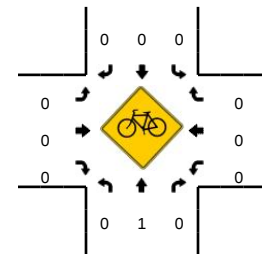
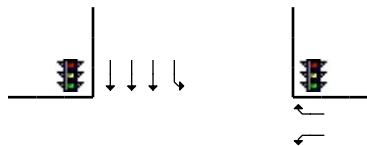
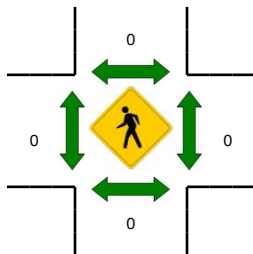
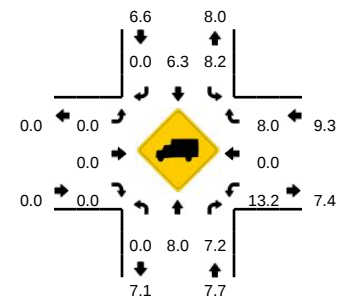
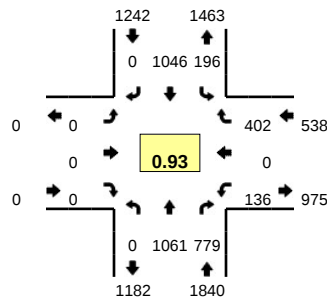
| 5-Min Count Period Beginning At | McLoughlin Blvd (Northbound) |      |       |   | McLoughlin Blvd (Southbound) |      |       |   | I-205 SB Ramps (Eastbound) |      |       |   | I-205 SB Ramps (Westbound) |      |       |   | Total        | Hourly Totals |
|---------------------------------|------------------------------|------|-------|---|------------------------------|------|-------|---|----------------------------|------|-------|---|----------------------------|------|-------|---|--------------|---------------|
|                                 | Left                         | Thru | Right | U | Left                         | Thru | Right | U | Left                       | Thru | Right | U | Left                       | Thru | Right | U |              |               |
| 7:00 AM                         | 0                            | 85   | 22    | 0 | 41                           | 45   | 0     | 0 | 0                          | 0    | 0     | 0 | 28                         | 0    | 16    | 0 | 237          |               |
| 7:05 AM                         | 0                            | 96   | 26    | 0 | 51                           | 56   | 0     | 0 | 0                          | 0    | 0     | 0 | 16                         | 0    | 17    | 0 | 262          |               |
| 7:10 AM                         | 0                            | 80   | 21    | 0 | 44                           | 46   | 0     | 0 | 0                          | 0    | 0     | 0 | 27                         | 0    | 16    | 0 | 234          |               |
| 7:15 AM                         | 0                            | 79   | 26    | 0 | 48                           | 58   | 0     | 0 | 0                          | 0    | 0     | 0 | 30                         | 0    | 17    | 0 | 258          |               |
| 7:20 AM                         | 0                            | 115  | 25    | 0 | 36                           | 87   | 0     | 0 | 0                          | 0    | 0     | 0 | 24                         | 0    | 18    | 0 | 305          |               |
| 7:25 AM                         | 0                            | 76   | 12    | 0 | 54                           | 71   | 0     | 0 | 0                          | 0    | 0     | 0 | 22                         | 0    | 25    | 0 | 260          |               |
| 7:30 AM                         | 0                            | 100  | 24    | 0 | 48                           | 66   | 0     | 0 | 0                          | 0    | 0     | 0 | 19                         | 0    | 24    | 0 | 281          |               |
| 7:35 AM                         | 0                            | 110  | 27    | 0 | 45                           | 83   | 0     | 0 | 0                          | 0    | 0     | 0 | 23                         | 0    | 25    | 0 | 313          |               |
| 7:40 AM                         | 0                            | 114  | 23    | 0 | 45                           | 91   | 0     | 0 | 0                          | 0    | 0     | 0 | 22                         | 0    | 45    | 0 | 340          |               |
| 7:45 AM                         | 0                            | 105  | 20    | 0 | 42                           | 88   | 0     | 0 | 0                          | 0    | 0     | 0 | 40                         | 0    | 34    | 0 | 329          |               |
| 7:50 AM                         | 0                            | 140  | 24    | 0 | 44                           | 102  | 0     | 0 | 0                          | 0    | 0     | 0 | 18                         | 0    | 39    | 0 | 367          |               |
| 7:55 AM                         | 0                            | 129  | 22    | 0 | 47                           | 69   | 0     | 0 | 0                          | 0    | 0     | 0 | 22                         | 0    | 36    | 0 | 325          | 3511          |
| 8:00 AM                         | 0                            | 104  | 26    | 0 | 43                           | 68   | 0     | 0 | 0                          | 0    | 0     | 0 | 33                         | 0    | 32    | 0 | 306          | 3580          |
| 8:05 AM                         | 0                            | 113  | 15    | 0 | 48                           | 78   | 0     | 0 | 0                          | 0    | 0     | 0 | 28                         | 0    | 23    | 0 | 305          | 3623          |
| 8:10 AM                         | 0                            | 90   | 25    | 0 | 46                           | 64   | 0     | 0 | 0                          | 0    | 0     | 0 | 27                         | 0    | 21    | 0 | 273          | 3662          |
| 8:15 AM                         | 0                            | 93   | 16    | 0 | 53                           | 92   | 0     | 0 | 0                          | 0    | 0     | 0 | 37                         | 0    | 30    | 0 | 321          | 3725          |
| 8:20 AM                         | 0                            | 102  | 16    | 0 | 36                           | 91   | 0     | 0 | 0                          | 0    | 0     | 0 | 33                         | 0    | 40    | 0 | 318          | 3738          |
| 8:25 AM                         | 0                            | 97   | 15    | 0 | 36                           | 59   | 0     | 0 | 0                          | 0    | 0     | 0 | 31                         | 0    | 35    | 0 | 273          | 3751          |
| 8:30 AM                         | 0                            | 95   | 14    | 0 | 50                           | 55   | 0     | 0 | 0                          | 0    | 0     | 0 | 30                         | 0    | 40    | 0 | 284          | 3754          |
| 8:35 AM                         | 0                            | 89   | 18    | 0 | 35                           | 73   | 0     | 1 | 0                          | 0    | 0     | 0 | 34                         | 0    | 31    | 0 | 281          | 3722          |
| 8:40 AM                         | 0                            | 77   | 11    | 0 | 39                           | 81   | 0     | 0 | 0                          | 0    | 0     | 0 | 27                         | 0    | 38    | 0 | 273          | 3655          |
| 8:45 AM                         | 0                            | 93   | 19    | 0 | 52                           | 68   | 0     | 0 | 0                          | 0    | 0     | 0 | 33                         | 0    | 29    | 0 | 294          | 3620          |
| 8:50 AM                         | 0                            | 105  | 28    | 0 | 40                           | 66   | 0     | 0 | 0                          | 0    | 0     | 0 | 32                         | 0    | 40    | 1 | 312          | 3565          |
| 8:55 AM                         | 0                            | 77   | 17    | 0 | 39                           | 68   | 0     | 0 | 0                          | 0    | 0     | 0 | 25                         | 0    | 32    | 0 | 258          | 3498          |
| <b>Peak 15-Min Flowrates</b>    | <b>Northbound</b>            |      |       |   | <b>Southbound</b>            |      |       |   | <b>Eastbound</b>           |      |       |   | <b>Westbound</b>           |      |       |   | <b>Total</b> |               |
| All Vehicles                    | 0                            | 1436 | 268   | 0 | 524                          | 1124 | 0     | 0 | 0                          | 0    | 0     | 0 | 320                        | 0    | 472   | 0 | 4144         |               |
| Heavy Trucks                    | 0                            | 52   | 28    | 0 | 20                           | 24   | 0     | 0 | 0                          | 0    | 0     | 0 | 16                         | 0    | 12    | 0 | 152          |               |
| Pedestrians                     | 0                            | 0    | 0     | 0 | 0                            | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0            |               |
| Bicycles                        | 0                            | 0    | 0     | 0 | 0                            | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0            |               |
| Railroad                        | 0                            | 0    | 0     | 0 | 0                            | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0            |               |
| Stopped Buses                   | 0                            | 0    | 0     | 0 | 0                            | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0            |               |

**Comments:**

**LOCATION:** McLoughlin Blvd/OR 99E -- I-205 NB Ramps  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13421001  
**DATE:** Thu, Jun 11 2015

**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:40 AM -- 7:55 AM**



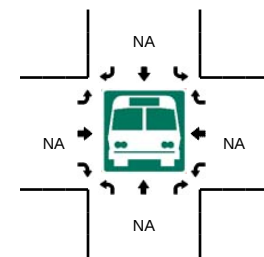
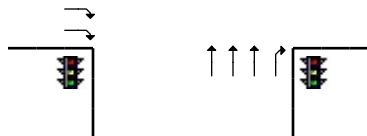
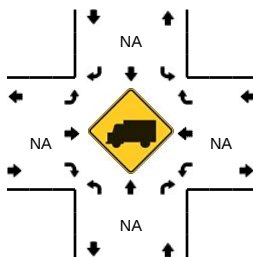
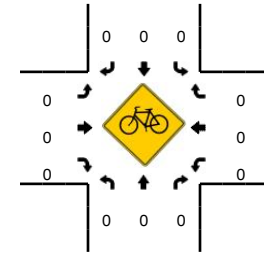
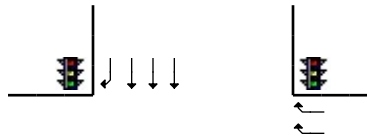
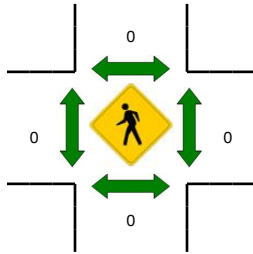
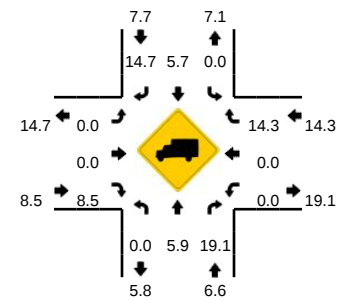
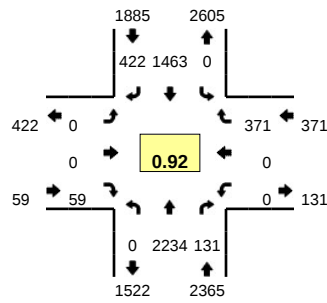
| 5-Min Count Period<br>Beginning At | McLoughlin Blvd/OR 99E<br>(Northbound) |      |       |   | McLoughlin Blvd/OR 99E<br>(Southbound) |      |       |   | I-205 NB Ramps<br>(Eastbound) |      |       |   | I-205 NB Ramps<br>(Westbound) |      |       |   | Total | Hourly Totals |
|------------------------------------|----------------------------------------|------|-------|---|----------------------------------------|------|-------|---|-------------------------------|------|-------|---|-------------------------------|------|-------|---|-------|---------------|
|                                    | Left                                   | Thru | Right | U | Left                                   | Thru | Right | U | Left                          | Thru | Right | U | Left                          | Thru | Right | U |       |               |
| 7:00 AM                            | 0                                      | 77   | 79    | 0 | 13                                     | 56   | 0     | 0 | 0                             | 0    | 0     | 0 | 6                             | 0    | 19    | 0 | 250   |               |
| 7:05 AM                            | 0                                      | 66   | 64    | 0 | 21                                     | 52   | 0     | 0 | 0                             | 0    | 0     | 0 | 5                             | 0    | 31    | 0 | 239   |               |
| 7:10 AM                            | 0                                      | 70   | 80    | 0 | 12                                     | 46   | 0     | 0 | 0                             | 0    | 0     | 0 | 15                            | 0    | 30    | 0 | 253   |               |
| 7:15 AM                            | 0                                      | 94   | 76    | 0 | 17                                     | 66   | 0     | 0 | 0                             | 0    | 0     | 0 | 5                             | 0    | 33    | 0 | 291   |               |
| 7:20 AM                            | 0                                      | 93   | 60    | 0 | 19                                     | 85   | 0     | 0 | 0                             | 0    | 0     | 0 | 12                            | 0    | 27    | 0 | 296   |               |
| 7:25 AM                            | 0                                      | 75   | 69    | 0 | 14                                     | 72   | 0     | 0 | 0                             | 0    | 0     | 0 | 13                            | 0    | 21    | 0 | 264   |               |
| 7:30 AM                            | 0                                      | 84   | 89    | 0 | 18                                     | 61   | 0     | 0 | 0                             | 0    | 0     | 0 | 10                            | 0    | 36    | 0 | 298   |               |
| 7:35 AM                            | 0                                      | 90   | 80    | 0 | 20                                     | 75   | 0     | 0 | 0                             | 0    | 0     | 0 | 7                             | 0    | 31    | 0 | 303   |               |
| 7:40 AM                            | 0                                      | 109  | 64    | 0 | 17                                     | 92   | 0     | 0 | 0                             | 0    | 0     | 0 | 15                            | 0    | 41    | 0 | 338   |               |
| 7:45 AM                            | 0                                      | 111  | 69    | 0 | 11                                     | 99   | 0     | 0 | 0                             | 0    | 0     | 0 | 0                             | 0    | 31    | 0 | 321   |               |
| 7:50 AM                            | 0                                      | 94   | 51    | 0 | 20                                     | 95   | 0     | 0 | 0                             | 0    | 0     | 0 | 14                            | 0    | 41    | 0 | 315   |               |
| 7:55 AM                            | 0                                      | 95   | 68    | 0 | 14                                     | 86   | 0     | 0 | 0                             | 0    | 0     | 0 | 10                            | 0    | 33    | 0 | 306   | 3474          |
| 8:00 AM                            | 0                                      | 80   | 60    | 0 | 14                                     | 88   | 0     | 0 | 0                             | 0    | 0     | 0 | 13                            | 0    | 32    | 0 | 287   | 3511          |
| 8:05 AM                            | 0                                      | 79   | 49    | 0 | 15                                     | 92   | 0     | 0 | 0                             | 0    | 0     | 0 | 15                            | 0    | 31    | 0 | 281   | 3553          |
| 8:10 AM                            | 0                                      | 98   | 62    | 0 | 19                                     | 96   | 0     | 0 | 0                             | 0    | 0     | 0 | 7                             | 0    | 35    | 0 | 317   | 3617          |
| 8:15 AM                            | 0                                      | 70   | 64    | 0 | 15                                     | 81   | 0     | 0 | 0                             | 0    | 0     | 0 | 15                            | 0    | 33    | 0 | 278   | 3604          |
| 8:20 AM                            | 0                                      | 79   | 61    | 0 | 16                                     | 104  | 0     | 0 | 0                             | 0    | 0     | 0 | 13                            | 0    | 35    | 0 | 308   | 3616          |
| 8:25 AM                            | 0                                      | 72   | 62    | 0 | 17                                     | 77   | 0     | 0 | 0                             | 0    | 0     | 0 | 17                            | 0    | 23    | 0 | 268   | 3620          |
| 8:30 AM                            | 0                                      | 75   | 40    | 0 | 18                                     | 94   | 0     | 0 | 0                             | 0    | 0     | 0 | 14                            | 0    | 28    | 0 | 269   | 3591          |
| 8:35 AM                            | 0                                      | 72   | 59    | 0 | 11                                     | 90   | 0     | 0 | 0                             | 0    | 0     | 0 | 9                             | 0    | 31    | 0 | 272   | 3560          |
| 8:40 AM                            | 0                                      | 56   | 58    | 0 | 16                                     | 84   | 0     | 0 | 0                             | 0    | 0     | 0 | 15                            | 0    | 31    | 0 | 260   | 3482          |
| 8:45 AM                            | 0                                      | 71   | 63    | 0 | 14                                     | 67   | 0     | 0 | 0                             | 0    | 0     | 0 | 14                            | 0    | 38    | 0 | 267   | 3428          |
| 8:50 AM                            | 0                                      | 77   | 42    | 0 | 16                                     | 72   | 0     | 0 | 0                             | 0    | 0     | 0 | 10                            | 0    | 35    | 0 | 252   | 3365          |
| 8:55 AM                            | 0                                      | 62   | 58    | 0 | 23                                     | 66   | 0     | 0 | 0                             | 0    | 0     | 0 | 19                            | 0    | 22    | 0 | 250   | 3309          |
| 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 |       |               |
|                                    | 0                                      | 1256 | 736   | 0 | 192                                    | 1144 | 0     | 0 | 0                             | 0    | 0     | 0 | 116                           | 0    | 452   | 0 |       |               |
|                                    | 0                                      | 76   | 28    | 0 | 20                                     | 44   | 0     | 0 | 0                             | 0    | 0     | 0 | 24                            | 0    | 36    | 0 |       |               |
|                                    | 0                                      | 0    | 0     | 0 | 0                                      | 0    | 0     | 0 | 0                             | 0    | 0     | 0 | 0                             | 0    | 0     | 0 |       |               |
|                                    | 0                                      | 0    | 0     | 0 | 0                                      | 0    | 0     | 0 | 0                             | 0    | 0     | 0 | 0                             | 0    | 0     | 0 |       |               |
| Stopped Buses                      |                                        |      |       |   |                                        |      |       |   |                               |      |       |   |                               |      |       |   |       |               |

Comments:

**LOCATION:** OR 213 -- Washington St/Clackamas River Dr  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13421003  
**DATE:** Thu, Jun 11 2015

**Peak-Hour: 7:05 AM -- 8:05 AM**  
**Peak 15-Min: 7:15 AM -- 7:30 AM**



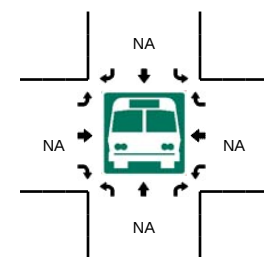
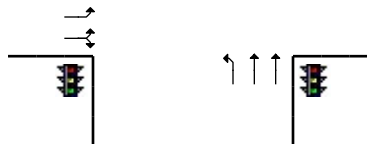
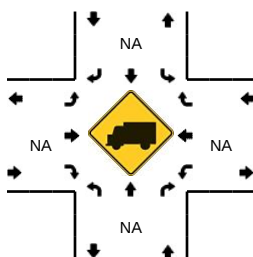
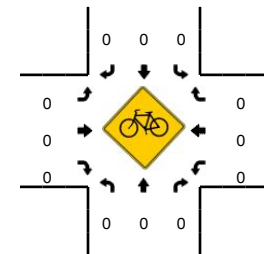
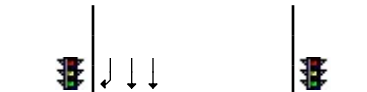
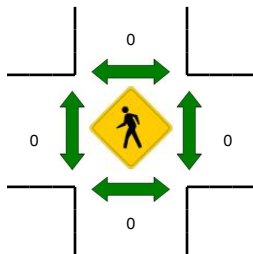
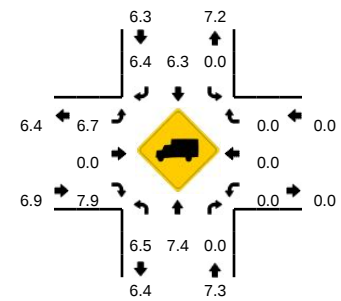
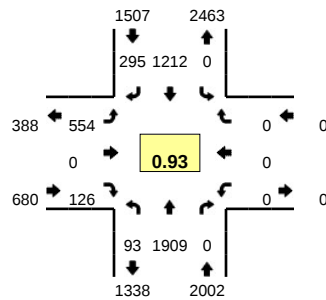
| 5-Min Count Period Beginning At | OR 213 (Northbound) |      |       |   | OR 213 (Southbound) |      |       |   | Washington St/Clackamas River Dr (Eastbound) |      |       |   | Washington St/Clackamas River Dr (Westbound) |      |       |   | Total        | Hourly Totals |
|---------------------------------|---------------------|------|-------|---|---------------------|------|-------|---|----------------------------------------------|------|-------|---|----------------------------------------------|------|-------|---|--------------|---------------|
|                                 | Left                | Thru | Right | U | Left                | Thru | Right | U | Left                                         | Thru | Right | U | Left                                         | Thru | Right | U |              |               |
| 7:00 AM                         | 0                   | 200  | 10    | 0 | 0                   | 91   | 29    | 0 | 0                                            | 0    | 9     | 0 | 0                                            | 0    | 28    | 0 | 367          |               |
| 7:05 AM                         | 0                   | 193  | 3     | 0 | 0                   | 118  | 28    | 0 | 0                                            | 0    | 4     | 0 | 0                                            | 0    | 40    | 0 | 386          |               |
| 7:10 AM                         | 0                   | 197  | 9     | 0 | 0                   | 121  | 33    | 0 | 0                                            | 0    | 4     | 0 | 0                                            | 0    | 33    | 0 | 397          |               |
| 7:15 AM                         | 0                   | 216  | 14    | 0 | 0                   | 133  | 36    | 0 | 0                                            | 0    | 3     | 0 | 0                                            | 0    | 28    | 0 | 430          |               |
| 7:20 AM                         | 0                   | 221  | 11    | 0 | 0                   | 125  | 44    | 0 | 0                                            | 0    | 6     | 0 | 0                                            | 0    | 36    | 0 | 443          |               |
| 7:25 AM                         | 0                   | 197  | 2     | 0 | 0                   | 110  | 37    | 0 | 0                                            | 0    | 3     | 0 | 0                                            | 0    | 52    | 0 | 401          |               |
| 7:30 AM                         | 0                   | 211  | 17    | 0 | 0                   | 123  | 31    | 0 | 0                                            | 0    | 5     | 0 | 0                                            | 0    | 25    | 0 | 412          |               |
| 7:35 AM                         | 0                   | 187  | 14    | 0 | 0                   | 118  | 26    | 0 | 0                                            | 0    | 5     | 0 | 0                                            | 0    | 14    | 0 | 364          |               |
| 7:40 AM                         | 0                   | 138  | 8     | 0 | 0                   | 113  | 38    | 0 | 0                                            | 0    | 10    | 0 | 0                                            | 0    | 41    | 0 | 348          |               |
| 7:45 AM                         | 0                   | 173  | 11    | 0 | 0                   | 134  | 34    | 0 | 0                                            | 0    | 6     | 0 | 0                                            | 0    | 23    | 0 | 381          |               |
| 7:50 AM                         | 0                   | 154  | 14    | 0 | 0                   | 132  | 36    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 30    | 0 | 374          |               |
| 7:55 AM                         | 0                   | 167  | 14    | 0 | 0                   | 122  | 40    | 0 | 0                                            | 0    | 1     | 0 | 0                                            | 0    | 32    | 0 | 376          | 4679          |
| 8:00 AM                         | 0                   | 180  | 14    | 0 | 0                   | 114  | 39    | 0 | 0                                            | 0    | 4     | 0 | 0                                            | 0    | 17    | 0 | 368          | 4680          |
| 8:05 AM                         | 0                   | 160  | 11    | 0 | 0                   | 113  | 32    | 0 | 0                                            | 0    | 7     | 0 | 0                                            | 0    | 25    | 0 | 348          | 4642          |
| 8:10 AM                         | 0                   | 153  | 6     | 0 | 0                   | 142  | 31    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 31    | 0 | 371          | 4616          |
| 8:15 AM                         | 0                   | 137  | 14    | 0 | 0                   | 124  | 42    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 34    | 0 | 359          | 4545          |
| 8:20 AM                         | 0                   | 165  | 21    | 0 | 0                   | 113  | 32    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 33    | 0 | 372          | 4474          |
| 8:25 AM                         | 0                   | 195  | 18    | 0 | 0                   | 138  | 48    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 36    | 0 | 443          | 4516          |
| 8:30 AM                         | 0                   | 177  | 17    | 0 | 0                   | 120  | 31    | 0 | 0                                            | 0    | 4     | 0 | 0                                            | 0    | 46    | 0 | 395          | 4499          |
| 8:35 AM                         | 0                   | 173  | 8     | 0 | 0                   | 101  | 29    | 0 | 0                                            | 0    | 7     | 0 | 0                                            | 0    | 39    | 0 | 357          | 4492          |
| 8:40 AM                         | 0                   | 159  | 12    | 0 | 0                   | 124  | 37    | 0 | 0                                            | 0    | 7     | 0 | 0                                            | 0    | 35    | 0 | 374          | 4518          |
| 8:45 AM                         | 0                   | 143  | 13    | 0 | 0                   | 107  | 36    | 0 | 0                                            | 0    | 5     | 0 | 0                                            | 0    | 31    | 0 | 335          | 4472          |
| 8:50 AM                         | 0                   | 143  | 13    | 0 | 0                   | 119  | 25    | 0 | 0                                            | 0    | 12    | 0 | 0                                            | 0    | 27    | 0 | 339          | 4437          |
| 8:55 AM                         | 0                   | 141  | 10    | 0 | 0                   | 116  | 50    | 0 | 0                                            | 0    | 13    | 0 | 0                                            | 0    | 23    | 0 | 353          | 4414          |
| <b>Peak 15-Min Flowrates</b>    | <b>Northbound</b>   |      |       |   | <b>Southbound</b>   |      |       |   | <b>Eastbound</b>                             |      |       |   | <b>Westbound</b>                             |      |       |   | <b>Total</b> |               |
|                                 | Left                | Thru | Right | U | Left                | Thru | Right | U | Left                                         | Thru | Right | U | Left                                         | Thru | Right | U |              |               |
| All Vehicles                    | 0                   | 2536 | 108   | 0 | 0                   | 1472 | 468   | 0 | 0                                            | 0    | 48    | 0 | 0                                            | 0    | 464   | 0 | 5096         |               |
| Heavy Trucks                    | 0                   | 108  | 24    | 0 | 0                   | 88   | 68    | 0 | 0                                            | 0    | 4     | 0 | 0                                            | 0    | 56    | 0 | 348          |               |
| Pedestrians                     | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0            |               |
| Bicycles                        | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0            |               |
| Railroad                        | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0            |               |
| Stopped Buses                   | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0            |               |

Comments:

**LOCATION:** OR 213 -- Redland Rd  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13421005  
**DATE:** Thu, Jun 11 2015

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



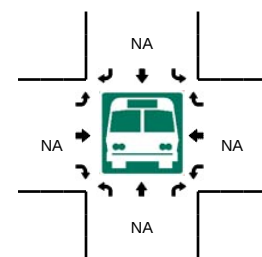
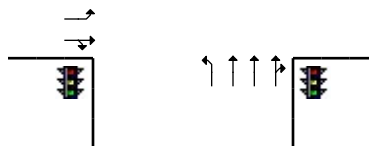
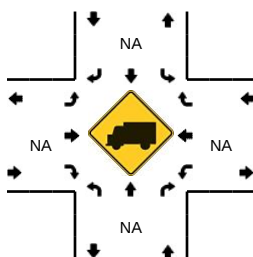
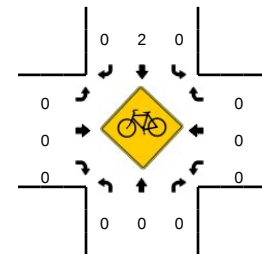
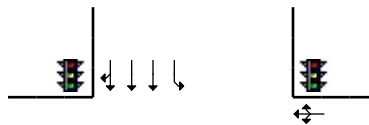
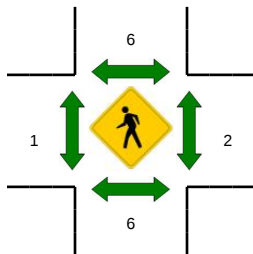
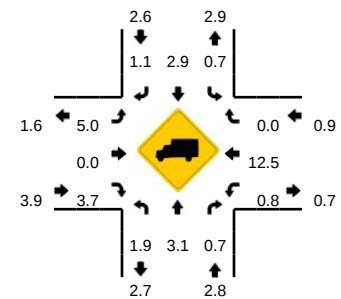
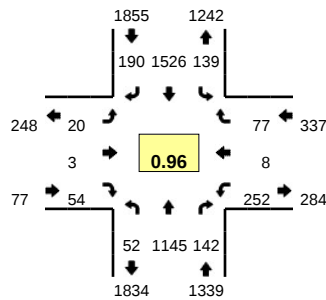
| 5-Min Count Period<br>Beginning At | OR 213 (Northbound) |      |       |   | OR 213 (Southbound) |      |       |   | Redland Rd (Eastbound) |      |       |   | Redland Rd (Westbound) |      |       |   | Total | Hourly Totals |
|------------------------------------|---------------------|------|-------|---|---------------------|------|-------|---|------------------------|------|-------|---|------------------------|------|-------|---|-------|---------------|
|                                    | Left                | Thru | Right | U | Left                | Thru | Right | U | Left                   | Thru | Right | U | Left                   | Thru | Right | U |       |               |
| 7:00 AM                            | 5                   | 173  | 0     | 0 | 0                   | 83   | 17    | 0 | 29                     | 0    | 14    | 0 | 0                      | 0    | 0     | 0 | 321   |               |
| 7:05 AM                            | 6                   | 149  | 0     | 0 | 0                   | 91   | 14    | 0 | 66                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 335   |               |
| 7:10 AM                            | 5                   | 179  | 0     | 0 | 0                   | 105  | 22    | 0 | 39                     | 0    | 16    | 0 | 0                      | 0    | 0     | 0 | 366   |               |
| 7:15 AM                            | 3                   | 195  | 0     | 0 | 0                   | 110  | 34    | 0 | 31                     | 0    | 8     | 0 | 0                      | 0    | 0     | 0 | 381   |               |
| 7:20 AM                            | 2                   | 164  | 0     | 0 | 0                   | 101  | 19    | 0 | 69                     | 0    | 20    | 0 | 0                      | 0    | 0     | 0 | 375   |               |
| 7:25 AM                            | 3                   | 178  | 0     | 0 | 0                   | 102  | 17    | 0 | 30                     | 0    | 10    | 0 | 0                      | 0    | 0     | 0 | 340   |               |
| 7:30 AM                            | 7                   | 177  | 0     | 0 | 0                   | 103  | 29    | 0 | 42                     | 0    | 14    | 0 | 0                      | 0    | 0     | 0 | 372   |               |
| 7:35 AM                            | 5                   | 160  | 0     | 0 | 0                   | 87   | 24    | 0 | 62                     | 0    | 8     | 0 | 0                      | 0    | 0     | 0 | 346   |               |
| 7:40 AM                            | 14                  | 147  | 0     | 0 | 0                   | 95   | 26    | 0 | 49                     | 0    | 8     | 0 | 0                      | 0    | 0     | 0 | 339   |               |
| 7:45 AM                            | 8                   | 146  | 0     | 0 | 0                   | 117  | 31    | 0 | 41                     | 0    | 8     | 0 | 0                      | 0    | 0     | 0 | 351   |               |
| 7:50 AM                            | 11                  | 143  | 0     | 0 | 0                   | 110  | 28    | 0 | 36                     | 0    | 6     | 0 | 0                      | 0    | 0     | 0 | 334   |               |
| 7:55 AM                            | 15                  | 109  | 0     | 0 | 0                   | 86   | 25    | 0 | 49                     | 0    | 8     | 0 | 0                      | 0    | 0     | 0 | 292   | 4152          |
| 8:00 AM                            | 14                  | 162  | 0     | 0 | 0                   | 105  | 26    | 0 | 40                     | 0    | 11    | 0 | 0                      | 0    | 0     | 0 | 358   | 4189          |
| 8:05 AM                            | 8                   | 151  | 0     | 0 | 0                   | 101  | 25    | 0 | 28                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 322   | 4176          |
| 8:10 AM                            | 12                  | 126  | 0     | 0 | 0                   | 99   | 34    | 0 | 36                     | 0    | 5     | 0 | 0                      | 0    | 0     | 0 | 312   | 4122          |
| 8:15 AM                            | 12                  | 132  | 0     | 0 | 0                   | 125  | 22    | 0 | 28                     | 0    | 7     | 0 | 0                      | 0    | 0     | 0 | 326   | 4067          |
| 8:20 AM                            | 5                   | 128  | 0     | 0 | 0                   | 116  | 17    | 0 | 35                     | 0    | 5     | 0 | 0                      | 0    | 0     | 0 | 306   | 3998          |
| 8:25 AM                            | 9                   | 129  | 0     | 0 | 0                   | 102  | 30    | 0 | 49                     | 0    | 12    | 0 | 0                      | 0    | 0     | 0 | 331   | 3989          |
| 8:30 AM                            | 2                   | 149  | 0     | 0 | 0                   | 104  | 28    | 0 | 33                     | 0    | 3     | 0 | 0                      | 0    | 0     | 0 | 319   | 3936          |
| 8:35 AM                            | 4                   | 146  | 0     | 0 | 0                   | 98   | 20    | 0 | 28                     | 0    | 6     | 0 | 0                      | 0    | 0     | 0 | 302   | 3892          |
| 8:40 AM                            | 5                   | 135  | 0     | 0 | 0                   | 88   | 24    | 0 | 38                     | 0    | 7     | 0 | 0                      | 0    | 0     | 0 | 297   | 3850          |
| 8:45 AM                            | 6                   | 118  | 0     | 0 | 0                   | 95   | 20    | 0 | 51                     | 0    | 7     | 0 | 0                      | 0    | 0     | 0 | 297   | 3796          |
| 8:50 AM                            | 7                   | 118  | 0     | 0 | 0                   | 117  | 20    | 0 | 32                     | 0    | 3     | 0 | 0                      | 0    | 0     | 0 | 297   | 3759          |
| 8:55 AM                            | 2                   | 105  | 0     | 0 | 0                   | 100  | 19    | 0 | 33                     | 0    | 6     | 0 | 0                      | 0    | 0     | 0 | 265   | 3732          |
| 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 |       |               |
|                                    | 40                  | 2152 | 0     | 0 | 0                   | 1264 | 300   | 0 | 556                    | 0    | 176   | 0 | 0                      | 0    | 0     | 0 | 4488  |               |
|                                    | 12                  | 140  | 0     | 0 | 0                   | 84   | 8     | 0 | 16                     | 0    | 8     | 0 | 0                      | 0    | 0     | 0 | 268   |               |
|                                    | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0     |               |
|                                    | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0     |               |
| Stopped Buses                      |                     |      |       |   |                     |      |       |   |                        |      |       |   |                        |      |       |   |       |               |

Comments:

**LOCATION:** McLoughlin Blvd -- Dunes Dr  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13413104  
**DATE:** Tue, Jun 02 2015

**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:20 PM -- 5:35 PM**



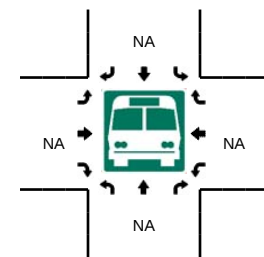
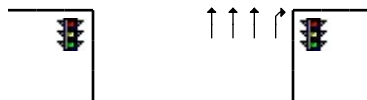
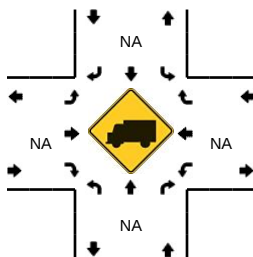
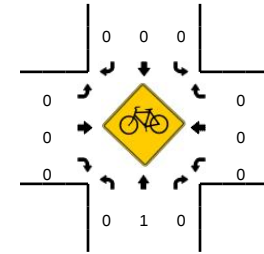
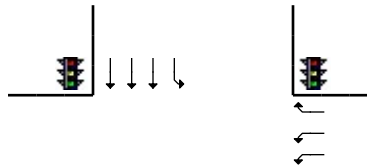
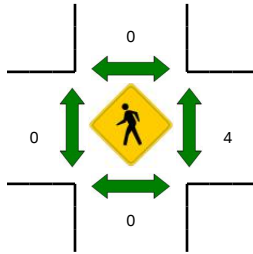
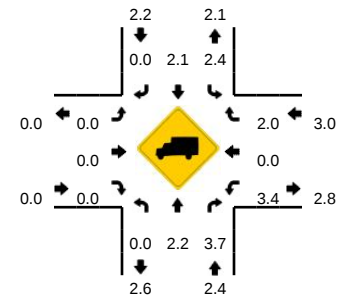
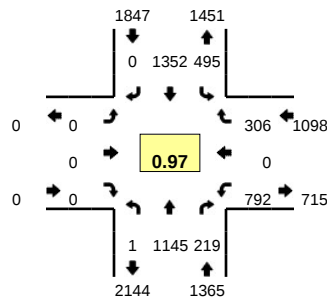
| 5-Min Count Period<br>Beginning At | McLoughlin Blvd (Northbound) |      |       |   | McLoughlin Blvd (Southbound) |      |       |   | Dunes Dr (Eastbound) |      |       |   | Dunes Dr (Westbound) |      |       |   | Total | Hourly Totals |
|------------------------------------|------------------------------|------|-------|---|------------------------------|------|-------|---|----------------------|------|-------|---|----------------------|------|-------|---|-------|---------------|
|                                    | Left                         | Thru | Right | U | Left                         | Thru | Right | U | Left                 | Thru | Right | U | Left                 | Thru | Right | U |       |               |
| 4:00 PM                            | 4                            | 70   | 15    | 0 | 10                           | 105  | 16    | 0 | 3                    | 3    | 6     | 0 | 24                   | 1    | 5     | 0 | 262   |               |
| 4:05 PM                            | 5                            | 118  | 13    | 0 | 13                           | 129  | 16    | 0 | 7                    | 0    | 4     | 0 | 26                   | 1    | 5     | 0 | 337   |               |
| 4:10 PM                            | 5                            | 83   | 21    | 0 | 16                           | 148  | 16    | 0 | 2                    | 1    | 4     | 0 | 19                   | 0    | 7     | 0 | 322   |               |
| 4:15 PM                            | 2                            | 88   | 6     | 0 | 14                           | 118  | 10    | 0 | 4                    | 1    | 4     | 0 | 27                   | 1    | 2     | 0 | 277   |               |
| 4:20 PM                            | 5                            | 80   | 8     | 0 | 8                            | 81   | 13    | 0 | 5                    | 0    | 1     | 0 | 21                   | 3    | 6     | 0 | 231   |               |
| 4:25 PM                            | 4                            | 109  | 12    | 0 | 8                            | 125  | 22    | 0 | 2                    | 1    | 3     | 0 | 20                   | 1    | 6     | 0 | 313   |               |
| 4:30 PM                            | 1                            | 102  | 12    | 0 | 10                           | 107  | 11    | 0 | 2                    | 0    | 8     | 0 | 27                   | 1    | 7     | 0 | 288   |               |
| 4:35 PM                            | 4                            | 68   | 11    | 1 | 6                            | 104  | 10    | 0 | 1                    | 1    | 2     | 0 | 21                   | 1    | 11    | 0 | 241   |               |
| 4:40 PM                            | 3                            | 101  | 15    | 0 | 4                            | 98   | 11    | 0 | 0                    | 0    | 9     | 0 | 28                   | 1    | 8     | 0 | 278   |               |
| 4:45 PM                            | 6                            | 99   | 10    | 0 | 15                           | 132  | 16    | 0 | 0                    | 1    | 3     | 0 | 15                   | 2    | 12    | 0 | 311   |               |
| 4:50 PM                            | 1                            | 88   | 9     | 0 | 3                            | 129  | 10    | 0 | 0                    | 0    | 4     | 0 | 20                   | 1    | 6     | 0 | 271   |               |
| 4:55 PM                            | 4                            | 84   | 10    | 0 | 15                           | 103  | 10    | 0 | 0                    | 0    | 3     | 0 | 24                   | 1    | 9     | 0 | 263   | 3394          |
| 5:00 PM                            | 3                            | 83   | 13    | 0 | 10                           | 119  | 16    | 0 | 1                    | 0    | 5     | 0 | 17                   | 0    | 7     | 0 | 274   | 3406          |
| 5:05 PM                            | 2                            | 101  | 7     | 0 | 17                           | 126  | 15    | 0 | 4                    | 1    | 4     | 0 | 12                   | 0    | 6     | 0 | 295   | 3364          |
| 5:10 PM                            | 5                            | 93   | 11    | 0 | 17                           | 111  | 17    | 0 | 0                    | 0    | 5     | 0 | 29                   | 2    | 7     | 0 | 297   | 3339          |
| 5:15 PM                            | 5                            | 99   | 9     | 0 | 11                           | 93   | 13    | 0 | 2                    | 0    | 6     | 0 | 25                   | 0    | 7     | 0 | 270   | 3332          |
| 5:20 PM                            | 5                            | 103  | 16    | 0 | 15                           | 169  | 16    | 0 | 0                    | 1    | 7     | 0 | 16                   | 1    | 6     | 0 | 355   | 3456          |
| 5:25 PM                            | 3                            | 98   | 13    | 0 | 12                           | 118  | 20    | 0 | 3                    | 0    | 3     | 0 | 22                   | 2    | 5     | 0 | 299   | 3442          |
| 5:30 PM                            | 6                            | 66   | 5     | 1 | 12                           | 146  | 13    | 0 | 0                    | 0    | 5     | 0 | 24                   | 0    | 6     | 0 | 284   | 3438          |
| 5:35 PM                            | 3                            | 103  | 8     | 0 | 7                            | 109  | 19    | 0 | 2                    | 0    | 5     | 0 | 17                   | 1    | 9     | 0 | 283   | 3480          |
| 5:40 PM                            | 4                            | 117  | 18    | 0 | 11                           | 153  | 14    | 0 | 3                    | 0    | 3     | 0 | 18                   | 0    | 4     | 0 | 345   | 3547          |
| 5:45 PM                            | 6                            | 77   | 10    | 0 | 12                           | 129  | 16    | 0 | 2                    | 0    | 1     | 0 | 21                   | 1    | 6     | 0 | 281   | 3517          |
| 5:50 PM                            | 5                            | 86   | 20    | 1 | 11                           | 128  | 13    | 0 | 2                    | 0    | 3     | 0 | 26                   | 1    | 7     | 0 | 303   | 3549          |
| 5:55 PM                            | 3                            | 119  | 12    | 0 | 4                            | 125  | 18    | 0 | 1                    | 1    | 7     | 0 | 25                   | 0    | 7     | 0 | 322   | 3608          |
| 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                           | 1068 | 136   | 4 | 156                          | 1732 | 196   | 0 | 12                   | 4    | 60    | 0 | 248                  | 12   | 68    | 0 | 3752  |               |
| Heavy Trucks                       | 0                            | 16   | 0     |   | 0                            | 40   | 4     |   | 0                    | 0    | 4     |   | 0                    | 0    | 0     |   | 64    |               |
| Pedestrians                        |                              | 8    |       |   |                              | 4    |       |   |                      | 0    |       |   |                      | 0    |       |   | 12    |               |
| Bicycles                           | 0                            | 0    | 0     |   | 0                            | 0    | 0     |   | 0                    | 0    | 0     |   | 0                    | 0    | 0     |   | 0     |               |
| Railroad                           |                              |      |       |   |                              |      |       |   |                      |      |       |   |                      |      |       |   |       |               |
| Stopped Buses                      |                              |      |       |   |                              |      |       |   |                      |      |       |   |                      |      |       |   |       |               |

Comments:

**LOCATION:** McLoughlin Blvd -- I-205 SB Ramps  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13413102  
**DATE:** Tue, Jun 02 2015

**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:35 PM -- 5:50 PM**

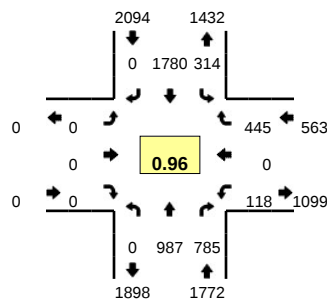


| 5-Min Count Period<br>Beginning At | McLoughlin Blvd (Northbound) |      |       |   | McLoughlin Blvd (Southbound) |      |       |   | I-205 SB Ramps (Eastbound) |      |       |   | I-205 SB Ramps (Westbound) |      |       |   | Total | Hourly Totals |
|------------------------------------|------------------------------|------|-------|---|------------------------------|------|-------|---|----------------------------|------|-------|---|----------------------------|------|-------|---|-------|---------------|
|                                    | Left                         | Thru | Right | U | Left                         | Thru | Right | U | Left                       | Thru | Right | U | Left                       | Thru | Right | U |       |               |
| 4:00 PM                            | 0                            | 62   | 9     | 0 | 33                           | 106  | 0     | 0 | 0                          | 0    | 0     | 0 | 77                         | 0    | 24    | 0 | 311   |               |
| 4:05 PM                            | 0                            | 135  | 16    | 0 | 45                           | 122  | 0     | 0 | 0                          | 0    | 0     | 0 | 32                         | 0    | 25    | 0 | 375   |               |
| 4:10 PM                            | 0                            | 102  | 19    | 0 | 39                           | 119  | 0     | 0 | 0                          | 0    | 0     | 0 | 75                         | 0    | 25    | 0 | 379   |               |
| 4:15 PM                            | 0                            | 84   | 14    | 0 | 38                           | 108  | 0     | 0 | 0                          | 0    | 0     | 0 | 63                         | 0    | 28    | 0 | 335   |               |
| 4:20 PM                            | 0                            | 60   | 6     | 0 | 31                           | 91   | 0     | 0 | 0                          | 0    | 0     | 0 | 73                         | 0    | 26    | 0 | 287   |               |
| 4:25 PM                            | 0                            | 108  | 20    | 0 | 40                           | 107  | 0     | 0 | 0                          | 0    | 0     | 0 | 47                         | 0    | 29    | 0 | 351   |               |
| 4:30 PM                            | 0                            | 110  | 21    | 0 | 25                           | 102  | 0     | 0 | 0                          | 0    | 0     | 0 | 49                         | 0    | 21    | 0 | 328   |               |
| 4:35 PM                            | 0                            | 66   | 21    | 0 | 30                           | 83   | 0     | 0 | 0                          | 0    | 0     | 0 | 63                         | 0    | 21    | 0 | 284   |               |
| 4:40 PM                            | 0                            | 106  | 10    | 0 | 48                           | 104  | 0     | 0 | 0                          | 0    | 0     | 0 | 49                         | 0    | 31    | 0 | 348   |               |
| 4:45 PM                            | 0                            | 103  | 10    | 0 | 43                           | 114  | 0     | 0 | 0                          | 0    | 0     | 0 | 59                         | 0    | 21    | 0 | 350   |               |
| 4:50 PM                            | 0                            | 106  | 12    | 0 | 31                           | 104  | 0     | 0 | 0                          | 0    | 0     | 0 | 80                         | 0    | 23    | 0 | 356   |               |
| 4:55 PM                            | 0                            | 54   | 13    | 0 | 39                           | 94   | 0     | 0 | 0                          | 0    | 0     | 0 | 88                         | 0    | 26    | 0 | 314   | 4018          |
| 5:00 PM                            | 0                            | 91   | 14    | 0 | 43                           | 117  | 0     | 0 | 0                          | 0    | 0     | 0 | 58                         | 0    | 17    | 0 | 340   | 4047          |
| 5:05 PM                            | 0                            | 103  | 25    | 0 | 30                           | 109  | 0     | 0 | 0                          | 0    | 0     | 0 | 68                         | 0    | 16    | 0 | 351   | 4023          |
| 5:10 PM                            | 0                            | 114  | 29    | 0 | 45                           | 84   | 0     | 0 | 0                          | 0    | 0     | 0 | 61                         | 0    | 21    | 0 | 354   | 3998          |
| 5:15 PM                            | 0                            | 74   | 20    | 0 | 38                           | 97   | 0     | 0 | 0                          | 0    | 0     | 0 | 67                         | 0    | 28    | 0 | 324   | 3987          |
| 5:20 PM                            | 0                            | 97   | 16    | 0 | 47                           | 149  | 0     | 0 | 0                          | 0    | 0     | 0 | 58                         | 0    | 35    | 0 | 402   | 4102          |
| 5:25 PM                            | 0                            | 94   | 22    | 0 | 31                           | 102  | 0     | 0 | 0                          | 0    | 0     | 0 | 83                         | 0    | 29    | 0 | 361   | 4112          |
| 5:30 PM                            | 0                            | 57   | 9     | 0 | 39                           | 113  | 0     | 0 | 0                          | 0    | 0     | 0 | 87                         | 0    | 23    | 0 | 328   | 4112          |
| 5:35 PM                            | 0                            | 97   | 22    | 0 | 37                           | 124  | 0     | 0 | 0                          | 0    | 0     | 0 | 60                         | 0    | 33    | 0 | 373   | 4201          |
| 5:40 PM                            | 0                            | 117  | 8     | 1 | 48                           | 130  | 0     | 0 | 0                          | 0    | 0     | 0 | 57                         | 0    | 26    | 1 | 388   | 4241          |
| 5:45 PM                            | 0                            | 102  | 29    | 0 | 28                           | 93   | 0     | 0 | 0                          | 0    | 0     | 0 | 74                         | 0    | 25    | 0 | 351   | 4242          |
| 5:50 PM                            | 0                            | 74   | 13    | 0 | 56                           | 96   | 0     | 0 | 0                          | 0    | 0     | 0 | 78                         | 0    | 30    | 0 | 347   | 4233          |
| 5:55 PM                            | 0                            | 125  | 12    | 0 | 53                           | 138  | 0     | 0 | 0                          | 0    | 0     | 0 | 40                         | 0    | 23    | 0 | 391   | 4310          |
| Peak 15-Min Flowrates              | Northbound                   |      |       |   | Southbound                   |      |       |   | Eastbound                  |      |       |   | Westbound                  |      |       |   | Total |               |
|                                    | Left                         | Thru | Right | U | Left                         | Thru | Right | U | Left                       | Thru | Right | U | Left                       | Thru | Right | U |       |               |
| All Vehicles                       | 0                            | 1264 | 236   | 4 | 452                          | 1388 | 0     | 0 | 0                          | 0    | 0     | 0 | 764                        | 0    | 336   | 4 | 4448  |               |
| Heavy Trucks                       | 0                            | 36   | 4     |   | 8                            | 44   | 0     |   | 0                          | 0    | 0     |   | 16                         | 0    | 12    |   | 120   |               |
| Pedestrians                        | 0                            |      |       |   | 0                            |      |       |   | 0                          |      |       |   | 4                          |      |       |   | 4     |               |
| Bicycles                           | 0                            | 0    | 0     |   | 0                            | 0    | 0     |   | 0                          | 0    | 0     |   | 0                          | 0    | 0     |   | 0     |               |
| Railroad                           |                              |      |       |   |                              |      |       |   |                            |      |       |   |                            |      |       |   |       |               |
| Stopped Buses                      |                              |      |       |   |                              |      |       |   |                            |      |       |   |                            |      |       |   |       |               |

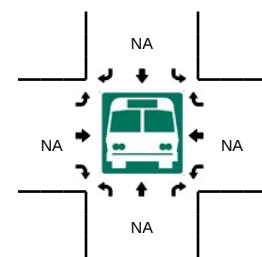
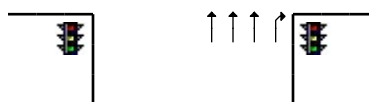
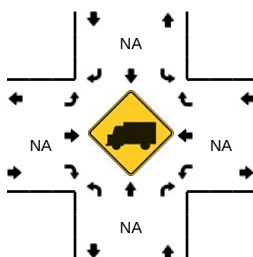
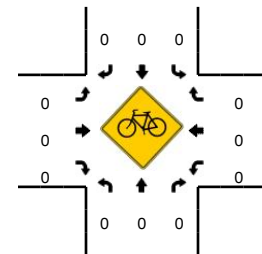
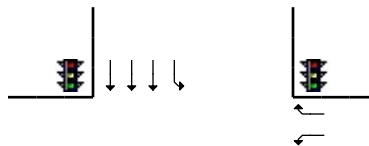
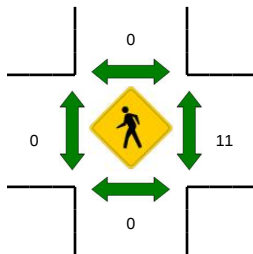
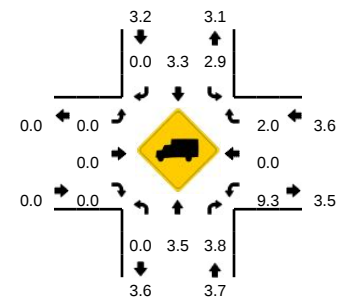
Comments:

**LOCATION:** McLoughlin Blvd/OR 99E -- I-205 NB Ramps  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13421002  
**DATE:** Thu, Jun 11 2015



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



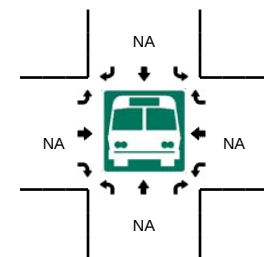
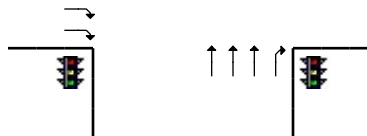
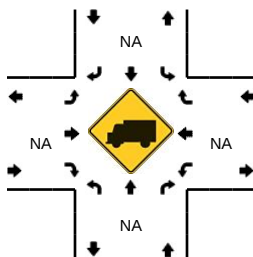
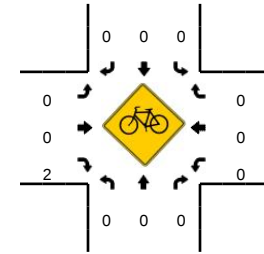
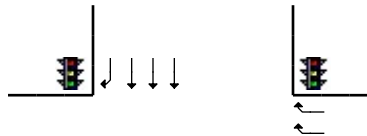
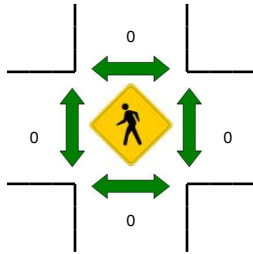
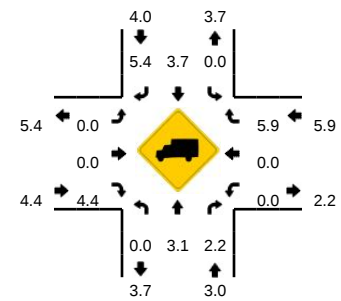
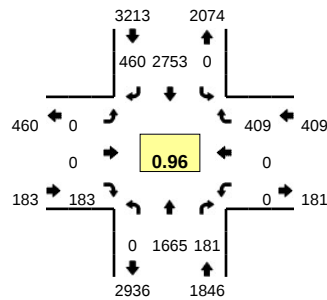
| 5-Min Count Period Beginning At | McLoughlin Blvd/OR 99E (Northbound) |      |       |   | McLoughlin Blvd/OR 99E (Southbound) |      |       |   | I-205 NB Ramps (Eastbound) |      |       |   | I-205 NB Ramps (Westbound) |      |       |    | Total | Hourly Totals |
|---------------------------------|-------------------------------------|------|-------|---|-------------------------------------|------|-------|---|----------------------------|------|-------|---|----------------------------|------|-------|----|-------|---------------|
|                                 | Left                                | Thru | Right | U | Left                                | Thru | Right | U | Left                       | Thru | Right | U | Left                       | Thru | Right | U  |       |               |
| 4:00 PM                         | 0                                   | 79   | 70    | 0 | 23                                  | 126  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 52    | 0  | 350   |               |
| 4:05 PM                         | 0                                   | 73   | 63    | 0 | 38                                  | 126  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 5    | 0     | 50 | 355   |               |
| 4:10 PM                         | 0                                   | 72   | 56    | 0 | 31                                  | 147  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 10   | 0     | 32 | 348   |               |
| 4:15 PM                         | 0                                   | 87   | 63    | 0 | 25                                  | 160  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 8    | 0     | 36 | 379   |               |
| 4:20 PM                         | 0                                   | 81   | 66    | 0 | 18                                  | 141  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 6    | 0     | 29 | 341   |               |
| 4:25 PM                         | 0                                   | 57   | 41    | 0 | 30                                  | 157  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 13   | 0     | 50 | 348   |               |
| 4:30 PM                         | 0                                   | 61   | 53    | 0 | 24                                  | 153  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 12   | 0     | 30 | 333   |               |
| 4:35 PM                         | 0                                   | 73   | 55    | 0 | 33                                  | 155  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 2    | 0     | 41 | 359   |               |
| 4:40 PM                         | 0                                   | 82   | 55    | 0 | 33                                  | 166  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 15   | 0     | 38 | 389   |               |
| 4:45 PM                         | 0                                   | 80   | 61    | 0 | 32                                  | 158  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 9    | 0     | 39 | 379   |               |
| 4:50 PM                         | 0                                   | 73   | 63    | 0 | 26                                  | 157  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 5    | 0     | 28 | 352   |               |
| 4:55 PM                         | 0                                   | 85   | 75    | 0 | 13                                  | 151  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 9    | 0     | 34 | 367   | 4300          |
| 5:00 PM                         | 0                                   | 92   | 66    | 0 | 30                                  | 127  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 10   | 0     | 49 | 374   | 4324          |
| 5:05 PM                         | 0                                   | 92   | 62    | 0 | 15                                  | 157  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 16   | 0     | 44 | 386   | 4355          |
| 5:10 PM                         | 0                                   | 88   | 72    | 0 | 39                                  | 136  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 7    | 0     | 34 | 376   | 4383          |
| 5:15 PM                         | 0                                   | 109  | 81    | 0 | 17                                  | 144  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 10   | 0     | 28 | 389   | 4393          |
| 5:20 PM                         | 0                                   | 92   | 62    | 0 | 31                                  | 144  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 5    | 0     | 41 | 375   | 4427          |
| 5:25 PM                         | 0                                   | 61   | 72    | 0 | 29                                  | 143  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 7    | 0     | 35 | 347   | 4426          |
| 5:30 PM                         | 0                                   | 58   | 60    | 0 | 21                                  | 167  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 5    | 0     | 28 | 339   | 4432          |
| 5:35 PM                         | 0                                   | 103  | 61    | 0 | 33                                  | 141  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 10   | 0     | 50 | 398   | 4471          |
| 5:40 PM                         | 0                                   | 70   | 58    | 0 | 27                                  | 160  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 12   | 0     | 30 | 357   | 4439          |
| 5:45 PM                         | 0                                   | 67   | 66    | 0 | 30                                  | 154  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 13   | 0     | 36 | 366   | 4426          |
| 5:50 PM                         | 0                                   | 81   | 70    | 0 | 19                                  | 148  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 13   | 0     | 35 | 366   | 4440          |
| 5:55 PM                         | 0                                   | 74   | 55    | 0 | 23                                  | 159  | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 10   | 0     | 35 | 356   | 4429          |
| Peak 15-Min Flowrates           | Northbound                          |      |       |   | Southbound                          |      |       |   | Eastbound                  |      |       |   | Westbound                  |      |       |    | Total |               |
|                                 | Left                                | Thru | Right | U | Left                                | Thru | Right | U | Left                       | Thru | Right | U | Left                       | Thru | Right | U  |       |               |
| All Vehicles                    | 0                                   | 1156 | 860   | 0 | 284                                 | 1748 | 0     | 0 | 0                          | 0    | 0     | 0 | 132                        | 0    | 424   | 0  | 4604  |               |
| Heavy Trucks                    | 0                                   | 48   | 24    | 0 | 0                                   | 72   | 0     | 0 | 0                          | 0    | 0     | 0 | 4                          | 0    | 0     | 0  | 148   |               |
| Pedestrians                     | 0                                   | 0    | 0     | 0 | 0                                   | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 16                         | 0    | 0     | 0  | 16    |               |
| Bicycles                        | 0                                   | 0    | 0     | 0 | 0                                   | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0  | 0     |               |
| Railroad                        | 0                                   | 0    | 0     | 0 | 0                                   | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0  | 0     |               |
| Stopped Buses                   | 0                                   | 0    | 0     | 0 | 0                                   | 0    | 0     | 0 | 0                          | 0    | 0     | 0 | 0                          | 0    | 0     | 0  | 0     |               |

Comments:

**LOCATION:** OR 213 -- Washington St/Clackamas River Dr  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13421004  
**DATE:** Thu, Jun 11 2015

**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



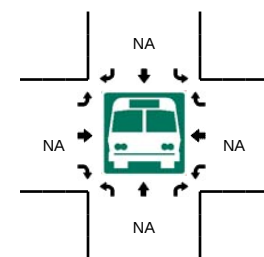
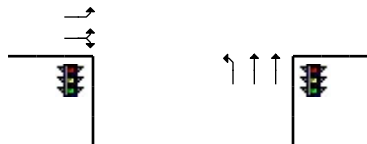
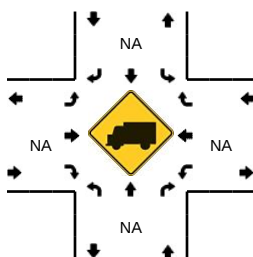
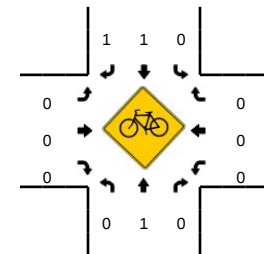
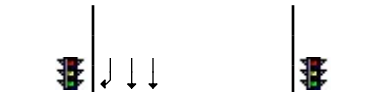
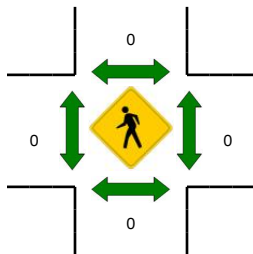
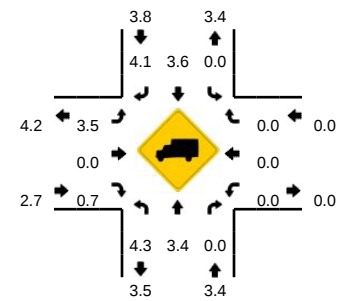
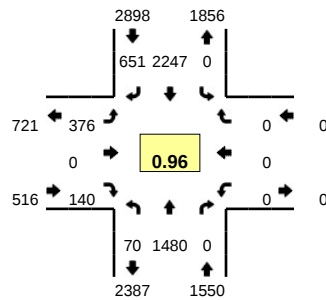
| 5-Min Count Period Beginning At | OR 213 (Northbound) |      |       |   | OR 213 (Southbound) |      |       |   | Washington St/Clackamas River Dr (Eastbound) |      |       |   | Washington St/Clackamas River Dr (Westbound) |      |       |   | Total | Hourly Totals |
|---------------------------------|---------------------|------|-------|---|---------------------|------|-------|---|----------------------------------------------|------|-------|---|----------------------------------------------|------|-------|---|-------|---------------|
|                                 | Left                | Thru | Right | U | Left                | Thru | Right | U | Left                                         | Thru | Right | U | Left                                         | Thru | Right | U |       |               |
| 4:00 PM                         | 0                   | 122  | 13    | 0 | 0                   | 187  | 40    | 0 | 0                                            | 0    | 14    | 0 | 0                                            | 0    | 47    | 0 | 423   |               |
| 4:05 PM                         | 0                   | 149  | 14    | 0 | 0                   | 185  | 48    | 0 | 0                                            | 0    | 11    | 0 | 0                                            | 0    | 37    | 0 | 444   |               |
| 4:10 PM                         | 0                   | 171  | 17    | 0 | 0                   | 200  | 30    | 0 | 0                                            | 0    | 18    | 0 | 0                                            | 0    | 27    | 0 | 463   |               |
| 4:15 PM                         | 0                   | 141  | 11    | 0 | 0                   | 215  | 41    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 29    | 0 | 445   |               |
| 4:20 PM                         | 0                   | 151  | 12    | 0 | 0                   | 210  | 40    | 0 | 0                                            | 0    | 15    | 0 | 0                                            | 0    | 38    | 0 | 466   |               |
| 4:25 PM                         | 0                   | 158  | 12    | 0 | 0                   | 212  | 42    | 0 | 0                                            | 0    | 20    | 0 | 0                                            | 0    | 32    | 0 | 476   |               |
| 4:30 PM                         | 0                   | 124  | 10    | 0 | 0                   | 226  | 32    | 0 | 0                                            | 0    | 17    | 0 | 0                                            | 0    | 36    | 0 | 445   |               |
| 4:35 PM                         | 0                   | 142  | 10    | 0 | 0                   | 204  | 40    | 0 | 0                                            | 0    | 12    | 0 | 0                                            | 0    | 56    | 0 | 464   |               |
| 4:40 PM                         | 0                   | 176  | 12    | 0 | 0                   | 199  | 49    | 0 | 0                                            | 0    | 15    | 0 | 0                                            | 0    | 25    | 0 | 476   |               |
| 4:45 PM                         | 0                   | 147  | 9     | 0 | 0                   | 215  | 32    | 0 | 0                                            | 0    | 23    | 0 | 0                                            | 0    | 33    | 0 | 459   |               |
| 4:50 PM                         | 0                   | 130  | 16    | 0 | 0                   | 216  | 39    | 0 | 0                                            | 0    | 8     | 0 | 0                                            | 0    | 44    | 0 | 453   |               |
| 4:55 PM                         | 0                   | 147  | 15    | 0 | 0                   | 209  | 48    | 0 | 0                                            | 0    | 17    | 0 | 0                                            | 0    | 27    | 0 | 463   | 5477          |
| 5:00 PM                         | 0                   | 142  | 18    | 0 | 0                   | 196  | 45    | 0 | 0                                            | 0    | 23    | 0 | 0                                            | 0    | 24    | 0 | 448   | 5502          |
| 5:05 PM                         | 0                   | 145  | 15    | 0 | 0                   | 226  | 40    | 0 | 0                                            | 0    | 15    | 0 | 0                                            | 0    | 52    | 0 | 493   | 5551          |
| 5:10 PM                         | 0                   | 162  | 17    | 0 | 0                   | 227  | 39    | 0 | 0                                            | 0    | 13    | 0 | 0                                            | 0    | 41    | 0 | 499   | 5587          |
| 5:15 PM                         | 0                   | 164  | 22    | 0 | 0                   | 213  | 31    | 0 | 0                                            | 0    | 23    | 0 | 0                                            | 0    | 24    | 0 | 477   | 5619          |
| 5:20 PM                         | 0                   | 136  | 24    | 0 | 0                   | 234  | 39    | 0 | 0                                            | 0    | 11    | 0 | 0                                            | 0    | 40    | 0 | 484   | 5637          |
| 5:25 PM                         | 0                   | 150  | 15    | 0 | 0                   | 236  | 39    | 0 | 0                                            | 0    | 12    | 0 | 0                                            | 0    | 38    | 0 | 490   | 5651          |
| 5:30 PM                         | 0                   | 130  | 12    | 0 | 0                   | 218  | 40    | 0 | 0                                            | 0    | 11    | 0 | 0                                            | 0    | 28    | 0 | 439   | 5645          |
| 5:35 PM                         | 0                   | 124  | 13    | 0 | 0                   | 226  | 36    | 0 | 0                                            | 0    | 13    | 0 | 0                                            | 0    | 24    | 0 | 436   | 5617          |
| 5:40 PM                         | 0                   | 132  | 18    | 0 | 0                   | 251  | 37    | 0 | 0                                            | 0    | 17    | 0 | 0                                            | 0    | 52    | 0 | 507   | 5648          |
| 5:45 PM                         | 0                   | 150  | 13    | 0 | 0                   | 246  | 43    | 0 | 0                                            | 0    | 5     | 0 | 0                                            | 0    | 22    | 0 | 479   | 5668          |
| 5:50 PM                         | 0                   | 117  | 4     | 0 | 0                   | 225  | 34    | 0 | 0                                            | 0    | 30    | 0 | 0                                            | 0    | 32    | 0 | 442   | 5657          |
| 5:55 PM                         | 0                   | 113  | 10    | 0 | 0                   | 255  | 37    | 0 | 0                                            | 0    | 10    | 0 | 0                                            | 0    | 32    | 0 | 457   | 5651          |
| Peak 15-Min Flowrates           | Northbound          |      |       |   | Southbound          |      |       |   | Eastbound                                    |      |       |   | Westbound                                    |      |       |   | Total |               |
|                                 | Left                | Thru | Right | U | Left                | Thru | Right | U | Left                                         | Thru | Right | U | Left                                         | Thru | Right | U |       |               |
| All Vehicles                    | 0                   | 1884 | 216   | 0 | 0                   | 2664 | 440   | 0 | 0                                            | 0    | 204   | 0 | 0                                            | 0    | 468   | 0 | 5876  |               |
| Heavy Trucks                    | 0                   | 48   | 8     | 0 | 0                   | 140  | 36    | 0 | 0                                            | 0    | 12    | 0 | 0                                            | 0    | 32    | 0 | 276   |               |
| Pedestrians                     | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0     |               |
| Bicycles                        | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0     |               |
| Railroad                        | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0     |               |
| Stopped Buses                   | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0                                            | 0    | 0     | 0 | 0     |               |

Comments:

**LOCATION:** OR 213 -- Redland Rd  
**CITY/STATE:** Oregon City, OR

**QC JOB #:** 13421006  
**DATE:** Thu, Jun 11 2015

**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:40 PM -- 5:55 PM**



| 5-Min Count Period<br>Beginning At | OR 213 (Northbound) |      |       |   | OR 213 (Southbound) |      |       |   | Redland Rd (Eastbound) |      |       |   | Redland Rd (Westbound) |      |       |   | Total | Hourly Totals |
|------------------------------------|---------------------|------|-------|---|---------------------|------|-------|---|------------------------|------|-------|---|------------------------|------|-------|---|-------|---------------|
|                                    | Left                | Thru | Right | U | Left                | Thru | Right | U | Left                   | Thru | Right | U | Left                   | Thru | Right | U |       |               |
| 4:00 PM                            | 13                  | 113  | 0     | 0 | 0                   | 138  | 34    | 0 | 28                     | 0    | 16    | 0 | 0                      | 0    | 0     | 0 | 342   |               |
| 4:05 PM                            | 6                   | 139  | 0     | 0 | 0                   | 147  | 47    | 0 | 24                     | 0    | 18    | 0 | 0                      | 0    | 0     | 0 | 381   |               |
| 4:10 PM                            | 8                   | 162  | 0     | 0 | 0                   | 196  | 61    | 0 | 22                     | 0    | 5     | 0 | 0                      | 0    | 0     | 0 | 454   |               |
| 4:15 PM                            | 7                   | 116  | 0     | 0 | 0                   | 161  | 36    | 0 | 48                     | 0    | 19    | 0 | 0                      | 0    | 0     | 0 | 387   |               |
| 4:20 PM                            | 10                  | 133  | 0     | 0 | 0                   | 164  | 54    | 0 | 40                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 410   |               |
| 4:25 PM                            | 6                   | 129  | 0     | 0 | 0                   | 194  | 48    | 0 | 31                     | 0    | 12    | 0 | 0                      | 0    | 0     | 0 | 420   |               |
| 4:30 PM                            | 8                   | 119  | 0     | 0 | 0                   | 189  | 66    | 0 | 18                     | 0    | 13    | 0 | 0                      | 0    | 0     | 0 | 413   |               |
| 4:35 PM                            | 13                  | 124  | 0     | 0 | 0                   | 143  | 37    | 0 | 38                     | 0    | 14    | 0 | 0                      | 0    | 0     | 0 | 369   |               |
| 4:40 PM                            | 5                   | 148  | 0     | 0 | 0                   | 200  | 40    | 0 | 33                     | 0    | 12    | 0 | 0                      | 0    | 0     | 0 | 438   |               |
| 4:45 PM                            | 5                   | 128  | 0     | 0 | 0                   | 198  | 54    | 0 | 31                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 425   |               |
| 4:50 PM                            | 10                  | 112  | 0     | 1 | 0                   | 167  | 38    | 0 | 40                     | 0    | 18    | 0 | 0                      | 0    | 0     | 0 | 386   |               |
| 4:55 PM                            | 3                   | 142  | 0     | 0 | 0                   | 198  | 49    | 0 | 22                     | 0    | 7     | 0 | 0                      | 0    | 0     | 0 | 421   | 4846          |
| 5:00 PM                            | 2                   | 120  | 0     | 0 | 0                   | 176  | 47    | 0 | 32                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 386   | 4890          |
| 5:05 PM                            | 5                   | 124  | 0     | 0 | 0                   | 172  | 39    | 0 | 48                     | 0    | 20    | 0 | 0                      | 0    | 0     | 0 | 408   | 4917          |
| 5:10 PM                            | 6                   | 147  | 0     | 0 | 0                   | 195  | 66    | 0 | 35                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 458   | 4921          |
| 5:15 PM                            | 3                   | 146  | 0     | 0 | 0                   | 188  | 56    | 0 | 29                     | 0    | 6     | 0 | 0                      | 0    | 0     | 0 | 428   | 4962          |
| 5:20 PM                            | 4                   | 132  | 0     | 0 | 0                   | 177  | 42    | 0 | 37                     | 0    | 15    | 0 | 0                      | 0    | 0     | 0 | 407   | 4959          |
| 5:25 PM                            | 9                   | 131  | 0     | 0 | 0                   | 186  | 54    | 0 | 26                     | 0    | 6     | 0 | 0                      | 0    | 0     | 0 | 412   | 4951          |
| 5:30 PM                            | 7                   | 113  | 0     | 0 | 0                   | 213  | 51    | 0 | 26                     | 0    | 13    | 0 | 0                      | 0    | 0     | 0 | 423   | 4961          |
| 5:35 PM                            | 4                   | 115  | 0     | 0 | 0                   | 165  | 51    | 0 | 27                     | 0    | 10    | 0 | 0                      | 0    | 0     | 0 | 372   | 4964          |
| 5:40 PM                            | 6                   | 127  | 0     | 0 | 0                   | 183  | 59    | 0 | 26                     | 0    | 13    | 0 | 0                      | 0    | 0     | 0 | 414   | 4940          |
| 5:45 PM                            | 5                   | 133  | 0     | 0 | 0                   | 217  | 63    | 0 | 25                     | 0    | 14    | 0 | 0                      | 0    | 0     | 0 | 457   | 4972          |
| 5:50 PM                            | 9                   | 99   | 0     | 0 | 0                   | 204  | 67    | 0 | 29                     | 0    | 16    | 0 | 0                      | 0    | 0     | 0 | 424   | 5010          |
| 5:55 PM                            | 10                  | 93   | 0     | 0 | 0                   | 171  | 56    | 0 | 36                     | 0    | 9     | 0 | 0                      | 0    | 0     | 0 | 375   | 4964          |
| 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                       | 80                  | 1436 | 0     | 0 | 0                   | 2416 | 756   | 0 | 320                    | 0    | 172   | 0 | 0                      | 0    | 0     | 0 | 5180  |               |
| Heavy Trucks                       | 0                   | 36   | 0     | 0 | 0                   | 60   | 20    | 0 | 12                     | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 128   |               |
| Pedestrians                        | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0     |               |
| Bicycles                           | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0     |               |
| Railroad                           | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0     |               |
| Stopped Buses                      | 0                   | 0    | 0     | 0 | 0                   | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0                      | 0    | 0     | 0 | 0     |               |

Comments:

**Appendix B**  
Description of Level-of-  
Service Methods and  
Criteria

## Appendix B Level-of-Service Concept

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from “A” to “F”.<sup>1</sup>

### SIGNALIZED INTERSECTIONS

The six level-of-service grades are described qualitatively for signalized intersections in Table B1. Additionally, Table B2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service “D” is generally considered to represent the minimum acceptable design standard.

Table B-1 Level-of-Service Definitions (Signalized Intersections)

| Level of Service | Average Delay per Vehicle                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                | Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.                                                                                                                                                       |
| B                | Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. MOR vehicles stop than for a level of service A, causing higher levels of average delay.                                                                                                                                       |
| C                | Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.                       |
| D                | Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. |
| E                | Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.                                                 |
| F                | Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.                                                          |

<sup>1</sup> Most of the material in this appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2000).

Table B2 Level-of-Service Criteria for Signalized Intersections

| Level of Service | Average Control Delay per Vehicle (Seconds) |
|------------------|---------------------------------------------|
| A                | <10.0                                       |
| B                | >10 and ≤20                                 |
| C                | >20 and ≤35                                 |
| D                | >35 and ≤55                                 |
| E                | >55 and ≤80                                 |
| F                | >80                                         |

## UNSIGNALIZED INTERSECTIONS

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2000 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table B3. A quantitative definition of level of service for unsignalized intersections is presented in Table B4. Using this definition, Level of Service “E” is generally considered to represent the minimum acceptable design standard.

Table B3 Level-of-Service Criteria for Unsignalized Intersections

| Level of Service | Average Delay per Vehicle to Minor Street                                                                                                                                                                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                | <ul style="list-style-type: none"> <li>Nearly all drivers find freedom of operation.</li> <li>Very seldom is there mOR than one vehicle in queue.</li> </ul>                                                                                                                                                                       |
| B                | <ul style="list-style-type: none"> <li>Some drivers begin to consider the delay an inconvenience.</li> <li>Occasionally there is mOR than one vehicle in queue.</li> </ul>                                                                                                                                                         |
| C                | <ul style="list-style-type: none"> <li>Many times there is mOR than one vehicle in queue.</li> <li>Most drivers feel restricted, but not objectionably so.</li> </ul>                                                                                                                                                              |
| D                | <ul style="list-style-type: none"> <li>Often there is mOR than one vehicle in queue.</li> <li>Drivers feel quite restricted.</li> </ul>                                                                                                                                                                                            |
| E                | <ul style="list-style-type: none"> <li>Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement.</li> <li>There is almost always mOR than one vehicle in queue.</li> <li>Drivers find the delays approaching intolerable levels.</li> </ul> |
| F                | <ul style="list-style-type: none"> <li>Forced flow.</li> <li>Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.</li> </ul>                                                                                                                      |

Table B4 Level-of-Service Criteria for Unsignalized Intersections

| Level of Service | Average Control Delay per Vehicle (Seconds) |
|------------------|---------------------------------------------|
| A                | <10.0                                       |
| B                | >10.0 and ≤ 15.0                            |
| C                | >15.0 and ≤ 25.0                            |
| D                | >25.0 and ≤ 35.0                            |
| E                | >35.0 and ≤ 50.0                            |
| F                | >50.0                                       |

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much mOR variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

**Appendix C**  
Year 2015 Existing  
Conditions Level-of-  
Service Worksheets

The Cove  
1: McLoughlin Blvd & Dunes Dr

Existing AM Peak Hour  
7/13/2015

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Volume (vph)                      | 24                                                                                | 7                                                                                 | 64                                                                                | 139                                                                               | 6                                                                                 | 56                                                                                | 55                                                                                  | 1430                                                                                | 67                                                                                  | 90                                                                                  | 1262                                                                                | 105                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.91                                                                                |                                                                                     | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.87                                                                              |                                                                                   | 1.00                                                                              | 0.87                                                                              |                                                                                   | 1.00                                                                                | 0.99                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1733                                                                              | 1503                                                                              |                                                                                   | 1751                                                                              | 1502                                                                              |                                                                                   | 1656                                                                                | 4867                                                                                |                                                                                     | 1787                                                                                | 4893                                                                                | 1482                                                                                |
| Flt Permitted                     | 0.71                                                                              | 1.00                                                                              |                                                                                   | 0.71                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1299                                                                              | 1503                                                                              |                                                                                   | 1300                                                                              | 1502                                                                              |                                                                                   | 1656                                                                                | 4867                                                                                |                                                                                     | 1787                                                                                | 4893                                                                                | 1482                                                                                |
| 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)                   | 27                                                                                | 8                                                                                 | 71                                                                                | 154                                                                               | 7                                                                                 | 62                                                                                | 61                                                                                  | 1589                                                                                | 74                                                                                  | 100                                                                                 | 1402                                                                                | 117                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 60                                                                                | 0                                                                                 | 0                                                                                 | 52                                                                                | 0                                                                                 | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 27                                                                                  |
| Lane Group Flow (vph)             | 27                                                                                | 19                                                                                | 0                                                                                 | 154                                                                               | 17                                                                                | 0                                                                                 | 61                                                                                  | 1659                                                                                | 0                                                                                   | 100                                                                                 | 1402                                                                                | 90                                                                                  |
| Confl. Peds. (#/hr)               | 3                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Heavy Vehicles (%)                | 4%                                                                                | 0%                                                                                | 9%                                                                                | 3%                                                                                | 0%                                                                                | 9%                                                                                | 9%                                                                                  | 6%                                                                                  | 3%                                                                                  | 1%                                                                                  | 6%                                                                                  | 9%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 14.5                                                                              | 14.5                                                                              |                                                                                   | 14.5                                                                              | 14.5                                                                              |                                                                                   | 7.1                                                                                 | 54.1                                                                                |                                                                                     | 8.6                                                                                 | 55.6                                                                                | 55.6                                                                                |
| Effective Green, g (s)            | 14.5                                                                              | 14.5                                                                              |                                                                                   | 14.5                                                                              | 14.5                                                                              |                                                                                   | 7.1                                                                                 | 54.1                                                                                |                                                                                     | 8.6                                                                                 | 55.6                                                                                | 55.6                                                                                |
| Actuated g/C Ratio                | 0.16                                                                              | 0.16                                                                              |                                                                                   | 0.16                                                                              | 0.16                                                                              |                                                                                   | 0.08                                                                                | 0.60                                                                                |                                                                                     | 0.10                                                                                | 0.62                                                                                | 0.62                                                                                |
| Clearance Time (s)                | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.3                                                                                 | 4.8                                                                                 |                                                                                     | 2.3                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                | 209                                                                               | 242                                                                               |                                                                                   | 209                                                                               | 241                                                                               |                                                                                   | 130                                                                                 | 2925                                                                                |                                                                                     | 170                                                                                 | 3022                                                                                | 915                                                                                 |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | 0.04                                                                                | c0.34                                                                               |                                                                                     | c0.06                                                                               | 0.29                                                                                |                                                                                     |
| v/s Ratio Perm                    | 0.02                                                                              |                                                                                   |                                                                                   | c0.12                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.06                                                                                |
| v/c Ratio                         | 0.13                                                                              | 0.08                                                                              |                                                                                   | 0.74                                                                              | 0.07                                                                              |                                                                                   | 0.47                                                                                | 0.57                                                                                |                                                                                     | 0.59                                                                                | 0.46                                                                                | 0.10                                                                                |
| Uniform Delay, d1                 | 32.3                                                                              | 32.1                                                                              |                                                                                   | 35.9                                                                              | 32.0                                                                              |                                                                                   | 39.6                                                                                | 10.9                                                                                |                                                                                     | 39.0                                                                                | 9.2                                                                                 | 7.0                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.69                                                                                | 0.36                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.2                                                                               | 0.1                                                                               |                                                                                   | 12.0                                                                              | 0.1                                                                               |                                                                                   | 0.9                                                                                 | 0.5                                                                                 |                                                                                     | 3.9                                                                                 | 0.5                                                                                 | 0.2                                                                                 |
| Delay (s)                         | 32.5                                                                              | 32.2                                                                              |                                                                                   | 47.9                                                                              | 32.1                                                                              |                                                                                   | 28.1                                                                                | 4.4                                                                                 |                                                                                     | 42.9                                                                                | 9.7                                                                                 | 7.2                                                                                 |
| Level of Service                  | C                                                                                 | C                                                                                 |                                                                                   | D                                                                                 | C                                                                                 |                                                                                   | C                                                                                   | A                                                                                   |                                                                                     | D                                                                                   | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 32.3                                                                              |                                                                                   |                                                                                   | 43.0                                                                              |                                                                                   |                                                                                     | 5.2                                                                                 |                                                                                     |                                                                                     | 11.6                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 11.1                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.60                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 12.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 61.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Existing AM Peak Hour  
7/13/2015

|                                   |                                                                                    |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                                                                                                                 | WBR                                                                               | NBT                                                                                                                                                                                                                                                   | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                                                                                                   |
| Lane Configurations               |   |  |    |  |  |    |
| Volume (vph)                      | 333                                                                                                                                                                 | 384                                                                               | 1297                                                                                                                                                                                                                                                  | 253                                                                               | 533                                                                               | 951                                                                                                                                                                                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  |
| Total Lost time (s)               | 5.5                                                                                                                                                                 | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Util. Factor                 | 0.97                                                                                                                                                                | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Frpb, ped/bikes                   | 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                                                                                                                                                                                                                                                  |
| Frt                               | 1.00                                                                                                                                                                | 0.85                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.85                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flt Protected                     | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (prot)                 | 3155                                                                                                                                                                | 1538                                                                              | 4940                                                                                                                                                                                                                                                  | 1451                                                                              | 1752                                                                              | 4940                                                                                                                                                                                                                                                  |
| Flt Permitted                     | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (perm)                 | 3155                                                                                                                                                                | 1538                                                                              | 4940                                                                                                                                                                                                                                                  | 1451                                                                              | 1752                                                                              | 4940                                                                                                                                                                                                                                                  |
| Peak-hour factor, PHF             | 0.91                                                                                                                                                                | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                  | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Adj. Flow (vph)                   | 366                                                                                                                                                                 | 422                                                                               | 1425                                                                                                                                                                                                                                                  | 278                                                                               | 586                                                                               | 1045                                                                                                                                                                                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     |
| Lane Group Flow (vph)             | 366                                                                                                                                                                 | 422                                                                               | 1425                                                                                                                                                                                                                                                  | 278                                                                               | 586                                                                               | 1045                                                                                                                                                                                                                                                  |
| Confl. Bikes (#/hr)               |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                       | 1                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |
| Heavy Vehicles (%)                | 11%                                                                                                                                                                 | 5%                                                                                | 5%                                                                                                                                                                                                                                                    | 9%                                                                                | 3%                                                                                | 5%                                                                                                                                                                                                                                                    |
| Turn Type                         | Prot                                                                                                                                                                | pm+ov                                                                             | NA                                                                                                                                                                                                                                                    | Free                                                                              | Prot                                                                              | NA                                                                                                                                                                                                                                                    |
| Protected Phases                  | 4                                                                                                                                                                   | 5                                                                                 | 6                                                                                                                                                                                                                                                     |                                                                                   | 5                                                                                 | 2                                                                                                                                                                                                                                                     |
| Permitted Phases                  |                                                                                                                                                                     | 4                                                                                 |                                                                                                                                                                                                                                                       | Free                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Green, G (s)             | 14.4                                                                                                                                                                | 46.4                                                                              | 29.3                                                                                                                                                                                                                                                  | 90.0                                                                              | 32.0                                                                              | 65.3                                                                                                                                                                                                                                                  |
| Effective Green, g (s)            | 14.4                                                                                                                                                                | 46.4                                                                              | 29.3                                                                                                                                                                                                                                                  | 90.0                                                                              | 32.0                                                                              | 65.3                                                                                                                                                                                                                                                  |
| Actuated g/C Ratio                | 0.16                                                                                                                                                                | 0.52                                                                              | 0.33                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.36                                                                              | 0.73                                                                                                                                                                                                                                                  |
| Clearance Time (s)                | 5.5                                                                                                                                                                 | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |                                                                                   | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Vehicle Extension (s)             | 2.3                                                                                                                                                                 | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |                                                                                   | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Grp Cap (vph)                | 504                                                                                                                                                                 | 861                                                                               | 1608                                                                                                                                                                                                                                                  | 1451                                                                              | 622                                                                               | 3584                                                                                                                                                                                                                                                  |
| v/s Ratio Prot                    | c0.12                                                                                                                                                               | 0.17                                                                              | c0.29                                                                                                                                                                                                                                                 |                                                                                   | c0.33                                                                             | 0.21                                                                                                                                                                                                                                                  |
| v/s Ratio Perm                    |                                                                                                                                                                     | 0.10                                                                              |                                                                                                                                                                                                                                                       | 0.19                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |
| v/c Ratio                         | 0.73                                                                                                                                                                | 0.49                                                                              | 0.89                                                                                                                                                                                                                                                  | 0.19                                                                              | 0.94                                                                              | 0.29                                                                                                                                                                                                                                                  |
| Uniform Delay, d1                 | 35.9                                                                                                                                                                | 14.1                                                                              | 28.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 28.1                                                                              | 4.3                                                                                                                                                                                                                                                   |
| Progression Factor                | 1.00                                                                                                                                                                | 1.00                                                                              | 0.71                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.25                                                                              | 0.75                                                                                                                                                                                                                                                  |
| Incremental Delay, d2             | 4.7                                                                                                                                                                 | 0.3                                                                               | 7.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 21.1                                                                              | 0.2                                                                                                                                                                                                                                                   |
| Delay (s)                         | 40.6                                                                                                                                                                | 14.4                                                                              | 27.6                                                                                                                                                                                                                                                  | 0.3                                                                               | 56.3                                                                              | 3.4                                                                                                                                                                                                                                                   |
| Level of Service                  | D                                                                                                                                                                   | B                                                                                 | C                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                 | A                                                                                                                                                                                                                                                     |
| Approach Delay (s)                | 26.6                                                                                                                                                                |                                                                                   | 23.1                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 22.4                                                                                                                                                                                                                                                  |
| Approach LOS                      | C                                                                                                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| HCM 2000 Control Delay            |                                                                                                                                                                     |                                                                                   | 23.5                                                                                                                                                                                                                                                  |                                                                                   | HCM 2000 Level of Service                                                         | C                                                                                                                                                                                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                                                                                                     |                                                                                   | 0.88                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Cycle Length (s)         |                                                                                                                                                                     |                                                                                   | 90.0                                                                                                                                                                                                                                                  |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                                                                                                                                                                                                  |
| Intersection Capacity Utilization |                                                                                                                                                                     |                                                                                   | 76.0%                                                                                                                                                                                                                                                 |                                                                                   | ICU Level of Service                                                              | D                                                                                                                                                                                                                                                     |
| Analysis Period (min)             |                                                                                                                                                                     |                                                                                   | 15                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| c Critical Lane Group             |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Existing AM Peak Hour

7/13/2015

|                                   |  |  |  |  |  |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 136                                                                               | 402                                                                               | 1061                                                                              | 779                                                                               | 196                                                                               | 1046                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.8                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 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                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 1597                                                                              | 1495                                                                              | 4803                                                                              | 1478                                                                              | 1671                                                                              | 4893                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 1597                                                                              | 1495                                                                              | 4803                                                                              | 1478                                                                              | 1671                                                                              | 4893                                                                              |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Adj. Flow (vph)                   | 146                                                                               | 432                                                                               | 1141                                                                              | 838                                                                               | 211                                                                               | 1125                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 321                                                                               | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 146                                                                               | 432                                                                               | 1141                                                                              | 517                                                                               | 211                                                                               | 1125                                                                              |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |
| Heavy Vehicles (%)                | 13%                                                                               | 8%                                                                                | 8%                                                                                | 7%                                                                                | 8%                                                                                | 6%                                                                                |
| Turn Type                         | Prot                                                                              | Free                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | Free                                                                              |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 12.8                                                                              | 90.0                                                                              | 49.5                                                                              | 49.5                                                                              | 13.4                                                                              | 66.9                                                                              |
| Effective Green, g (s)            | 12.8                                                                              | 90.0                                                                              | 49.5                                                                              | 49.5                                                                              | 13.4                                                                              | 66.9                                                                              |
| Actuated g/C Ratio                | 0.14                                                                              | 1.00                                                                              | 0.55                                                                              | 0.55                                                                              | 0.15                                                                              | 0.74                                                                              |
| Clearance Time (s)                | 5.5                                                                               |                                                                                   | 4.8                                                                               | 4.8                                                                               | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               |                                                                                   | 4.8                                                                               | 4.8                                                                               | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 227                                                                               | 1495                                                                              | 2641                                                                              | 812                                                                               | 248                                                                               | 3637                                                                              |
| v/s Ratio Prot                    | c0.09                                                                             |                                                                                   | 0.24                                                                              |                                                                                   | c0.13                                                                             | 0.23                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.29                                                                              |                                                                                   | c0.35                                                                             |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.64                                                                              | 0.29                                                                              | 0.43                                                                              | 0.64                                                                              | 0.85                                                                              | 0.31                                                                              |
| Uniform Delay, d1                 | 36.4                                                                              | 0.0                                                                               | 12.0                                                                              | 14.0                                                                              | 37.3                                                                              | 3.8                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.68                                                                              | 0.64                                                                              |
| Incremental Delay, d2             | 5.1                                                                               | 0.5                                                                               | 0.5                                                                               | 3.8                                                                               | 21.8                                                                              | 0.2                                                                               |
| Delay (s)                         | 41.5                                                                              | 0.5                                                                               | 12.5                                                                              | 17.8                                                                              | 47.4                                                                              | 2.7                                                                               |
| Level of Service                  | D                                                                                 | A                                                                                 | B                                                                                 | B                                                                                 | D                                                                                 | A                                                                                 |
| Approach Delay (s)                | 10.9                                                                              |                                                                                   | 14.7                                                                              |                                                                                   |                                                                                   | 9.7                                                                               |
| Approach LOS                      | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 12.4                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.67                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                              |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.4%                                                                             |                                                                                   | ICU Level of Service                                                              | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

The Cove  
4: OR 213 & Washington St/Clackamas River Dr

Existing AM Peak Hour

7/13/2015

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |
| Volume (vph)                      | 0                                                                                 | 0                                                                                 | 59                                                                                | 0                                                                                 | 0                                                                                 | 371                                                                               | 0                                                                                 | 2234                                                                                | 131                                                                                 | 0                                                                                   | 1463                                                                                | 422                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   | 0.91                                                                                | 1.00                                                                                |                                                                                     | 0.91                                                                                | 1.00                                                                                |
| Flt                               |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   | 1.00                                                                                | 0.85                                                                                |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   |                                                                                   | 2632                                                                              |                                                                                   |                                                                                   | 2493                                                                              |                                                                                   | 4893                                                                                | 1357                                                                                |                                                                                     | 4893                                                                                | 1404                                                                                |
| Flt Permitted                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   |                                                                                   | 2632                                                                              |                                                                                   |                                                                                   | 2493                                                                              |                                                                                   | 4893                                                                                | 1357                                                                                |                                                                                     | 4893                                                                                | 1404                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 0                                                                                 | 64                                                                                | 0                                                                                 | 0                                                                                 | 403                                                                               | 0                                                                                 | 2428                                                                                | 142                                                                                 | 0                                                                                   | 1590                                                                                | 459                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 0                                                                                 | 63                                                                                | 0                                                                                 | 0                                                                                   | 34                                                                                  | 0                                                                                   | 0                                                                                   | 98                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 9                                                                                 | 0                                                                                 | 0                                                                                 | 340                                                                               | 0                                                                                 | 2428                                                                                | 108                                                                                 | 0                                                                                   | 1590                                                                                | 361                                                                                 |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 8%                                                                                | 0%                                                                                | 0%                                                                                | 14%                                                                               | 0%                                                                                | 6%                                                                                  | 19%                                                                                 | 0%                                                                                  | 6%                                                                                  | 15%                                                                                 |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   | NA                                                                                  | Perm                                                                                |                                                                                     | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 5                                                                                 |                                                                                   |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             |                                                                                   |                                                                                   | 17.7                                                                              |                                                                                   |                                                                                   | 21.5                                                                              |                                                                                   | 98.5                                                                                | 98.5                                                                                |                                                                                     | 102.3                                                                               | 102.3                                                                               |
| Effective Green, g (s)            |                                                                                   |                                                                                   | 17.7                                                                              |                                                                                   |                                                                                   | 21.5                                                                              |                                                                                   | 98.5                                                                                | 98.5                                                                                |                                                                                     | 102.3                                                                               | 102.3                                                                               |
| Actuated g/C Ratio                |                                                                                   |                                                                                   | 0.14                                                                              |                                                                                   |                                                                                   | 0.17                                                                              |                                                                                   | 0.76                                                                                | 0.76                                                                                |                                                                                     | 0.79                                                                                | 0.79                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   | 4.8                                                                                 | 4.8                                                                                 |                                                                                     | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   |                                                                                   | 358                                                                               |                                                                                   |                                                                                   | 412                                                                               |                                                                                   | 3707                                                                                | 1028                                                                                |                                                                                     | 3850                                                                                | 1104                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.50                                                                               |                                                                                     |                                                                                     | 0.32                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   | c0.14                                                                             |                                                                                   |                                                                                     | 0.08                                                                                |                                                                                     |                                                                                     | 0.26                                                                                |
| v/c Ratio                         |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   |                                                                                   | 0.82                                                                              |                                                                                   | 0.65                                                                                | 0.10                                                                                |                                                                                     | 0.41                                                                                | 0.33                                                                                |
| Uniform Delay, d1                 |                                                                                   |                                                                                   | 48.7                                                                              |                                                                                   |                                                                                   | 52.4                                                                              |                                                                                   | 7.6                                                                                 | 4.1                                                                                 |                                                                                     | 4.4                                                                                 | 4.0                                                                                 |
| Progression Factor                |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.27                                                                                | 1.84                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 12.2                                                                              |                                                                                   | 0.4                                                                                 | 0.1                                                                                 |                                                                                     | 0.3                                                                                 | 0.8                                                                                 |
| Delay (s)                         |                                                                                   |                                                                                   | 48.7                                                                              |                                                                                   |                                                                                   | 64.6                                                                              |                                                                                   | 10.1                                                                                | 7.7                                                                                 |                                                                                     | 4.7                                                                                 | 4.8                                                                                 |
| Level of Service                  |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   | B                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 48.7                                                                              |                                                                                   |                                                                                   | 64.6                                                                              |                                                                                   |                                                                                   | 10.0                                                                                |                                                                                     |                                                                                     | 4.7                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 12.7                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.69                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     | 10.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.5%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

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| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 554                                                                               | 126                                                                               | 93                                                                                | 1909                                                                              | 1212                                                                              | 295                                                                               |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.4                                                                               | 4.0                                                                               | 4.0                                                                               | 6.0                                                                               | 6.0                                                                               | 5.4                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3273                                                                              | 1495                                                                              | 1703                                                                              | 3374                                                                              | 3406                                                                              | 1524                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3273                                                                              | 1495                                                                              | 1703                                                                              | 3374                                                                              | 3406                                                                              | 1524                                                                              |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Adj. Flow (vph)                   | 596                                                                               | 135                                                                               | 100                                                                               | 2053                                                                              | 1303                                                                              | 317                                                                               |
| RTOR Reduction (vph)              | 0                                                                                 | 31                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 77                                                                                |
| Lane Group Flow (vph)             | 596                                                                               | 104                                                                               | 100                                                                               | 2053                                                                              | 1303                                                                              | 240                                                                               |
| Heavy Vehicles (%)                | 7%                                                                                | 8%                                                                                | 6%                                                                                | 7%                                                                                | 6%                                                                                | 6%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | Prot                                                                              | NA                                                                                | NA                                                                                | pm+ov                                                                             |
| Protected Phases                  | 8                                                                                 | 1                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                 | 8                                                                                 |
| Permitted Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |
| Actuated Green, G (s)             | 25.8                                                                              | 41.8                                                                              | 16.0                                                                              | 92.8                                                                              | 72.8                                                                              | 98.6                                                                              |
| Effective Green, g (s)            | 25.8                                                                              | 41.8                                                                              | 16.0                                                                              | 92.8                                                                              | 72.8                                                                              | 98.6                                                                              |
| Actuated g/C Ratio                | 0.20                                                                              | 0.32                                                                              | 0.12                                                                              | 0.71                                                                              | 0.56                                                                              | 0.76                                                                              |
| Clearance Time (s)                | 5.4                                                                               | 4.0                                                                               | 4.0                                                                               | 6.0                                                                               | 6.0                                                                               | 5.4                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               | 4.8                                                                               | 2.3                                                                               |
| Lane Grp Cap (vph)                | 649                                                                               | 526                                                                               | 209                                                                               | 2408                                                                              | 1907                                                                              | 1219                                                                              |
| v/s Ratio Prot                    | c0.18                                                                             | 0.02                                                                              | 0.06                                                                              | c0.61                                                                             | 0.38                                                                              | 0.04                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.12                                                                              |
| v/c Ratio                         | 0.92                                                                              | 0.20                                                                              | 0.48                                                                              | 0.85                                                                              | 0.68                                                                              | 0.20                                                                              |
| Uniform Delay, d1                 | 51.1                                                                              | 31.9                                                                              | 53.1                                                                              | 13.6                                                                              | 20.4                                                                              | 4.5                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.75                                                                              | 0.14                                                                              |
| Incremental Delay, d2             | 17.8                                                                              | 0.1                                                                               | 1.0                                                                               | 4.1                                                                               | 1.9                                                                               | 0.0                                                                               |
| Delay (s)                         | 68.9                                                                              | 32.1                                                                              | 54.1                                                                              | 17.7                                                                              | 17.2                                                                              | 0.7                                                                               |
| Level of Service                  | E                                                                                 | C                                                                                 | D                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 |
| Approach Delay (s)                | 62.1                                                                              |                                                                                   |                                                                                   | 19.4                                                                              | 14.0                                                                              |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   | B                                                                                 | B                                                                                 |                                                                                   |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 24.4                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | C                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.90                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 15.4                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 78.1%                                                                             |                                                                                   | ICU Level of Service                                                              | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

The Cove  
1: McLoughlin Blvd & Dunes Dr

Existing PM Peak Hour

7/15/2015

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| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Volume (vph)                      | 20                                                                                | 3                                                                                 | 54                                                                                | 252                                                                               | 8                                                                                 | 77                                                                                | 52                                                                                  | 1145                                                                                | 142                                                                                 | 139                                                                                 | 1526                                                                                | 190                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.91                                                                                |                                                                                     | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                                | 0.98                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1712                                                                              | 1546                                                                              |                                                                                   | 1780                                                                              | 1599                                                                              |                                                                                   | 1770                                                                                | 4950                                                                                |                                                                                     | 1787                                                                                | 5036                                                                                | 1562                                                                                |
| Flt Permitted                     | 0.69                                                                              | 1.00                                                                              |                                                                                   | 0.72                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1246                                                                              | 1546                                                                              |                                                                                   | 1346                                                                              | 1599                                                                              |                                                                                   | 1770                                                                                | 4950                                                                                |                                                                                     | 1787                                                                                | 5036                                                                                | 1562                                                                                |
| 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)                   | 21                                                                                | 3                                                                                 | 56                                                                                | 262                                                                               | 8                                                                                 | 80                                                                                | 54                                                                                  | 1193                                                                                | 148                                                                                 | 145                                                                                 | 1590                                                                                | 198                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 43                                                                                | 0                                                                                 | 0                                                                                 | 61                                                                                | 0                                                                                 | 0                                                                                   | 11                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 26                                                                                  |
| Lane Group Flow (vph)             | 21                                                                                | 16                                                                                | 0                                                                                 | 262                                                                               | 27                                                                                | 0                                                                                 | 54                                                                                  | 1330                                                                                | 0                                                                                   | 145                                                                                 | 1590                                                                                | 172                                                                                 |
| Confl. Peds. (#/hr)               | 6                                                                                 |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   | 6                                                                                 | 1                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Heavy Vehicles (%)                | 5%                                                                                | 0%                                                                                | 4%                                                                                | 1%                                                                                | 12%                                                                               | 0%                                                                                | 2%                                                                                  | 3%                                                                                  | 1%                                                                                  | 1%                                                                                  | 3%                                                                                  | 1%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 26.0                                                                              | 26.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                              |                                                                                   | 7.1                                                                                 | 57.9                                                                                |                                                                                     | 13.3                                                                                | 64.1                                                                                | 64.1                                                                                |
| Effective Green, g (s)            | 26.0                                                                              | 26.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                              |                                                                                   | 7.1                                                                                 | 57.9                                                                                |                                                                                     | 13.3                                                                                | 64.1                                                                                | 64.1                                                                                |
| Actuated g/C Ratio                | 0.24                                                                              | 0.24                                                                              |                                                                                   | 0.24                                                                              | 0.24                                                                              |                                                                                   | 0.06                                                                                | 0.53                                                                                |                                                                                     | 0.12                                                                                | 0.58                                                                                | 0.58                                                                                |
| Clearance Time (s)                | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.3                                                                                 | 4.8                                                                                 |                                                                                     | 2.3                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                | 294                                                                               | 365                                                                               |                                                                                   | 318                                                                               | 377                                                                               |                                                                                   | 114                                                                                 | 2605                                                                                |                                                                                     | 216                                                                                 | 2934                                                                                | 910                                                                                 |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | 0.03                                                                                | c0.27                                                                               |                                                                                     | c0.08                                                                               | c0.32                                                                               |                                                                                     |
| v/s Ratio Perm                    | 0.02                                                                              |                                                                                   |                                                                                   | c0.19                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.11                                                                                |
| v/c Ratio                         | 0.07                                                                              | 0.04                                                                              |                                                                                   | 0.82                                                                              | 0.07                                                                              |                                                                                   | 0.47                                                                                | 0.51                                                                                |                                                                                     | 0.67                                                                                | 0.54                                                                                | 0.19                                                                                |
| Uniform Delay, d1                 | 32.6                                                                              | 32.4                                                                              |                                                                                   | 39.8                                                                              | 32.6                                                                              |                                                                                   | 49.6                                                                                | 16.9                                                                                |                                                                                     | 46.3                                                                                | 14.0                                                                                | 10.8                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.47                                                                                | 0.37                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.1                                                                               | 0.0                                                                               |                                                                                   | 15.4                                                                              | 0.1                                                                               |                                                                                   | 0.7                                                                                 | 0.3                                                                                 |                                                                                     | 6.9                                                                                 | 0.7                                                                                 | 0.5                                                                                 |
| Delay (s)                         | 32.7                                                                              | 32.5                                                                              |                                                                                   | 55.3                                                                              | 32.7                                                                              |                                                                                   | 24.1                                                                                | 6.5                                                                                 |                                                                                     | 53.1                                                                                | 14.7                                                                                | 11.2                                                                                |
| Level of Service                  | C                                                                                 | C                                                                                 |                                                                                   | E                                                                                 | C                                                                                 |                                                                                   | C                                                                                   | A                                                                                   |                                                                                     | D                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 32.5                                                                              |                                                                                   |                                                                                   | 49.6                                                                              |                                                                                   |                                                                                     | 7.2                                                                                 |                                                                                     |                                                                                     | 17.2                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 16.8                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.63                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 12.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.2%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

c Critical Lane Group

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Existing PM Peak Hour

7/15/2015

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 792                                                                               | 306                                                                               | 1145                                                                              | 219                                                                               | 495                                                                               | 1352                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.0                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 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                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3400                                                                              | 1583                                                                              | 5085                                                                              | 1518                                                                              | 1770                                                                              | 5085                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3400                                                                              | 1583                                                                              | 5085                                                                              | 1518                                                                              | 1770                                                                              | 5085                                                                              |
| Peak-hour factor, PHF             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Adj. Flow (vph)                   | 816                                                                               | 315                                                                               | 1180                                                                              | 226                                                                               | 510                                                                               | 1394                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 816                                                                               | 315                                                                               | 1180                                                                              | 226                                                                               | 510                                                                               | 1394                                                                              |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 2%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 30.4                                                                              | 72.4                                                                              | 23.3                                                                              | 110.0                                                                             | 42.0                                                                              | 69.3                                                                              |
| Effective Green, g (s)            | 30.4                                                                              | 72.4                                                                              | 23.3                                                                              | 110.0                                                                             | 42.0                                                                              | 69.3                                                                              |
| Actuated g/C Ratio                | 0.28                                                                              | 0.66                                                                              | 0.21                                                                              | 1.00                                                                              | 0.38                                                                              | 0.63                                                                              |
| Clearance Time (s)                | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               |                                                                                   | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               |                                                                                   | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 939                                                                               | 1099                                                                              | 1077                                                                              | 1518                                                                              | 675                                                                               | 3203                                                                              |
| v/s Ratio Prot                    | c0.24                                                                             | 0.11                                                                              | c0.23                                                                             |                                                                                   | c0.29                                                                             | 0.27                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.09                                                                              |                                                                                   | 0.15                                                                              |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.87                                                                              | 0.29                                                                              | 1.10                                                                              | 0.15                                                                              | 0.76                                                                              | 0.44                                                                              |
| Uniform Delay, d1                 | 37.9                                                                              | 7.9                                                                               | 43.4                                                                              | 0.0                                                                               | 29.5                                                                              | 10.4                                                                              |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 0.73                                                                              | 1.00                                                                              | 1.26                                                                              | 1.30                                                                              |
| Incremental Delay, d2             | 8.5                                                                               | 0.1                                                                               | 56.8                                                                              | 0.2                                                                               | 3.8                                                                               | 0.4                                                                               |
| Delay (s)                         | 46.4                                                                              | 8.0                                                                               | 88.5                                                                              | 0.2                                                                               | 41.2                                                                              | 13.8                                                                              |
| Level of Service                  | D                                                                                 | A                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | B                                                                                 |
| Approach Delay (s)                | 35.7                                                                              |                                                                                   | 74.3                                                                              |                                                                                   |                                                                                   | 21.1                                                                              |
| Approach LOS                      | D                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 41.7                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | D                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 92.8%                                                                             |                                                                                   | ICU Level of Service                                                              | F                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

c Critical Lane Group

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Existing PM Peak Hour

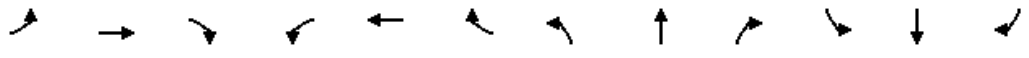
7/15/2015

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|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                                                                                                   | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                                                                                                   |
| Lane Configurations               |  |  |    |  |  |    |
| Volume (vph)                      | 118                                                                               | 445                                                                               | 987                                                                                                                                                                                                                                                   | 785                                                                               | 314                                                                               | 1780                                                                                                                                                                                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.85                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (prot)                 | 1656                                                                              | 1583                                                                              | 4988                                                                                                                                                                                                                                                  | 1482                                                                              | 1752                                                                              | 5036                                                                                                                                                                                                                                                  |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (perm)                 | 1656                                                                              | 1583                                                                              | 4988                                                                                                                                                                                                                                                  | 1482                                                                              | 1752                                                                              | 5036                                                                                                                                                                                                                                                  |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                                                                                                                                                                                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                                                                                                                                                                                  |
| Adj. Flow (vph)                   | 123                                                                               | 464                                                                               | 1028                                                                                                                                                                                                                                                  | 818                                                                               | 327                                                                               | 1854                                                                                                                                                                                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 263                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     |
| Lane Group Flow (vph)             | 123                                                                               | 464                                                                               | 1028                                                                                                                                                                                                                                                  | 555                                                                               | 327                                                                               | 1854                                                                                                                                                                                                                                                  |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       | 11                                                                                | 11                                                                                |                                                                                                                                                                                                                                                       |
| Heavy Vehicles (%)                | 9%                                                                                | 2%                                                                                | 4%                                                                                                                                                                                                                                                    | 4%                                                                                | 3%                                                                                | 3%                                                                                                                                                                                                                                                    |
| Turn Type                         | Prot                                                                              | Free                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                              | NA                                                                                                                                                                                                                                                    |
| Protected Phases                  | 4                                                                                 |                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                   | 5                                                                                 | 2                                                                                                                                                                                                                                                     |
| Permitted Phases                  |                                                                                   | Free                                                                              |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Green, G (s)             | 12.8                                                                              | 110.0                                                                             | 57.2                                                                                                                                                                                                                                                  | 57.2                                                                              | 25.7                                                                              | 86.9                                                                                                                                                                                                                                                  |
| Effective Green, g (s)            | 12.8                                                                              | 110.0                                                                             | 57.2                                                                                                                                                                                                                                                  | 57.2                                                                              | 25.7                                                                              | 86.9                                                                                                                                                                                                                                                  |
| Actuated g/C Ratio                | 0.12                                                                              | 1.00                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.52                                                                              | 0.23                                                                              | 0.79                                                                                                                                                                                                                                                  |
| Clearance Time (s)                | 5.5                                                                               |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Vehicle Extension (s)             | 2.3                                                                               |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Grp Cap (vph)                | 192                                                                               | 1583                                                                              | 2593                                                                                                                                                                                                                                                  | 770                                                                               | 409                                                                               | 3978                                                                                                                                                                                                                                                  |
| v/s Ratio Prot                    | c0.07                                                                             |                                                                                   | 0.21                                                                                                                                                                                                                                                  |                                                                                   | c0.19                                                                             | 0.37                                                                                                                                                                                                                                                  |
| v/s Ratio Perm                    |                                                                                   | 0.29                                                                              |                                                                                                                                                                                                                                                       | c0.37                                                                             |                                                                                   |                                                                                                                                                                                                                                                       |
| v/c Ratio                         | 0.64                                                                              | 0.29                                                                              | 0.40                                                                                                                                                                                                                                                  | 0.72                                                                              | 0.80                                                                              | 0.47                                                                                                                                                                                                                                                  |
| Uniform Delay, d1                 | 46.4                                                                              | 0.0                                                                               | 16.0                                                                                                                                                                                                                                                  | 20.3                                                                              | 39.7                                                                              | 3.8                                                                                                                                                                                                                                                   |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.60                                                                              | 0.60                                                                                                                                                                                                                                                  |
| Incremental Delay, d2             | 5.9                                                                               | 0.5                                                                               | 0.5                                                                                                                                                                                                                                                   | 5.8                                                                               | 8.5                                                                               | 0.3                                                                                                                                                                                                                                                   |
| Delay (s)                         | 52.3                                                                              | 0.5                                                                               | 16.4                                                                                                                                                                                                                                                  | 26.1                                                                              | 32.4                                                                              | 2.6                                                                                                                                                                                                                                                   |
| Level of Service                  | D                                                                                 | A                                                                                 | B                                                                                                                                                                                                                                                     | C                                                                                 | C                                                                                 | A                                                                                                                                                                                                                                                     |
| Approach Delay (s)                | 11.3                                                                              |                                                                                   | 20.7                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 7.1                                                                                                                                                                                                                                                   |
| Approach LOS                      | B                                                                                 |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | A                                                                                                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 13.1                                                                                                                                                                                                                                                  |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                                                                                                                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.73                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                                                                                                                                                                                                 |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                                                                                                                                                                                                  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 74.5%                                                                                                                                                                                                                                                 |                                                                                   | ICU Level of Service                                                              | D                                                                                                                                                                                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |

The Cove  
4: OR 213 & Washington St/Clackamas River Dr

Existing PM Peak Hour

7/15/2015

|                                   |  |      |       |      |      |                           |      |      |      |      |       |       |
|-----------------------------------|------------------------------------------------------------------------------------|------|-------|------|------|---------------------------|------|------|------|------|-------|-------|
| Movement                          | EBL                                                                                | EBT  | EBR   | WBL  | WBT  | WBR                       | NBL  | NBT  | NBR  | SBL  | SBT   | SBR   |
| Lane Configurations               |                                                                                    |      | ↗↘    |      |      | ↗↘                        |      | ↗↗↘  | ↗    |      | ↗↗↘   | ↗     |
| Volume (vph)                      | 0                                                                                  | 0    | 183   | 0    | 0    | 409                       | 0    | 1665 | 181  | 0    | 2753  | 460   |
| Ideal Flow (vphpl)                | 1900                                                                               | 1900 | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  |
| Total Lost time (s)               |                                                                                    |      | 4.0   |      |      | 4.0                       |      | 6.0  | 6.0  |      | 6.0   | 6.0   |
| Lane Util. Factor                 |                                                                                    |      | 0.88  |      |      | 0.88                      |      | 0.91 | 1.00 |      | 0.91  | 1.00  |
| Frpb, ped/bikes                   |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.00 | 1.00 |      | 1.00  | 0.98  |
| Flpb, ped/bikes                   |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.00 | 1.00 |      | 1.00  | 1.00  |
| Frt                               |                                                                                    |      | 0.85  |      |      | 0.85                      |      | 1.00 | 0.85 |      | 1.00  | 0.85  |
| Flt Protected                     |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.00 | 1.00 |      | 1.00  | 1.00  |
| Satd. Flow (prot)                 |                                                                                    |      | 2733  |      |      | 2682                      |      | 5036 | 1583 |      | 4988  | 1507  |
| Flt Permitted                     |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.00 | 1.00 |      | 1.00  | 1.00  |
| Satd. Flow (perm)                 |                                                                                    |      | 2733  |      |      | 2682                      |      | 5036 | 1583 |      | 4988  | 1507  |
| 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)                   | 0                                                                                  | 0    | 191   | 0    | 0    | 426                       | 0    | 1734 | 189  | 0    | 2868  | 479   |
| RTOR Reduction (vph)              | 0                                                                                  | 0    | 54    | 0    | 0    | 63                        | 0    | 0    | 47   | 0    | 0     | 77    |
| Lane Group Flow (vph)             | 0                                                                                  | 0    | 137   | 0    | 0    | 363                       | 0    | 1734 | 142  | 0    | 2868  | 402   |
| Confl. Bikes (#/hr)               |                                                                                    |      |       |      |      |                           |      |      |      |      |       | 1     |
| Heavy Vehicles (%)                | 0%                                                                                 | 0%   | 4%    | 0%   | 0%   | 6%                        | 0%   | 3%   | 2%   | 0%   | 4%    | 5%    |
| Turn Type                         |                                                                                    |      | Perm  |      |      | Perm                      |      | NA   | Perm |      | NA    | Perm  |
| Protected Phases                  |                                                                                    |      |       |      |      |                           |      | 6    |      |      | 2     |       |
| Permitted Phases                  |                                                                                    |      | 1     |      |      | 5                         |      |      | 6    |      |       | 2     |
| Actuated Green, G (s)             |                                                                                    |      | 11.0  |      |      | 22.2                      |      | 97.8 | 97.8 |      | 109.0 | 109.0 |
| Effective Green, g (s)            |                                                                                    |      | 11.0  |      |      | 22.2                      |      | 97.8 | 97.8 |      | 109.0 | 109.0 |
| Actuated g/C Ratio                |                                                                                    |      | 0.08  |      |      | 0.17                      |      | 0.75 | 0.75 |      | 0.84  | 0.84  |
| Clearance Time (s)                |                                                                                    |      | 4.0   |      |      | 4.0                       |      | 6.0  | 6.0  |      | 6.0   | 6.0   |
| Vehicle Extension (s)             |                                                                                    |      | 2.3   |      |      | 2.3                       |      | 4.8  | 4.8  |      | 4.8   | 4.8   |
| Lane Grp Cap (vph)                |                                                                                    |      | 231   |      |      | 458                       |      | 3788 | 1190 |      | 4182  | 1263  |
| v/s Ratio Prot                    |                                                                                    |      |       |      |      |                           |      | 0.34 |      |      | c0.58 |       |
| v/s Ratio Perm                    |                                                                                    |      | c0.05 |      |      | c0.14                     |      |      | 0.09 |      |       | 0.27  |
| v/c Ratio                         |                                                                                    |      | 0.59  |      |      | 0.79                      |      | 0.46 | 0.12 |      | 0.69  | 0.32  |
| Uniform Delay, d1                 |                                                                                    |      | 57.3  |      |      | 51.7                      |      | 6.1  | 4.4  |      | 4.0   | 2.3   |
| Progression Factor                |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.44 | 3.34 |      | 1.00  | 1.00  |
| Incremental Delay, d2             |                                                                                    |      | 3.1   |      |      | 8.7                       |      | 0.3  | 0.2  |      | 0.9   | 0.7   |
| Delay (s)                         |                                                                                    |      | 60.5  |      |      | 60.4                      |      | 9.1  | 14.8 |      | 4.9   | 3.0   |
| Level of Service                  |                                                                                    |      | E     |      |      | E                         |      | A    | B    |      | A     | A     |
| Approach Delay (s)                |                                                                                    | 60.5 |       |      | 60.4 |                           |      | 9.7  |      |      | 4.6   |       |
| Approach LOS                      |                                                                                    | E    |       |      | E    |                           |      | A    |      |      | A     |       |
| <b>Intersection Summary</b>       |                                                                                    |      |       |      |      |                           |      |      |      |      |       |       |
| HCM 2000 Control Delay            |                                                                                    |      | 12.1  |      |      | HCM 2000 Level of Service |      |      | B    |      |       |       |
| HCM 2000 Volume to Capacity ratio |                                                                                    |      | 0.69  |      |      |                           |      |      |      |      |       |       |
| Actuated Cycle Length (s)         |                                                                                    |      | 130.0 |      |      | Sum of lost time (s)      |      |      | 10.0 |      |       |       |
| Intersection Capacity Utilization |                                                                                    |      | 67.9% |      |      | ICU Level of Service      |      |      | C    |      |       |       |
| Analysis Period (min)             |                                                                                    |      | 15    |      |      |                           |      |      |      |      |       |       |
| c Critical Lane Group             |                                                                                    |      |       |      |      |                           |      |      |      |      |       |       |

|                                   |                                                                                    |                                                                                    |                                                                                    |                                                                                    |                                                                                    |                                                                                    |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                                                                                                                 | EBR                                                                                                                                                                 | NBL                                                                                                                                                                 | NBT                                                                                                                                                                 | SBT                                                                                                                                                                 | SBR                                                                                                                                                                 |
| Lane Configurations               |   |   |   |   |   |   |
| Volume (vph)                      | 376                                                                                                                                                                 | 140                                                                                                                                                                 | 70                                                                                                                                                                  | 1480                                                                                                                                                                | 2247                                                                                                                                                                | 651                                                                                                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                |
| Total Lost time (s)               | 5.4                                                                                                                                                                 | 4.0                                                                                                                                                                 | 4.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 5.4                                                                                                                                                                 |
| Lane Util. Factor                 | 0.97                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.98                                                                                                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Frt                               | 1.00                                                                                                                                                                | 0.85                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.85                                                                                                                                                                |
| Flt Protected                     | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Satd. Flow (prot)                 | 3400                                                                                                                                                                | 1599                                                                                                                                                                | 1736                                                                                                                                                                | 3505                                                                                                                                                                | 3471                                                                                                                                                                | 1527                                                                                                                                                                |
| Flt Permitted                     | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Satd. Flow (perm)                 | 3400                                                                                                                                                                | 1599                                                                                                                                                                | 1736                                                                                                                                                                | 3505                                                                                                                                                                | 3471                                                                                                                                                                | 1527                                                                                                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                |
| Adj. Flow (vph)                   | 392                                                                                                                                                                 | 146                                                                                                                                                                 | 73                                                                                                                                                                  | 1542                                                                                                                                                                | 2341                                                                                                                                                                | 678                                                                                                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                                                                                                   | 4                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 123                                                                                                                                                                 |
| Lane Group Flow (vph)             | 392                                                                                                                                                                 | 142                                                                                                                                                                 | 73                                                                                                                                                                  | 1542                                                                                                                                                                | 2341                                                                                                                                                                | 555                                                                                                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 1                                                                                                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                                                                                                  | 1%                                                                                                                                                                  | 4%                                                                                                                                                                  | 3%                                                                                                                                                                  | 4%                                                                                                                                                                  | 4%                                                                                                                                                                  |
| Turn Type                         | Prot                                                                                                                                                                | pm+ov                                                                                                                                                               | Prot                                                                                                                                                                | NA                                                                                                                                                                  | NA                                                                                                                                                                  | pm+ov                                                                                                                                                               |
| Protected Phases                  | 8                                                                                                                                                                   | 1                                                                                                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                   | 2                                                                                                                                                                   | 8                                                                                                                                                                   |
| Permitted Phases                  |                                                                                                                                                                     | 8                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 2                                                                                                                                                                   |
| Actuated Green, G (s)             | 17.9                                                                                                                                                                | 33.9                                                                                                                                                                | 16.0                                                                                                                                                                | 100.7                                                                                                                                                               | 80.7                                                                                                                                                                | 98.6                                                                                                                                                                |
| Effective Green, g (s)            | 17.9                                                                                                                                                                | 33.9                                                                                                                                                                | 16.0                                                                                                                                                                | 100.7                                                                                                                                                               | 80.7                                                                                                                                                                | 98.6                                                                                                                                                                |
| Actuated g/C Ratio                | 0.14                                                                                                                                                                | 0.26                                                                                                                                                                | 0.12                                                                                                                                                                | 0.77                                                                                                                                                                | 0.62                                                                                                                                                                | 0.76                                                                                                                                                                |
| Clearance Time (s)                | 5.4                                                                                                                                                                 | 4.0                                                                                                                                                                 | 4.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 5.4                                                                                                                                                                 |
| Vehicle Extension (s)             | 2.3                                                                                                                                                                 | 2.3                                                                                                                                                                 | 2.3                                                                                                                                                                 | 4.8                                                                                                                                                                 | 4.8                                                                                                                                                                 | 2.3                                                                                                                                                                 |
| Lane Grp Cap (vph)                | 468                                                                                                                                                                 | 466                                                                                                                                                                 | 213                                                                                                                                                                 | 2715                                                                                                                                                                | 2154                                                                                                                                                                | 1221                                                                                                                                                                |
| v/s Ratio Prot                    | c0.12                                                                                                                                                               | 0.04                                                                                                                                                                | 0.04                                                                                                                                                                | c0.44                                                                                                                                                               | c0.67                                                                                                                                                               | 0.06                                                                                                                                                                |
| v/s Ratio Perm                    |                                                                                                                                                                     | 0.05                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 0.30                                                                                                                                                                |
| v/c Ratio                         | 0.84                                                                                                                                                                | 0.30                                                                                                                                                                | 0.34                                                                                                                                                                | 0.57                                                                                                                                                                | 1.09                                                                                                                                                                | 0.45                                                                                                                                                                |
| Uniform Delay, d1                 | 54.6                                                                                                                                                                | 38.6                                                                                                                                                                | 52.2                                                                                                                                                                | 5.9                                                                                                                                                                 | 24.6                                                                                                                                                                | 5.8                                                                                                                                                                 |
| Progression Factor                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.48                                                                                                                                                                | 4.85                                                                                                                                                                |
| Incremental Delay, d2             | 12.0                                                                                                                                                                | 0.2                                                                                                                                                                 | 0.6                                                                                                                                                                 | 0.9                                                                                                                                                                 | 45.7                                                                                                                                                                | 0.1                                                                                                                                                                 |
| Delay (s)                         | 66.7                                                                                                                                                                | 38.8                                                                                                                                                                | 52.7                                                                                                                                                                | 6.8                                                                                                                                                                 | 82.3                                                                                                                                                                | 28.2                                                                                                                                                                |
| Level of Service                  | E                                                                                                                                                                   | D                                                                                                                                                                   | D                                                                                                                                                                   | A                                                                                                                                                                   | F                                                                                                                                                                   | C                                                                                                                                                                   |
| Approach Delay (s)                | 59.1                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     | 8.8                                                                                                                                                                 | 70.1                                                                                                                                                                |                                                                                                                                                                     |
| Approach LOS                      | E                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     | A                                                                                                                                                                   | E                                                                                                                                                                   |                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| HCM 2000 Control Delay            |                                                                                                                                                                     |                                                                                                                                                                     | 49.8                                                                                                                                                                |                                                                                                                                                                     | HCM 2000 Level of Service                                                                                                                                           | D                                                                                                                                                                   |
| HCM 2000 Volume to Capacity ratio |                                                                                                                                                                     |                                                                                                                                                                     | 0.98                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| Actuated Cycle Length (s)         |                                                                                                                                                                     |                                                                                                                                                                     | 130.0                                                                                                                                                               |                                                                                                                                                                     | Sum of lost time (s)                                                                                                                                                | 15.4                                                                                                                                                                |
| Intersection Capacity Utilization |                                                                                                                                                                     |                                                                                                                                                                     | 82.3%                                                                                                                                                               |                                                                                                                                                                     | ICU Level of Service                                                                                                                                                | E                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                                                                                                     |                                                                                                                                                                     | 15                                                                                                                                                                  |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| c Critical Lane Group             |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |

**Appendix D**  
ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT  
CRASH SUMMARIES BY YEAR BY COLLISION TYPE  
McLoughlin Boulevard OR 99E(Hwy 081) & Dunes Drive  
January 1, 2009 through December 31, 2013

| COLLISION TYPE | FATAL<br>CRASHES | NON-<br>FATAL<br>CRASHES | PROPERTY<br>DAMAGE<br>ONLY | TOTAL<br>CRASHES | PEOPLE<br>KILLED | PEOPLE<br>INJURED | TRUCKS | DRY<br>SURF | WET<br>SURF | DAY | DARK | INTER-<br>SECTION | INTER-<br>SECTION<br>RELATED | OFF-<br>ROAD |
|----------------|------------------|--------------------------|----------------------------|------------------|------------------|-------------------|--------|-------------|-------------|-----|------|-------------------|------------------------------|--------------|
| YEAR:          |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| TOTAL          |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| FINAL TOTAL    |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |

*Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.*

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT  
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

| COLLISION TYPE         | FATAL<br>CRASHES | NON-<br>FATAL<br>CRASHES | PROPERTY<br>DAMAGE<br>ONLY | TOTAL<br>CRASHES | PEOPLE<br>KILLED | PEOPLE<br>INJURED | TRUCKS | DRY<br>SURF | WET<br>SURF | DAY | DARK | INTER-<br>SECTION | INTER-<br>SECTION<br>RELATED | OFF-<br>ROAD |
|------------------------|------------------|--------------------------|----------------------------|------------------|------------------|-------------------|--------|-------------|-------------|-----|------|-------------------|------------------------------|--------------|
| YEAR: 2013             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 4                        | 4                          | 8                | 0                | 4                 | 0      | 5           | 1           | 5   | 3    | 8                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 1                        | 1                          | 2                | 0                | 3                 | 0      | 2           | 0           | 0   | 2    | 2                 | 0                            | 0            |
| 2013 TOTAL             | 0                | 5                        | 5                          | 10               | 0                | 7                 | 0      | 7           | 1           | 5   | 5    | 10                | 0                            | 0            |
| YEAR: 2012             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 0                        | 7                          | 7                | 0                | 0                 | 0      | 6           | 1           | 7   | 0    | 7                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 3                        | 3                          | 6                | 0                | 3                 | 0      | 4           | 2           | 3   | 3    | 6                 | 0                            | 0            |
| 2012 TOTAL             | 0                | 3                        | 10                         | 13               | 0                | 3                 | 0      | 10          | 3           | 10  | 3    | 13                | 0                            | 0            |
| YEAR: 2011             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 3                        | 2                          | 5                | 0                | 4                 | 0      | 3           | 2           | 4   | 1    | 5                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 0                        | 3                          | 3                | 0                | 0                 | 0      | 2           | 1           | 1   | 2    | 3                 | 0                            | 0            |
| 2011 TOTAL             | 0                | 3                        | 5                          | 8                | 0                | 4                 | 0      | 5           | 3           | 5   | 3    | 8                 | 0                            | 0            |
| YEAR: 2010             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 4                        | 1                          | 5                | 0                | 4                 | 0      | 5           | 0           | 4   | 1    | 5                 | 0                            | 0            |
| SIDESWIPE - OVERTAKING | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 2                        | 0                          | 2                | 0                | 4                 | 0      | 1           | 1           | 1   | 1    | 2                 | 0                            | 0            |
| 2010 TOTAL             | 0                | 6                        | 2                          | 8                | 0                | 8                 | 0      | 7           | 1           | 5   | 3    | 8                 | 0                            | 0            |
| YEAR: 2009             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| TURNING MOVEMENTS      | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 0           | 1           | 1   | 0    | 1                 | 0                            | 0            |
| 2009 TOTAL             | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 0           | 1           | 1   | 0    | 1                 | 0                            | 0            |
| FINAL TOTAL            | 0                | 17                       | 23                         | 40               | 0                | 22                | 0      | 29          | 9           | 26  | 14   | 40                | 0                            | 0            |

*Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.*

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

064 EAST PORTLAND FREEWAY

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ranps  
January 1, 2009 through December 31, 2013

| SER#          | S D       |                          |                                         | DATE       | COUNTY         | RD# FC                             |         | INT-TYP  |           |        |         | SPCL USE  |          | MOVE     | PRTC | INJ  | A S   |       | PED     | CAUSE          |       |      |       |               |     |     |
|---------------|-----------|--------------------------|-----------------------------------------|------------|----------------|------------------------------------|---------|----------|-----------|--------|---------|-----------|----------|----------|------|------|-------|-------|---------|----------------|-------|------|-------|---------------|-----|-----|
|               | P R S W   | E A U C O                | COMPNT                                  |            |                | CONN #                             | RD CHAR | (MEDIAN) | INT-REL   | OFFRD  | WTHR    | CRASH TYP | TRLR QTY |          |      |      | G E   | LICNS |         |                |       |      |       |               |     |     |
|               | E L G H R | D A Y                    | MLG TYP                                 |            |                | FIRST STREET                       | DIRECT  | LEGS     | TRAF-     | RNDDBT | SURF    | COLL TYP  | OWNER    |          |      |      | X RES | LOC   |         |                |       |      |       |               |     |     |
| INVEST        | D C S L K | TIME                     | CITY                                    | URBAN AREA | MILEPNT        | SECOND STREET                      | LOCTN   | (#LANES) | CNTL      | DRVMY  | LIGHT   | SVRTY     | V#       | VEH TYPE | TO   | P#   | TYPE  | SVRTY | E X RES | LOC            | ERROR | ACTN | EVENT |               |     |     |
| 04362<br>NONE | N N N     | 11/17/2011<br>Thu<br>8A  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19       | 1              | PACIFIC HY 99E<br>EB EX PAC HY 99E | INTER   | 3-LEG    | N         | N RAIN | S-1STOP | 01 NONE   | 0        | STRGHT   | 01   | DRVR | NONE  | 19    | M       | UNK<br>OR<25   | 026   | 000  | 07    |               |     |     |
|               |           |                          |                                         | 6 0        | PACIFIC HY 99E |                                    | NE      | YIELD    | N WET     | REAR   | PRVTE   | SE NW     |          |          |      |      |       |       |         |                |       |      |       |               |     |     |
|               |           |                          |                                         | 9.43       | 1              |                                    | N DAWN  | INJ      | PSNGR CAR | 01     | DRVR    | INJA      | 31       | F        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
|               |           |                          |                                         | 02 NONE    | 0              |                                    | STOP    | PRVTE    | SE NW     | 01     | DRVR    | NONE      | 64       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
| 01924<br>NONE | N N N     | 05/24/2012<br>Thu<br>9A  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11       | 1              | PACIFIC HY 99E<br>EB EX PAC HY 99E | INTER   | 3-LEG    | N         | N CLR  | S-1STOP | 01 NONE   | 0        | STRGHT   | 01   | DRVR | NONE  | 00    | F       | OR-Y<br>OR<25  | 026   | 000  | 07    |               |     |     |
|               |           |                          |                                         | 6 0        | PACIFIC HY 99E |                                    | NE      | YIELD    | N DRY     | REAR   | PRVTE   | SE NW     |          |          |      |      |       |       |         |                |       |      |       |               |     |     |
|               |           |                          |                                         | 9.43       | 1              |                                    | N DAY   | PDO      | PSNGR CAR | 01     | DRVR    | NONE      | 64       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
|               |           |                          |                                         | 02 NONE    | 0              |                                    | STOP    | PRVTE    | SE NW     | 01     | DRVR    | NONE      | 64       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
| 02321<br>NONE | N N N     | 06/28/2012<br>Thu<br>12P | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11       | 1              | PACIFIC HY 99E<br>EB EX PAC HY 99E | INTER   | 3-LEG    | N         | N CLR  | S-1STOP | 01 NONE   | 0        | STRGHT   | 01   | DRVR | NONE  | 24    | M       | OR-Y<br>OR<25  | 026   | 000  | 07    |               |     |     |
|               |           |                          |                                         | 6 0        | PACIFIC HY 99E |                                    | NE      | YIELD    | N DRY     | REAR   | PRVTE   | SE NW     |          |          |      |      |       |       |         |                |       |      |       |               |     |     |
|               |           |                          |                                         | 9.43       | 1              |                                    | N DAY   | PDO      | PSNGR CAR | 01     | DRVR    | NONE      | 71       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
|               |           |                          |                                         | 02 NONE    | 0              |                                    | STOP    | PRVTE    | SE NW     | 01     | DRVR    | NONE      | 71       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
| 03957<br>NONE | N N N     | 10/22/2012<br>Mon<br>2P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11       | 1              | PACIFIC HY 99E<br>EB EX PAC HY 99E | INTER   | 3-LEG    | N         | N UNK  | S-1STOP | 01 NONE   | 0        | STRGHT   | 01   | DRVR | NONE  | 00    | F       | OTH-Y<br>N-RES | 026   | 000  | 07    |               |     |     |
|               |           |                          |                                         | 6 0        | PACIFIC HY 99E |                                    | NE      | YIELD    | N WET     | REAR   | PRVTE   | SE NW     |          |          |      |      |       |       |         |                |       |      |       |               |     |     |
|               |           |                          |                                         | 9.43       | 1              |                                    | N DAY   | PDO      | PSNGR CAR | 01     | DRVR    | NONE      | 39       | F        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
|               |           |                          |                                         | 02 NONE    | 0              |                                    | STOP    | PRVTE    | SE NW     | 01     | DRVR    | NONE      | 39       | F        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
| 01366<br>NONE | N N N     | 04/22/2013<br>Mon<br>7P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11       | 1              | PACIFIC HY 99E<br>PACIFIC HY 99E   | INTER   | 3-LEG    | N         | N CLR  | S-1STOP | 01 NONE   | 0        | STRGHT   | 01   | DRVR | NONE  | 42    | M       | OR-Y<br>OR<25  | 026   | 000  | 07    |               |     |     |
|               |           |                          |                                         | 6 0        | PACIFIC HY 99E |                                    | NE      | YIELD    | N DRY     | REAR   | PRVTE   | SE NW     |          |          |      |      |       |       |         |                |       |      |       |               |     |     |
|               |           |                          |                                         | 9.43       | 1              |                                    | N DUSK  | PDO      | PSNGR CAR | 01     | DRVR    | NONE      | 20       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
|               |           |                          |                                         | 02 NONE    | 0              |                                    | STOP    | PRVTE    | SE NW     | 01     | DRVR    | NONE      | 20       | M        |      |      |       |       |         |                |       |      |       | OR-Y<br>OR<25 | 000 | 000 |
| 82215<br>NONE | N N N     | 11/12/2013<br>Tue<br>8A  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11       | 1              | PACIFIC HY 99E<br>EB EX PAC HY 99E | INTER   | 3-LEG    | N         | N RAIN | S-1STOP | 01 NONE   | 0        | STRGHT   | 01   | DRVR | NONE  | 00    | M       | UNK<br>UNK     | 026   | 000  | 07    |               |     |     |
|               |           |                          |                                         | 6 0        | PACIFIC HY 99E |                                    | NE      | YIELD    | N WET     | REAR   | PRVTE   | SE NW     |          |          |      |      |       |       |         |                |       |      |       |               |     |     |
|               |           |                          |                                         | 9.43       | 1              |                                    | 09      | 1        |           | N DAWN | INJ     | PSNGR CAR |          |          |      |      |       |       |         |                |       |      |       |               |     |     |

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

| SER#  | INVEST | P E D<br>E L G H R K<br>D C S L K | DATE<br>DAY<br>TIME      | COUNTY<br>CITY<br>URBAN AREA            | RD#<br>COMPNT<br>MLG MILEPNT | FC<br>CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN<br>LEGS<br>#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RNDBT<br>DRVWY | WTHR<br>SURF<br>LIGHT  | CRASH<br>COLL<br>SVRTY | TYP                           | SPCL USE<br>TRLR QTY<br>OWNER<br>V# | VEH TYPE      | MOVE<br>FROM<br>TO | P# | PRTC<br>TYPE | INJ<br>SVRTY | A<br>G E<br>X         | S<br>E<br>RES | LICNS<br>PED<br>LOC | ERROR   | ACTN | EVENT             | CAUSE          |                |
|-------|--------|-----------------------------------|--------------------------|-----------------------------------------|------------------------------|-----------------------------------------------|----------------------------|---------------------------------------|--------------------------|-------------------------|------------------------|------------------------|-------------------------------|-------------------------------------|---------------|--------------------|----|--------------|--------------|-----------------------|---------------|---------------------|---------|------|-------------------|----------------|----------------|
| 01145 | NONE   | N N N                             | 04/06/2010<br>Tue<br>3P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19<br>6 0<br>9.43          | 1<br>PACIFIC HY 99E<br>EB EX PAC HY 99E       | INTER<br>E<br>06           | 3-LEG<br>1                            | N<br>TRF SIGNAL          | N<br>CLR<br>N DAY       | S-1STOP<br>REAR<br>INJ |                        | 01 NONE<br>PRVTE<br>PSNGR CAR | 0<br>0<br>0                         | STOP<br>SE NW |                    | 01 | DRVR         | INJC         | 65 F<br>OR-Y<br>OR<25 |               |                     | 000     |      | 011<br>000        | 013<br>000     | 00<br>00       |
| 01260 | NONE   | Y N N                             | 04/15/2011<br>Fri<br>12P | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19<br>6 0<br>9.43          | 1<br>PACIFIC HY 99E<br>EB EX PAC HY 99E       | INTER<br>E<br>06           | 3-LEG<br>1                            | N<br>YIELD               | N<br>RAIN<br>N DAY      | S-1STOP<br>REAR<br>INJ |                        | 01 NONE<br>UNKN<br>UNKNOWN    | 0<br>0<br>0                         | STOP<br>E W   |                    | 01 | DRVR         | NONE         | 00 U<br>UNK<br>UNK    |               |                     | 047,026 |      | 013<br>000<br>000 | 01<br>00<br>01 |                |
| 03326 | NO RPT | N N N                             | 09/08/2011<br>Thu<br>11A | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19<br>6 0<br>9.43          | 1<br>PACIFIC HY 99E<br>EB EX PAC HY 99E       | INTER<br>E<br>06           | 3-LEG<br>1                            | N<br>TRF SIGNAL          | N<br>CLR<br>N DAY       | S-1STOP<br>REAR<br>PDO |                        | 01 NONE<br>PRVTE<br>PSNGR CAR | 0<br>0<br>0                         | STOP<br>E W   |                    | 01 | DRVR         | INJC         | 15 F<br>OR-Y<br>OR<25 |               |                     | 000     |      | 022<br>000        | 013<br>000     | 00<br>00       |
| 04032 | NONE   | N N N                             | 10/29/2011<br>Sat<br>10A | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19<br>6 0<br>9.43          | 1<br>PACIFIC HY 99E<br>EB EX PAC HY 99E       | INTER<br>E<br>06           | 3-LEG<br>1                            | N<br>TRF SIGNAL          | N<br>CLR<br>N DAY       | S-1STOP<br>REAR<br>INJ |                        | 01 NONE<br>UNKN<br>PSNGR CAR  | 0<br>0<br>0                         | STOP<br>E W   |                    | 01 | DRVR         | NONE         | 00 F<br>OR-Y<br>UNK   |               |                     | 026     |      | 000<br>000        | 013<br>000     | 07<br>00<br>07 |

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

064 EAST PORTLAND FREEWAY

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

| SER#            | S D<br>P R S W<br>E A U C O DATE<br>E L G H R DAY<br>INVEST D C S L K TIME | COUNTY<br>CITY<br>URBAN AREA                          | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RDNBT SURF<br>DRVMY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE    | MOVE<br>FROM<br>TO | P# | PRTC INJ<br>TYPE SVRTY | A S<br>G E LICNS<br>E X RES | PED<br>LOC | ERROR   | ACTN EVENT | CAUSE                |
|-----------------|----------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|-----------------------------------------|--------------------------------|----------------------------------------------|--------------------|----|------------------------|-----------------------------|------------|---------|------------|----------------------|
|                 |                                                                            |                                                       |                                        |                                         |                            |                                         |                          |                                         |                                | 02 NONE 0 STOP<br>PRVTE E W<br>PSNGR CAR     |                    |    | 01 DRVR INJC           | 53 F OR-Y<br>OR<25          |            | 000     | 012<br>000 | 00<br>00             |
| 02304<br>NONE   | NNN<br>Fri<br>3P                                                           | 06/28/2013<br>CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11 1<br>6 0<br>9.43                  | PACIFIC HY 99E<br>WB EX PAC HY 99E      | INTER<br>E<br>06           | 3-LEG N<br>1                            | TRF SIGNAL               | N UNK<br>N UNK<br>N DAY                 | S-1STOP<br>REAR<br>PDO         | 01 NONE 0 STRGHT<br>PRVTE E W<br>PSNGR CAR   |                    |    | 01 DRVR NONE           | 43 M OR-Y<br>OR>25          |            | 016,026 | 000<br>000 | 27,07<br>00<br>27,07 |
|                 |                                                                            |                                                       |                                        |                                         |                            |                                         |                          |                                         |                                | 02 NONE 0 STOP<br>PRVTE E W<br>PSNGR CAR     |                    |    | 01 DRVR NONE           | 00 M UNK<br>OR<25           |            | 000     | 012<br>000 | 00<br>00             |
| 04751<br>NONE   | NNN<br>Sun<br>5P                                                           | 12/08/2013<br>CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11 1<br>6 0<br>9.43                  | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>E<br>06           | 3-LEG N<br>2                            | TRF SIGNAL               | N CLR<br>N UNK<br>N DUSK                | S-1STOP<br>REAR<br>INJ         | 01 NONE 0 STRGHT<br>PRVTE E W<br>PSNGR CAR   |                    |    | 01 DRVR NONE           | 00 M OR-Y<br>UNK            |            | 026     | 000<br>000 | 07<br>00<br>07       |
|                 |                                                                            |                                                       |                                        |                                         |                            |                                         |                          |                                         |                                | 02 NONE 0 STOP<br>PRVTE E W<br>PSNGR CAR     |                    |    | 01 DRVR INJC           | 39 F OR-Y<br>OR<25          |            | 000     | 012<br>000 | 00<br>00             |
| 03515<br>NONE   | NNN<br>Wed<br>11A                                                          | 09/29/2010<br>CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19 1<br>6 0<br>9.43                  | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>E<br>09           | 3-LEG N<br>1                            | YIELD                    | N CLR<br>N DRY<br>N DAY                 | S-1STOP<br>REAR<br>INJ         | 01 NONE 0 STRGHT<br>PRVTE S N<br>PSNGR CAR   |                    |    | 01 DRVR NONE           | 17 F OR-Y<br>OR<25          |            | 026     | 000<br>000 | 07<br>00<br>07       |
|                 |                                                                            |                                                       |                                        |                                         |                            |                                         |                          |                                         |                                | 02 NONE 0 STOP<br>PRVTE S N<br>PSNGR CAR     |                    |    | 01 DRVR INJC           | 58 F OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00             |
| 01168<br>NONE   | NNN<br>Fri<br>9A                                                           | 04/09/2010<br>CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14 1<br>6 0<br>9.43                  | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>SE<br>06          | 3-LEG N<br>1                            | YIELD                    | N CLR<br>N DRY<br>N DAY                 | S-1STOP<br>REAR<br>INJ         | 01 NONE 0 STRGHT<br>PRVTE SE NW<br>PSNGR CAR |                    |    | 01 DRVR NONE           | 20 M OR-Y<br>OR<25          |            | 026     | 000<br>000 | 07<br>00<br>07       |
|                 |                                                                            |                                                       |                                        |                                         |                            |                                         |                          |                                         |                                | 02 NONE 0 STOP<br>PRVTE SE NW<br>PSNGR CAR   |                    |    | 01 DRVR INJC           | 26 F OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00             |
| 02659<br>NO RPT | NNN<br>Fri<br>9P                                                           | 07/30/2010<br>CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19 1<br>6 0<br>9.43                  | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>S<br>05           | 3-LEG N<br>1                            | TRF SIGNAL               | N CLR<br>N DRY<br>N DLIT                | S-STRGHT<br>SS-O<br>PDO        | 01 NONE 0 TURN-L<br>PRVTE E S<br>PSNGR CAR   |                    |    | 01 DRVR NONE           | 55 M OTH-Y<br>OR<25         |            | 007     | 000<br>000 | 08<br>00<br>08       |
|                 |                                                                            |                                                       |                                        |                                         |                            |                                         |                          |                                         |                                | 02 NONE 0 TURN-L<br>PRVTE E S<br>PSNGR CAR   |                    |    | 01 DRVR NONE           | 41 M OR-Y<br>OR<25          |            | 000     | 000<br>000 | 00<br>00             |

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
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 CONTINUOUS SYSTEM CRASH LISTING

064 EAST PORTLAND FREEWAY

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ranps  
 January 1, 2009 through December 31, 2013

| SER#  | INVEST | S<br>D<br>P<br>R<br>S<br>W<br>E<br>A<br>U<br>C<br>O<br>D<br>A<br>T<br>E<br>C<br>S<br>L<br>K<br>T<br>I<br>M<br>E | DATE       | COUNTY    | CITY        | URBAN AREA  | RD#<br>FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RDNBT<br>DRVMY | WTHR<br>SURF<br>LIGHT   | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>MOVE<br>OWNER<br>FROM<br>TO | P# | TYPE | INJ<br>SVRTY | A<br>S<br>G<br>E<br>LICNS<br>PED<br>E<br>X<br>RES<br>LOC<br>ERROR | ACTN<br>EVENT | CAUSE          |
|-------|--------|-----------------------------------------------------------------------------------------------------------------|------------|-----------|-------------|-------------|-------------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|-------------------------|-------------------------|--------------------------------|-----------------------------------------------------|----|------|--------------|-------------------------------------------------------------------|---------------|----------------|
| 01631 | STATE  | NNNNN                                                                                                           | 05/03/2009 | CLACKAMAS | OREGON CITY | PORTLAND UA | 1 14<br>6 0<br>9.43                       | 1<br>PACIFIC HY 99E<br>EB EX PAC HY 99E | INTER<br>CN<br>02          | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N CLD<br>N WET<br>N DAY | ANGL-OTH<br>TURN<br>PDO | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 STRGHT<br>S N                                     |    |      |              | 18 M<br>OR-Y<br>OR<25                                             | 020<br>000    | 04<br>00<br>04 |
|       |        |                                                                                                                 |            |           |             |             |                                           |                                         |                            |                                         |                          |                         |                         | 02 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-L<br>E S                                     |    |      |              | 27 M<br>OR-Y<br>OR<25                                             | 000<br>000    | 00<br>00       |
| 02254 | NONE   | NNN                                                                                                             | 06/25/2011 | CLACKAMAS | OREGON CITY | PORTLAND UA | 1 19<br>6 0<br>11.81                      | 2<br>PACIFIC HY 99E<br>NB EXT0 I-205 EB | INTER<br>NE<br>05          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY | S-OTHER<br>TURN<br>PDO  | 01 NONE<br>PRVTE<br>MTRCYCLE   | 0 TURN-R<br>S NE                                    |    |      |              | 00 U<br>UNK<br>UNK                                                | 006<br>000    | 08<br>00<br>08 |
|       |        |                                                                                                                 |            |           |             |             |                                           |                                         |                            |                                         |                          |                         |                         | 02 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-R<br>S NE                                    |    |      |              | 49 F<br>OTH-Y<br>N-RES                                            | 000<br>000    | 00<br>00       |

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

[illegible]

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

081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ranps  
January 1, 2009 through December 31, 2013

| SER#  | INVEST    | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE       | COUNTY<br>CITY<br>URBAN AREA | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RND BT<br>DRVWY | CRASH TYP<br>SURF<br>LIGHT SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC INJ<br>TYPE SVRTY | A S<br>G E<br>X RES | LICNS<br>LOC | PED<br>ERROR | ACTN EVENT | CAUSE |
|-------|-----------|-------------------------------------------------------|------------|------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|-------------------------------|----------------------------------|-------------------------------------------|--------------------|----|------------------------|---------------------|--------------|--------------|------------|-------|
| 02378 | N N N     |                                                       | 07/06/2011 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      |                                         | N                        |                               | S-1STOP                          | 01 NONE                                   | 0 STRGHT           |    |                        |                     |              |              |            | 07    |
| NONE  |           |                                                       | Wed        | OREGON CITY                  | 0 0                                    | PACIFIC HY 99E                          | S                          |                                         | TRF SIGNAL               | N DRY                         | REAR                             | PRVTE                                     | S N                |    |                        |                     |              |              | 000        | 00    |
|       |           |                                                       | 2P         | PORTLAND UA                  | 11.81                                  | NB EXT0 I-205 EB                        | 06                         | 1                                       |                          | N DAY                         | PDO                              | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 00 F                | OR-Y UNK     | 026          | 000        | 07    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | 02 NONE                                   | 0 STOP             |    |                        |                     |              |              |            |       |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PRVTE                                     | S N                |    |                        |                     |              |              | 011        | 00    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 43 F                | OR-Y OR<25   | 000          | 000        | 00    |
| 03490 | N N N N N |                                                       | 09/18/2013 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | 3-LEG                                   | N                        |                               | S-1STOP                          | 01 NONE                                   | 0 STRGHT           |    |                        |                     |              |              |            | 07    |
| NONE  |           |                                                       | Wed        | OREGON CITY                  | 0 0                                    | PACIFIC HY 99E                          | S                          |                                         | TRF SIGNAL               | N DRY                         | REAR                             | PRVTE                                     | S N                |    |                        |                     |              |              | 000        | 00    |
|       |           |                                                       | 4P         | PORTLAND UA                  | 11.81                                  | NB EXT0 I-205 EB                        | 06                         | 1                                       |                          | N DAY                         | PDO                              | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 25 F                | NONE OR<25   | 026          | 000        | 07    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | 02 NONE                                   | 0 STOP             |    |                        |                     |              |              |            |       |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PRVTE                                     | S N                |    |                        |                     |              |              | 011        | 00    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 24 F                | OR-Y OR<25   | 000          | 000        | 00    |
| 04363 | N N N N N |                                                       | 11/11/2013 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | 3-LEG                                   | N                        |                               | S-1STOP                          | 01 NONE                                   | 0 STRGHT           |    |                        |                     |              |              |            | 07    |
| STATE |           |                                                       | Mon        | OREGON CITY                  | 0 0                                    | PACIFIC HY 99E                          | S                          |                                         | TRF SIGNAL               | N DRY                         | REAR                             | PRVTE                                     | S N                |    |                        |                     |              |              | 000        | 00    |
|       |           |                                                       | 1P         | PORTLAND UA                  | 11.81                                  | NB EXT0 I-205 EB                        | 06                         | 1                                       |                          | N DAY                         | INJ                              | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 93 M                | OR-Y OR<25   | 043,026      | 000        | 07    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | 02 NONE                                   | 0 STOP             |    |                        |                     |              |              |            |       |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PRVTE                                     | S N                |    |                        |                     |              |              | 011        | 00    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PSNGR CAR                                 |                    | 01 | DRVR INJC              | 57 F                | OR-Y OR>25   | 000          | 000        | 00    |
| 04886 | N N N     |                                                       | 12/17/2013 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | 3-LEG                                   | N                        |                               | S-1STOP                          | 01 NONE                                   | 0 STRGHT           |    |                        |                     |              |              |            | 07    |
| NONE  |           |                                                       | Tue        | OREGON CITY                  | 0 0                                    | PACIFIC HY 99E                          | S                          |                                         | TRF SIGNAL               | N DRY                         | REAR                             | PRVTE                                     | S N                |    |                        |                     |              |              | 000        | 00    |
|       |           |                                                       | 3P         | PORTLAND UA                  | 11.81                                  | NB EXT0 I-205 EB                        | 06                         | 1                                       |                          | N DAY                         | PDO                              | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 35 M                | OR-Y OR<25   | 026          | 000        | 07    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | 02 NONE                                   | STOP               |    |                        |                     |              |              |            |       |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | UNKN                                      | S N                |    |                        |                     |              |              | 011        | 00    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | UNKNOWN                                   |                    | 01 | DRVR NONE              | 00 U                | UNK UNK      | 000          | 000        | 00    |
| 00444 | N N N N N |                                                       | 02/09/2010 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | 3-LEG                                   | N                        |                               | S-1STOP                          | 01 NONE                                   | 0 STRGHT           |    |                        |                     |              |              |            | 22    |
| STATE |           |                                                       | Tue        | OREGON CITY                  | 0 0                                    | PACIFIC HY 99E                          | SW                         |                                         | TRF SIGNAL               | N DRY                         | REAR                             | PRVTE                                     | SW NE              |    |                        |                     |              |              | 000        | 22    |
|       |           |                                                       | 3P         | PORTLAND UA                  | 11.81                                  | NB EXT0 I-205 EB                        | 06                         | 0                                       |                          | N DAY                         | PDO                              | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 40 F                | OR-Y OR<25   | 017          | 000        | 00    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | 02 NONE                                   | 0 STOP             |    |                        |                     |              |              |            |       |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PRVTE                                     | SW NE              |    |                        |                     |              |              | 011        | 00    |
|       |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                               |                                  | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 34 M                | OR-Y OR<25   | 000          | 000        | 00    |
| 00563 | N N N N N |                                                       | 02/12/2012 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | 3-LEG                                   | N                        |                               | ANG-OTH                          | 01 NONE                                   | 0 STRGHT           |    |                        |                     |              |              |            | 04    |
| CITY  |           |                                                       | Sun        | OREGON CITY                  | 0 0                                    | PACIFIC HY 99E                          | CN                         |                                         | TRF SIGNAL               | N WET                         | TURN                             | PRVTE                                     | S N                |    |                        |                     |              |              | 000        | 00    |
|       |           |                                                       | 10P        | PORTLAND UA                  | 11.81                                  | NB EXT0 I-205 EB                        | 02                         | 1                                       |                          | N DLIT                        | PDO                              | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 24 F                | OR-Y OR<25   | 021          | 000        | 04    |

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

| SER#  | P E R S W<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME | COUNTY<br>CITY<br>URBAN AREA            | RD#<br>COMPNT<br>MLG TYP | PC<br>CONN #<br>FIRST STREET<br>MILEPNT | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RND BT<br>DRVWY | WTHR<br>SURF<br>LIGHT | CRASH<br>TYP<br>COLL TYP | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | PRTC<br>P# | INJ<br>SVRTY | A<br>G E<br>X | S<br>E<br>RES | LICNS<br>PED<br>LOC | ERROR         | ACTN       | EVENT      | CAUSE                |
|-------|-------------------------------------|---------------------|-----------------------------------------|--------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|--------------------------|-----------------------|--------------------------|-------------------------------------------|--------------------|------------|--------------|---------------|---------------|---------------------|---------------|------------|------------|----------------------|
| 03521 | N N N N N                           | 09/22/2012          | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.81     | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>CN<br>02          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N<br>N<br>N              | CLR<br>DRY<br>DAY     | ANGL-OTH<br>TURN<br>INJ  | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>E S<br>TURN-L | 01<br>01   | NONE<br>DRVR | NONE<br>NONE  | 56<br>34      | M<br>M              | OR-Y<br>OR-Y  | 000<br>020 | 000<br>000 | 00<br>00<br>04       |
| 02919 | N N N                               | 08/19/2010          | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.81     | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>CN<br>03          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N<br>N<br>N              | CLR<br>DRY<br>DAY     | ANGL-OTH<br>TURN<br>INJ  | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>E S<br>TURN-L | 01<br>01   | DRVR<br>DRVR | NONE<br>INJC  | 49<br>64      | F<br>F              | OR-Y<br>OR-Y  | 016,020    | 000<br>038 | 27,04<br>00<br>27,04 |
| 04167 | N N N                               | 11/05/2011          | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.81     | PACIFIC HY 99E<br>EB EX PAC HY 99E      | INTER<br>CN<br>03          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N<br>N<br>N              | RAIN<br>WET<br>DAWN   | ANGL-OTH<br>TURN<br>PDO  | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>E S<br>TURN-L | 01<br>01   | DRVR<br>DRVR | NONE<br>NONE  | 61<br>61      | F<br>F              | OR-Y<br>OR-Y  | 097        | 000<br>000 | 04<br>00<br>00       |
| 03249 | N N N                               | 09/03/2011          | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.81     | PACIFIC HY 99E<br>NB EXTO I-205 EB      | INTER<br>CN<br>04          | 3-LEG<br>1                              | N<br>L-GRN-SIG           | N<br>N<br>N              | FOG<br>DRY<br>DLIT    | O-1TURN<br>REAR<br>PDO   | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>E<br>TURN-L   | 01<br>01   | DRVR<br>DRVR | NONE<br>NONE  | 62<br>70      | M<br>F              | OTH-Y<br>OR-Y | 000        | 000<br>000 | 04<br>00<br>00       |
| 02698 | N N N N N                           | 07/24/2012          | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.81     | PACIFIC HY 99E<br>NB EXTO I-205 EB      | INTER<br>CN<br>04          | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N<br>N<br>N              | CLR<br>DRY<br>DAY     | S-1STOP<br>REAR<br>PDO   | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>S E<br>TURN-R | 01<br>01   | DRVR<br>DRVR | NONE<br>NONE  | 50<br>47      | F<br>F              | SUSP<br>OR-Y  | 006,052    | 000<br>000 | 08,32<br>00<br>08,32 |

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

081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

| SER#  | INVEST    | S<br>P<br>E<br>L<br>D<br>C<br>S<br>L<br>K | D<br>R<br>S<br>W<br>A<br>U<br>C<br>O<br>DATE | COUNTY<br>CITY<br>URBAN AREA | RD#<br>COMPNT<br>MLG TYP<br>MILEPNT | FC<br>CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RDNBT<br>DRVMY | WTHR<br>SURF<br>LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC<br>TYPE | INJ<br>SVRTY | A<br>G<br>E<br>X | S<br>E<br>RES | LICNS<br>LOC | PED<br>ERROR | ACTN<br>EVENT | CAUSE |
|-------|-----------|-------------------------------------------|----------------------------------------------|------------------------------|-------------------------------------|-----------------------------------------------|----------------------------|-----------------------------------------|--------------------------|-------------------------|-----------------------|--------------------------------|-------------------------------------------|--------------------|----|--------------|--------------|------------------|---------------|--------------|--------------|---------------|-------|
| 03080 | N N N     |                                           | 08/19/2012                                   | CLACKAMAS                    | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        |                         | N CLR                 | O-1TURN                        | 01 NONE                                   | 0 STRGHT           |    |              |              |                  |               |              |              |               | 04    |
| NONE  |           |                                           | Sun                                          | OREGON CITY                  | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N DRY                   | TURN                  |                                | PRVTE                                     | S N                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           | 3P                                           | PORTLAND UA                  | 11.81                               | NB EXT0 I-205 EB                              | 04                         | 1                                       |                          | N DAY                   | PDO                   |                                | PSNGR CAR                                 |                    | 01 | DRVR         | NONE         | 00 F             | OR-Y UNK      |              | 020          | 000           | 04    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | 02 NONE                                   | 0 TURN-L           |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PRVTE                                     | N E                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PSNGR CAR                                 |                    | 01 | DRVR         | NONE         | 29 M             | OR-Y OR<25    |              | 000          | 000           | 00    |
| 04535 | N N N N N |                                           | 11/22/2012                                   | CLACKAMAS                    | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        |                         | N CLR                 | O-1TURN                        | 01 NONE                                   | 0 STRGHT           |    |              |              |                  |               |              |              |               | 04    |
| STATE |           |                                           | Thu                                          | OREGON CITY                  | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N DRY                   | TURN                  |                                | PRVTE                                     | S N                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           | 8P                                           | PORTLAND UA                  | 11.81                               | NB EXT0 I-205 EB                              | 04                         | 1                                       |                          | N DLIT                  | INJ                   |                                | PSNGR CAR                                 |                    | 01 | DRVR         | INJC         | 18 F             | OR-Y OR<25    |              | 020          | 000           | 04    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                |                                           |                    | 02 | PSNG         | NO<5         | 01 M             |               |              | 000          | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | 02 NONE                                   | 0 TURN-L           |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PRVTE                                     | N E                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PSNGR CAR                                 |                    | 01 | DRVR         | NONE         | 42 F             | OR-Y OR<25    |              | 000          | 000           | 00    |
| 04882 | N N N N N |                                           | 12/17/2012                                   | CLACKAMAS                    | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        |                         | N RAIN                | O-1TURN                        | 01 NONE                                   | 0 STRGHT           |    |              |              |                  |               |              |              |               | 04    |
| STATE |           |                                           | Mon                                          | OREGON CITY                  | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | L-GRN-SIG                | N WET                   | TURN                  |                                | PRVTE                                     | S N                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           | 9P                                           | PORTLAND UA                  | 11.81                               | EB EX PAC HY 99E                              | 04                         | 1                                       |                          | N DLIT                  | INJ                   |                                | PSNGR CAR                                 |                    | 01 | DRVR         | INJB         | 53 F             | OR-Y OR<25    |              | 000          | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | 02 NONE                                   | 0 TURN-L           |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PRVTE                                     | N E                |    |              |              |                  |               |              |              | 000           | 04    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PSNGR CAR                                 |                    | 01 | DRVR         | NONE         | 57 M             | OR-Y OR<25    |              | 003          | 000           | 00    |
| 00576 | N N N     |                                           | 02/19/2013                                   | CLACKAMAS                    | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        |                         | N CLR                 | O-1TURN                        | 01 NONE                                   | 0 TURN-L           |    |              |              |                  |               |              |              |               | 02    |
| NONE  |           |                                           | Tue                                          | OREGON CITY                  | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N DRY                   | TURN                  |                                | PRVTE                                     | N E                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           | 9P                                           | PORTLAND UA                  | 11.81                               | EB EX PAC HY 99E                              | 04                         | 1                                       |                          | N DLIT                  | PDO                   |                                | PSNGR CAR                                 |                    | 01 | DRVR         | NONE         | 00 F             | OR-Y OR<25    |              | 028          | 000           | 02    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | 02 NONE                                   | 0 STRGHT           |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PRVTE                                     | S N                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PSNGR CAR                                 |                    | 01 | DRVR         | NONE         | 57 M             | OR-Y OR<25    |              | 000          | 000           | 00    |
| 01632 | N N N N N |                                           | 05/11/2013                                   | CLACKAMAS                    | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        |                         | N CLR                 | O-1TURN                        | 01 NONE                                   | 0 TURN-L           |    |              |              |                  |               |              |              |               | 04    |
| CITY  |           |                                           | Sat                                          | OREGON CITY                  | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N DRY                   | TURN                  |                                | PRVTE                                     | N E                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           | 10P                                          | PORTLAND UA                  | 11.81                               | NB EXT0 I-205 EB                              | 04                         | 1                                       |                          | N DLIT                  | INJ                   |                                | PSNGR CAR                                 |                    | 01 | DRVR         | INJC         | 63 M             | OR-Y OR<25    |              | 000          | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                |                                           |                    | 02 | PSNG         | INJC         | 58 F             |               |              | 000          | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | 02 NONE                                   | 0 STRGHT           |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PRVTE                                     | S N                |    |              |              |                  |               |              |              | 000           | 00    |
|       |           |                                           |                                              |                              |                                     |                                               |                            |                                         |                          |                         |                       |                                | PSNGR CAR                                 |                    | 01 | DRVR         | INJC         | 17 F             | OR-Y OR<25    |              | 020          | 000           | 04    |

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) NB ramps  
January 1, 2009 through December 31, 2013

| SER#   | S D P R S W |      |      |         | COUNTY | RD# FC     |             | INT-TYP |                    |         |          |      |           | SPCL USE |         | A S  |          |     |        | ACTN  | EVENT | CAUSE |      |              |        |      |       |       |
|--------|-------------|------|------|---------|--------|------------|-------------|---------|--------------------|---------|----------|------|-----------|----------|---------|------|----------|-----|--------|-------|-------|-------|------|--------------|--------|------|-------|-------|
|        | E A U C O   |      |      |         |        | COMPNT     | CONN #      | RD CHAR | (MEDIAN)           | INT-REL | OFFRD    | WTHR | CRASH TYP | TLRL QTY | MOVE    | PRTC | INJ      | G E | LICNS  |       |       |       | PED  |              |        |      |       |       |
|        | E L G H R   | DATE | CITY | MLG TYP |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      | FIRST STREET | DIRECT | LEGS | TRAF- | RNDBT |
| INVEST | D           | C    | S    | L       | K      | TIME       | URBAN AREA  | MILEPNT | SECOND STREET      | LOCTN   | (#LANES) | CNTL | DRVWY     | LIGHT    | SVRTY   | V#   | VEH TYPE | TO  | SW NE  | DRVR  | NONE  | 42    | U    | OR-Y         | OR>25  | 026  | 000   | 07    |
| 03651  | N           | N    | N    |         |        | 10/09/2010 | CLACKAMAS   | 1 14    |                    | INTER   | 3-LEG    | N    | N         | CLR      | S-1STOP | 01   | NONE     | 0   | STRGHT |       |       |       |      |              |        |      | 07    |       |
| NONE   |             |      |      |         |        | Sat        | OREGON CITY | 0 0     | PACIFIC HY 99E     | SW      |          | N    | N         | DRY      | REAR    |      |          |     | PRVTE  | SW NE |       |       |      |              |        | 000  | 00    |       |
|        |             |      |      |         |        | 11P        | PORTLAND UA | 11.82   | LEG, EXTO I-205 EB | 06      | 0        |      | N         | DLIT     | INJ     |      |          |     | PSNGR  | CAR   | 01    | DRVR  | NONE |              |        |      | 000   | 07    |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |
|        |             |      |      |         |        |            |             |         |                    |         |          |      |           |          |         |      |          |     |        |       |       |       |      |              |        |      |       |       |

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT  
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ramps  
January 1, 2009 through December 31, 2013

| COLLISION TYPE       | FATAL<br>CRASHES | NON-<br>FATAL<br>CRASHES | PROPERTY<br>DAMAGE<br>ONLY | TOTAL<br>CRASHES | PEOPLE<br>KILLED | PEOPLE<br>INJURED | TRUCKS | DRY<br>SURF | WET<br>SURF | DAY | DARK | INTER-<br>SECTION | INTER-<br>SECTION<br>RELATED | OFF-<br>ROAD |
|----------------------|------------------|--------------------------|----------------------------|------------------|------------------|-------------------|--------|-------------|-------------|-----|------|-------------------|------------------------------|--------------|
| YEAR: 2013           |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| FIXED / OTHER OBJECT | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| REAR-END             | 0                | 0                        | 2                          | 2                | 0                | 0                 | 0      | 0           | 1           | 1   | 1    | 2                 | 0                            | 0            |
| TURNING MOVEMENTS    | 0                | 1                        | 0                          | 1                | 0                | 1                 | 0      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| 2013 TOTAL           | 0                | 1                        | 3                          | 4                | 0                | 1                 | 0      | 2           | 1           | 1   | 3    | 4                 | 0                            | 0            |
| YEAR: 2012           |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| PEDESTRIAN           | 0                | 1                        | 0                          | 1                | 0                | 1                 | 0      | 0           | 1           | 1   | 0    | 1                 | 0                            | 0            |
| REAR-END             | 0                | 2                        | 3                          | 5                | 0                | 2                 | 0      | 2           | 3           | 3   | 2    | 5                 | 0                            | 0            |
| TURNING MOVEMENTS    | 0                | 4                        | 2                          | 6                | 0                | 6                 | 0      | 4           | 2           | 2   | 4    | 6                 | 0                            | 0            |
| 2012 TOTAL           | 0                | 7                        | 5                          | 12               | 0                | 9                 | 0      | 6           | 6           | 6   | 6    | 12                | 0                            | 0            |
| YEAR: 2011           |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END             | 0                | 4                        | 3                          | 7                | 0                | 6                 | 0      | 4           | 3           | 6   | 1    | 7                 | 0                            | 0            |
| TURNING MOVEMENTS    | 0                | 1                        | 2                          | 3                | 0                | 1                 | 0      | 1           | 2           | 2   | 1    | 3                 | 0                            | 0            |
| 2011 TOTAL           | 0                | 5                        | 5                          | 10               | 0                | 7                 | 0      | 5           | 5           | 8   | 2    | 10                | 0                            | 0            |
| YEAR: 2010           |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| MISCELLANEOUS        | 0                | 1                        | 0                          | 1                | 0                | 1                 | 1      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| REAR-END             | 0                | 0                        | 3                          | 3                | 0                | 0                 | 0      | 3           | 0           | 2   | 1    | 3                 | 0                            | 0            |
| TURNING MOVEMENTS    | 0                | 1                        | 2                          | 3                | 0                | 1                 | 0      | 2           | 1           | 3   | 0    | 3                 | 0                            | 0            |
| 2010 TOTAL           | 0                | 2                        | 5                          | 7                | 0                | 2                 | 1      | 6           | 1           | 5   | 2    | 7                 | 0                            | 0            |
| YEAR: 2009           |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END             | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 1   | 0    | 1                 | 0                            | 0            |
| TURNING MOVEMENTS    | 0                | 1                        | 1                          | 2                | 0                | 2                 | 0      | 0           | 2           | 0   | 2    | 2                 | 0                            | 0            |
| 2009 TOTAL           | 0                | 1                        | 2                          | 3                | 0                | 2                 | 0      | 1           | 2           | 1   | 2    | 3                 | 0                            | 0            |
| FINAL TOTAL          | 0                | 16                       | 20                         | 36               | 0                | 21                | 1      | 20          | 15          | 21  | 15   | 36                | 0                            | 0            |

*Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.*

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ramps  
January 1, 2009 through December 31, 2013

| SER#           | S P E A U C O DATE INVEST D C S L K TIME | D R S W | COUNTY CITY URBAN AREA                  | RD# COMPNT MLG TYP MILEPNT | FC | CONN # FIRST STREET SECOND STREET       | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | INT-REL TRAF-CNTL | OFFRD RNDBT SURF DRVWY LIGHT | WTHR SVRTY             | CRASH COLL TYP SVRITY         | SPCL USE TRLR QTY OWNER V# | MOVE FROM TO    | P#                    | PRTC TYPE | INJ SVRITY | A G E X RES | LICNS | PED LOC | ERROR | ACTN | EVENT                | CAUSE |
|----------------|------------------------------------------|---------|-----------------------------------------|----------------------------|----|-----------------------------------------|----------------------|--------------------------------|-------------------|------------------------------|------------------------|-------------------------------|----------------------------|-----------------|-----------------------|-----------|------------|-------------|-------|---------|-------|------|----------------------|-------|
| 02304<br>NONE  | N N N<br>Fri<br>06/28/2013<br>3P         |         | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11<br>6 0<br>9.43        |    | 1<br>PACIFIC HY 99E<br>WB EX PAC HY 99E | INTER<br>E<br>06     | 3-LEG<br><br>1                 | N<br>TRF SIGNAL   | N UNK<br>N UNK<br>N DAY      | S-1STOP<br>REAR<br>PDO | 01 NONE<br>PRVTE<br>PSNGR CAR | 0 STRGHT<br>E W            | 01 DRVR<br>NONE | 43 M<br>OR-Y<br>OR<25 |           | 016,026    | 000<br>000  |       |         |       |      | 27,07<br>00<br>27,07 |       |
|                |                                          |         |                                         |                            |    |                                         |                      |                                |                   |                              |                        | 02 NONE<br>PRVTE<br>PSNGR CAR | 0 STOP<br>E W              | 01 DRVR<br>NONE | 00 M<br>UNK<br>OR<25  |           | 000        | 012<br>000  |       |         |       |      | 00<br>00             |       |
| 00494<br>STATE | Y N N N N<br>Fri<br>02/12/2010<br>6P     |         | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 19<br>6 0<br>9.81        |    | 2<br>PACIFIC HY 99E<br>WB EX PAC HY 99E | INTER<br>N<br>05     | 3-LEG<br><br>1                 | N<br>TRF SIGNAL   | N CLD<br>N DRY<br>N DLIT     | OVERTURN<br>OTH<br>INJ | 01 NONE<br>PRVTE<br>SEMI TOW  | 1 TURN-R<br>E N            | 01 DRVR<br>INJC | 58 M<br>OR-Y<br>OR<25 |           | 047        | 000<br>000  |       |         |       |      | 010<br>010<br>01     |       |
| 01357<br>NONE  | N N N<br>Wed<br>04/15/2009<br>12P        |         | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>6 0<br>9.81        |    | 2<br>PACIFIC HY 99E<br>WB EX PAC HY 99E | INTER<br>E<br>06     | 3-LEG<br><br>0                 | N<br>TRF SIGNAL   | N CLR<br>N DRY<br>N DAY      | S-1STOP<br>REAR<br>PDO | 01 NONE<br>PRVTE<br>PSNGR CAR | 0 STRGHT<br>E W            | 01 DRVR<br>NONE | 60 F<br>OR-Y<br>OR<25 |           | 026        | 000<br>000  |       |         |       |      | 07<br>00<br>07       |       |
|                |                                          |         |                                         |                            |    |                                         |                      |                                |                   |                              |                        | 02 NONE<br>PRVTE<br>PSNGR CAR | 0 STOP<br>E W              | 01 DRVR<br>NONE | 60 F<br>OR-Y<br>OR<25 |           | 000        | 011<br>000  |       |         |       |      | 00<br>00             |       |
| 04289<br>NONE  | N N N<br>Sun<br>11/13/2011<br>11A        |         | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>6 0<br>9.81        |    | 2<br>PACIFIC HY 99E<br>WB EX PAC HY 99E | INTER<br>E<br>06     | 3-LEG<br><br>0                 | N<br>TRF SIGNAL   | N RAIN<br>N WET<br>N DAY     | S-1STOP<br>REAR<br>INJ | 01 NONE<br>PRVTE<br>PSNGR CAR | 0 STRGHT<br>E W            | 01 DRVR<br>NONE | 00 F<br>OR-Y<br>OR<25 |           | 026        | 000<br>000  |       |         |       |      | 07<br>00<br>07       |       |
|                |                                          |         |                                         |                            |    |                                         |                      |                                |                   |                              |                        | 02 NONE<br>PRVTE<br>PSNGR CAR | 0 STOP<br>E W              | 01 DRVR<br>INJC | 17 F<br>OR-Y<br>OR<25 |           | 000        | 011<br>000  |       |         |       |      | 00<br>00             |       |
| 01880<br>CITY  | N N N<br>Tue<br>05/22/2012<br>11A        |         | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11<br>6 0<br>9.81        |    | 2<br>PACIFIC HY 99E<br>WB EX PAC HY 99E | INTER<br>E<br>06     | 3-LEG<br><br>1                 | N<br>TRF SIGNAL   | N RAIN<br>N WET<br>N DAY     | PED<br>PED<br>INJ      | 01 NONE<br>PRVTE<br>PSNGR CAR | 0 TURN-R<br>E N            | 01 DRVR<br>NONE | 47 M<br>OR-Y<br>OR<25 |           | 029        | 000<br>000  |       |         |       |      | 083<br>083<br>02     |       |
|                |                                          |         |                                         |                            |    |                                         |                      |                                |                   |                              |                        |                               | STRGHT<br>N S              | 01 CONV<br>INJB | 51 M                  |           | 01         | 000         | 035   |         |       |      | 00,19                |       |
| 03460<br>NONE  | N N N<br>Mon<br>09/17/2012<br>5P         |         | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 11<br>6 0<br>9.81        |    | 2<br>PACIFIC HY 99E<br>WB EX PAC HY 99E | INTER<br>E<br>06     | 3-LEG<br><br>1                 | N<br>TRF SIGNAL   | N CLR<br>N DRY<br>N DAY      | S-1STOP<br>REAR<br>PDO | 01 NONE<br>PRVTE<br>PSNGR CAR | 0 STRGHT<br>E W            | 01 DRVR<br>NONE | 00 M<br>UNK<br>OR<25  |           | 026        | 000<br>000  |       |         |       |      | 07<br>00<br>07       |       |
|                |                                          |         |                                         |                            |    |                                         |                      |                                |                   |                              |                        | 02 NONE<br>PRVTE<br>PSNGR CAR | 0 STOP<br>E W              | 01 DRVR<br>NONE | 38 F<br>OR-Y<br>OR<25 |           | 000        | 011<br>000  |       |         |       |      | 00<br>00             |       |

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ramps  
January 1, 2009 through December 31, 2013

| SER#   | S D       |   |   | DATE | COUNTY | RD#        | FC          | INT-TYP    |         |              |                |         |          |      | SPCL USE  |          |       | A       | S  | LICNS    | PED   | ERROR  | ACTN | EVENT# | CAUSE |        |        |       |      |      |          |          |       |      |        |          |    |
|--------|-----------|---|---|------|--------|------------|-------------|------------|---------|--------------|----------------|---------|----------|------|-----------|----------|-------|---------|----|----------|-------|--------|------|--------|-------|--------|--------|-------|------|------|----------|----------|-------|------|--------|----------|----|
|        | P R S W   |   |   |      |        |            |             | COMPNT     | CONN #  | RD CHAR      | (MEDIAN)       | INT-REL | OFFRD    | WTHR | CRASH TYP | TRLR QTY | MOVE  |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        | E A U C O |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       | DIRECT | LEGS   | TRAF- | RNDT | SURF | COLL TYP | VEH TYPE | OWNER | FROM |        |          |    |
|        | E L G H R |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
| INVEST | D         | C | S | L    | K      | TIME       | CITY        | URBAN AREA | MLG TYP | FIRST STREET | SECOND STREET  | LOCTN   | (#LANES) | TRF- | RNDT      | DRVWY    | LIGHT | SVRTY   | V# | VEH TYPE | OWNER | FROM   | TO   | P#     | PRTC  | INJ    | SVRVTY | G     | E    | X    | RES      | LOC      | ERROR | ACTN | EVENT# | CAUSE    |    |
| 04205  | N         | N | N |      |        | 11/07/2012 | CLACKAMAS   |            | 1       | 11           | 2              | INTER   | 3-LEG    | N    |           | N        | RAIN  | S-1STOP | 01 | NONE     | 0     | STRGHT |      |        |       |        |        |       |      |      |          |          |       |      |        |          | 07 |
| NONE   |           |   |   |      |        | Wed        | OREGON CITY |            | 6       | 0            | PACIFIC HY 99E | E       |          | TRF  | SIGNAL    | N        | WET   | REAR    |    | PRVTE    | E     | W      |      |        |       |        |        |       |      |      |          |          |       |      | 000    | 00       |    |
|        |           |   |   |      |        | 7A         | PORTLAND UA |            | 9.81    | WB EX        | PAC HY 99E     | 06      | 0        |      |           | N        | DAWN  | PDO     |    | PSNGR    | CAR   |        |      |        | 01    | DRVR   | NONE   | 20    | M    | OR-Y |          | 026      | 000   | 007  |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    | 02       | NONE  | 0      | STOP |        |       |        |        |       |      |      |          |          |       |      | 011    | 00       |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    | PRVTE    | E     | W      |      |        |       | 01     | DRVR   | NONE  | 52   | M    | OR-Y     |          | 000   | 000  | 00     |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    | PSNGR    | CAR   |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
| 01678  | N         | N | N |      |        | 05/07/2012 | CLACKAMAS   |            | 1       | 11           | 2              | INTER   | 3-LEG    | N    |           | N        | CLR   | BIKE    | 01 | NONE     | 0     | TURN-R |      |        |       |        |        |       |      |      |          |          |       |      |        | 18,19,04 |    |
| NONE   |           |   |   |      |        | Mon        | OREGON CITY |            | 6       | 0            | PACIFIC HY 99E | SW      |          | TRF  | SIGNAL    | N        | DRY   | TURN    |    | PRVTE    | E     | N      |      |        |       |        |        |       |      |      |          |          |       |      | 000    | 00       |    |
|        |           |   |   |      |        | 8P         | PORTLAND UA |            | 9.81    | WB EX        | PAC HY 99E     | 06      | 1        |      |           | N        | DLIT  | INJ     |    | PSNGR    | CAR   |        |      |        | 01    | DRVR   | NONE   | 41    | M    | OR-Y |          | 000      | 000   | 00   |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |
|        |           |   |   |      |        |            |             |            |         |              |                |         |          |      |           |          |       |         |    |          |       |        |      |        |       |        |        |       |      |      |          |          |       |      |        |          |    |

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

081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ramps  
January 1, 2009 through December 31, 2013

| SER#            | INVEST    | S<br>D<br>P<br>R<br>S<br>W<br>E<br>A<br>U<br>C<br>O<br>D<br>A<br>T<br>E<br>L<br>G<br>H<br>R<br>D<br>A<br>Y<br>I<br>N<br>V<br>E<br>S<br>T<br>D<br>C<br>S<br>L<br>K<br>T<br>I<br>M<br>E | DATE                                    | COUNTY<br>CITY<br>URBAN AREA | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL  | OFFRD WTHR<br>RDNBT SURF<br>DRVMY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC<br>TYPE | INJ<br>SVRTY          | A S<br>G E<br>X RES | LICNS<br>LOC | PED<br>ERROR | ACTN                 | EVENT          | CAUSE |
|-----------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|---------------------------|-----------------------------------------|--------------------------------|-------------------------------------------|--------------------|----|--------------|-----------------------|---------------------|--------------|--------------|----------------------|----------------|-------|
| 01120<br>STATE  | N N N N N | 03/24/2012<br>Sat<br>5A                                                                                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.62         | PACIFIC HY 99E<br>WB EX PAC HY 99E     | INTER<br>CN<br>04                       | 3-LEG<br>1                 | N<br>L-GRN-SIG                          | N CLD<br>N DRY<br>N DLIT  | O-1TURN<br>TURN<br>INJ                  | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 STRGHT<br>S N                           |                    | 01 | DRVR INJC    | 59 M<br>OR-Y<br>OR<25 |                     | 000<br>000   |              | 04<br>00<br>00       |                |       |
|                 |           |                                                                                                                                                                                       |                                         |                              |                                        |                                         |                            |                                         |                           |                                         | 02 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-L<br>N E                           |                    | 01 | DRVR INJC    | 44 F<br>OR-Y<br>OR<25 |                     | 020<br>000   |              | 00<br>00<br>04       |                |       |
| 00404<br>NO RPT | N N N     | 02/03/2013<br>Sun<br>2A                                                                                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.63         | PACIFIC HY 99E<br>NB EXTO I-205 WB     | INTER<br>N<br>05                        | 3-LEG<br>1                 | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DLIT  | OTH OBJ<br>FIX<br>PDO                   | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-R<br>E N                           |                    | 01 | DRVR NONE    | 56 F<br>OR-Y<br>OR<25 |                     | 000<br>000   | 044<br>044   | 08<br>00<br>08       |                |       |
| 01210<br>STATE  | Y Y N N N | 03/31/2012<br>Sat<br>1A                                                                                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.63         | PACIFIC HY 99E<br>WB EX PAC HY 99E     | INTER<br>N<br>06                        | 3-LEG<br>1                 | N<br>L-TURN REF                         | N UNK<br>N WET<br>N DLIT  | S-1STOP<br>REAR<br>INJ                  | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 STRGHT<br>N S                           |                    | 01 | DRVR NONE    | 64 F<br>OR-Y<br>OR<25 |                     | 000<br>000   |              | 01,07<br>00<br>01,07 |                |       |
|                 |           |                                                                                                                                                                                       |                                         |                              |                                        |                                         |                            |                                         |                           |                                         | 02 NONE<br>PRVTE<br>PSNGR CAR  | 0 STOP<br>N S                             |                    | 01 | DRVR INJC    | 48 F<br>OR-Y<br>OR<25 |                     | 012<br>000   |              | 00<br>00<br>00       |                |       |
| 01007<br>NONE   | N N N     | 03/17/2012<br>Sat<br>1P                                                                                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.63         | PACIFIC HY 99E<br>WB EX PAC HY 99E     | INTER<br>CN<br>01                       | 3-LEG<br>1                 | N<br>TRF SIGNAL                         | N RAIN<br>N WET<br>N DAY  | ANGL-OTH<br>TURN<br>INJ                 | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-L<br>E S                           |                    | 01 | DRVR NONE    | 55 F<br>OR-Y<br>OR<25 |                     | 097<br>000   |              | 04<br>00<br>00       |                |       |
|                 |           |                                                                                                                                                                                       |                                         |                              |                                        |                                         |                            |                                         |                           |                                         |                                |                                           |                    |    | 02           | PSNG INJC             | 43 F                |              | 000<br>000   |                      | 00<br>00<br>00 |       |
|                 |           |                                                                                                                                                                                       |                                         |                              |                                        |                                         |                            |                                         |                           |                                         | 02 NONE<br>PRVTE<br>PSNGR CAR  | 0 STRGHT<br>N S                           |                    | 01 | DRVR NONE    | 52 M<br>OR-Y<br>OR<25 |                     | 000<br>000   |              | 00<br>00<br>00       |                |       |
| 01096<br>NONE   | N N N     | 03/23/2012<br>Fri<br>1P                                                                                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.63         | PACIFIC HY 99E<br>WB EX PAC HY 99E     | INTER<br>CN<br>02                       | 3-LEG<br>1                 | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY   | ANGL-OTH<br>TURN<br>PDO                 | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 STRGHT<br>S N                           |                    | 01 | DRVR NONE    | 45 M<br>OR-Y<br>OR<25 |                     | 000<br>000   |              | 02<br>00<br>00       |                |       |
|                 |           |                                                                                                                                                                                       |                                         |                              |                                        |                                         |                            |                                         |                           |                                         | 02 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-R<br>E N                           |                    | 01 | DRVR NONE    | 91 M<br>OR-Y<br>OR<25 |                     | 015<br>000   |              | 00<br>02<br>02       |                |       |
| 04671<br>NONE   | N N N     | 12/04/2012<br>Tue<br>5P                                                                                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.63         | PACIFIC HY 99E<br>WB EX PAC HY 99E     | INTER<br>CN<br>02                       | 3-LEG<br>1                 | N<br>TRF SIGNAL                         | N RAIN<br>N WET<br>N DLIT | ANGL-OTH<br>TURN<br>PDO                 | 01 NONE<br>PRVTE<br>PSNGR CAR  | 0 TURN-R<br>E N                           |                    | 01 | DRVR NONE    | 67 M<br>OR-Y<br>OR<25 |                     | 000<br>000   |              | 02<br>00<br>02       |                |       |

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ramps  
January 1, 2009 through December 31, 2013

| SER#  | INVEST | P E L D C S K | R A U G H R | DATE DAY TIME | COUNTY CITY AREA   | RD# MLG MILEPNT                   | FC TYP         | CONN # FIRST STREET SECOND STREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | INT-REL TRAF-CNTL | OFFRD RNDBT DRVWY | WTHR SURF LIGHT  | CRASH COLL SVRTY        | TYP SPCL USE TRLR QTY OWNER V# | VEH TYPE     | MOVE FROM TO    | P#  | PRTC TYPE | INJ SVRTY | A G E X | S E LICNS RES | PED LOC | ERROR | ACTN | EVENT | CAUSE |
|-------|--------|---------------|-------------|---------------|--------------------|-----------------------------------|----------------|-----------------------------------|----------------------|--------------------------------|-------------------|-------------------|------------------|-------------------------|--------------------------------|--------------|-----------------|-----|-----------|-----------|---------|---------------|---------|-------|------|-------|-------|
| 01867 | NONE   | N             | N           | N             | 06/05/2010 Sat 2P  | CLACKAMAS OREGON CITY PORTLAND UA | 1 14 0 0 11.64 | PACIFIC HY 99E NB EXTO I-205 WB   | INTER N 06           | 3-LEG 0                        | N TRF SIGNAL      | N CLR N DAY       | S-1STOP REAR PDO | 01 NONE PRVTE PSNGR CAR | 0 STRGHT N S                   | 01 DRVR NONE | 42 F OR-Y OR<25 | 000 | 000       | 00        | 07      | 00            | 07      |       |      |       |       |
| 00210 | NONE   | N             | N           | N             | 01/18/2011 Tue 10A | CLACKAMAS OREGON CITY PORTLAND UA | 1 14 0 0 11.64 | PACIFIC HY 99E WB EX PAC HY 99E   | INTER N 06           | 3-LEG 1                        | N TRF SIGNAL      | N RAIN N DAY      | S-1STOP REAR PDO | 01 NONE UNKN PSNGR CAR  | 0 STRGHT N S                   | 01 DRVR NONE | 00 M UNK UNK    | 026 | 000       | 07        | 00      | 00            | 07      |       |      |       |       |
| 02676 | NO RPT | N             | N           | N             | 07/27/2011 Wed 12P | CLACKAMAS OREGON CITY PORTLAND UA | 1 14 0 0 11.64 | PACIFIC HY 99E WB EX PAC HY 99E   | INTER N 06           | 3-LEG 1                        | N TRF SIGNAL      | N CLR N DAY       | S-1STOP REAR INJ | 01 NONE PRVTE PSNGR CAR | 0 STRGHT N S                   | 01 DRVR NONE | 28 M OR-Y OR<25 | 026 | 000       | 07        | 00      | 00            | 07      |       |      |       |       |
| 03094 | NONE   | N             | N           | N             | 08/24/2011 Wed 9A  | CLACKAMAS OREGON CITY PORTLAND UA | 1 14 0 0 11.64 | PACIFIC HY 99E WB EX PAC HY 99E   | INTER N 06           | 3-LEG 1                        | N TRF SIGNAL      | N CLR N DAY       | S-1STOP REAR INJ | 01 NONE PRVTE PSNGR CAR | 0 STRGHT N S                   | 01 DRVR NONE | 52 F OR-Y OR<25 | 026 | 000       | 07        | 00      | 00            | 07      |       |      |       |       |
| 02247 | NONE   | N             | N           | N             | 06/22/2012 Fri 3P  | CLACKAMAS OREGON CITY PORTLAND UA | 1 14 0 0 11.64 | PACIFIC HY 99E NB EXTO I-205 WB   | INTER N 06           | 3-LEG 1                        | N TRF SIGNAL      | N CLD N DAY       | S-1STOP REAR PDO | 01 NONE PRVTE PSNGR CAR | 0 STRGHT N S                   | 01 DRVR NONE | 55 M OR-Y OR<25 | 026 | 000       | 07        | 00      | 00            | 07      |       |      |       |       |

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

081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ramps  
January 1, 2009 through December 31, 2013

| SER#   | S D<br>P R S W<br>E A U C O<br>E L G H R DAY | DATE       | COUNTY<br>CITY             | RD# FC<br>COMPNT<br>MLG TYP | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(#LANES)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RNDT SURF<br>DRVWY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER                | MOVE<br>FROM<br>TO | P# | TYPE | INJ<br>SVRTY | A S<br>G E<br>X RES | LICNS<br>LOC       | PED<br>ERROR | ACTN       | EVENT | CAUSE                |
|--------|----------------------------------------------|------------|----------------------------|-----------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|----------------------------------------|--------------------------------|----------------------------------------------|--------------------|----|------|--------------|---------------------|--------------------|--------------|------------|-------|----------------------|
| INVEST | D C S L K                                    | TIME       | URBAN AREA                 | MILEPNT                     |                                         |                            |                                         |                          |                                        |                                | V# VEH TYPE                                  |                    |    |      |              |                     |                    |              |            |       |                      |
|        |                                              |            |                            |                             |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE N S<br>PSNGR CAR     |                    |    | 01   | DRVR         | NONE                | 55 M OR-Y<br>OR<25 | 000          | 012<br>000 |       | 00<br>00             |
| 02482  | N N N                                        | 07/16/2010 | CLACKAMAS                  | 1 14                        |                                         | INTER                      | 3-LEG                                   | N                        | N CLR                                  | S-1STOP                        | 01 NONE 0 STRGHT<br>PRVTE SW NE<br>PSNGR CAR |                    |    | 01   | DRVR         | NONE                | 18 M OR-Y<br>OR<25 | 026          | 000        | 004   | 07<br>00<br>07       |
| NO RPT |                                              | Fri<br>1P  | OREGON CITY<br>PORTLAND UA | 0 0<br>11.64                | PACIFIC HY 99E<br>NB EXT0 I-205 WB      | SE<br>09                   | 1                                       | TRF SIGNAL               | N DRY REAR<br>N DAY PDO                |                                |                                              |                    |    |      |              |                     |                    |              |            |       |                      |
|        |                                              |            |                            |                             |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE SW NE<br>PSNGR CAR   |                    |    | 01   | DRVR         | NONE                | 17 F OR-Y<br>OR<25 | 000          | 011<br>000 | 004   | 00<br>00<br>00       |
| 00964  | N N N                                        | 03/23/2010 | CLACKAMAS                  | 1 14                        |                                         | INTER                      | 3-LEG                                   | N                        | N CLR                                  | S-1STOP                        | 01 NONE 0 STRGHT<br>PRVTE S N<br>PSNGR CAR   |                    |    | 01   | DRVR         | NONE                | 00 U UNK<br>UNK    | 026          | 000        |       | 07<br>00<br>07       |
| NONE   |                                              | Tue<br>5A  | OREGON CITY<br>PORTLAND UA | 0 0<br>11.64                | PACIFIC HY 99E<br>WB EX PAC HY 99E      | S<br>06                    | 0                                       | TRF SIGNAL               | N DRY REAR<br>N DAWN PDO               |                                |                                              |                    |    |      |              |                     |                    |              |            |       |                      |
|        |                                              |            |                            |                             |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE S N<br>PSNGR CAR     |                    |    | 01   | DRVR         | NONE                | 29 M OR-Y<br>OR<25 | 000          | 011<br>000 |       | 00<br>00<br>00       |
| 04141  | N N N                                        | 11/04/2011 | CLACKAMAS                  | 1 14                        |                                         | INTER                      | 3-LEG                                   | N                        | N CLD                                  | S-1STOP                        | 01 NONE 0 STRGHT<br>PRVTE S N<br>PSNGR CAR   |                    |    | 01   | DRVR         | NONE                | 90 F OR-Y<br>OR<25 | 026          | 000        |       | 07<br>00<br>07       |
| NO RPT |                                              | Fri<br>9P  | OREGON CITY<br>PORTLAND UA | 0 0<br>11.64                | PACIFIC HY 99E<br>NB EXT0 I-205 WB      | S<br>06                    | 1                                       | TRF SIGNAL               | N WET REAR<br>N DLIT PDO               |                                |                                              |                    |    |      |              |                     |                    |              |            |       |                      |
|        |                                              |            |                            |                             |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE S N<br>PSNGR CAR     |                    |    | 01   | DRVR         | NONE                | 24 M OR-Y<br>OR<25 | 000          | 011<br>000 |       | 00<br>00<br>00       |
| 02606  | N N N                                        | 07/18/2012 | CLACKAMAS                  | 1 14                        |                                         | INTER                      | 3-LEG                                   | N                        | N CLR                                  | S-1STOP                        | 01 NONE 0 STRGHT<br>PRVTE S N<br>PSNGR CAR   |                    |    | 01   | DRVR         | NONE                | 17 M OR-Y<br>OR<25 | 026          | 000        |       | 07<br>00<br>07       |
| NONE   |                                              | Wed<br>2P  | OREGON CITY<br>PORTLAND UA | 0 0<br>11.64                | PACIFIC HY 99E<br>WB EX PAC HY 99E      | S<br>06                    | 0                                       | TRF SIGNAL               | N DRY REAR<br>N DAY INJ                |                                |                                              |                    |    |      |              |                     |                    |              |            |       |                      |
|        |                                              |            |                            |                             |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE S N<br>PSNGR CAR     |                    |    | 01   | DRVR         | INJC                | 43 F OR-Y<br>OR<25 | 000          | 011<br>000 |       | 00<br>00<br>00       |
| 05083  | Y N N N N                                    | 12/30/2013 | CLACKAMAS                  | 1 14                        |                                         | INTER                      | 3-LEG                                   | N                        | N CLD                                  | S-1STOP                        | 01 NONE 0 STRGHT<br>PRVTE S N<br>PSNGR CAR   |                    |    | 01   | DRVR         | NONE                | 51 F OR-Y<br>OR<25 | 043,026,047  | 000        |       | 07,01<br>00<br>07,01 |
| STATE  |                                              | Mon<br>7P  | OREGON CITY<br>PORTLAND UA | 0 0<br>11.64                | PACIFIC HY 99E<br>NB EXT0 I-205 WB      | S<br>06                    | 0                                       | TRF SIGNAL               | N WET REAR<br>N DARK PDO               |                                |                                              |                    |    |      |              |                     |                    |              |            |       |                      |
|        |                                              |            |                            |                             |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE S N<br>PSNGR CAR     |                    |    | 01   | DRVR         | NONE                | 50 M OR-Y<br>OR<25 | 000          | 011<br>000 |       | 00<br>00<br>00       |

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081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ranps  
January 1, 2009 through December 31, 2013

| SER#  | INVEST    | S<br>D<br>P<br>R<br>S<br>W<br>E<br>A<br>U<br>C<br>O<br>DATE | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | RD#<br>COMPNT<br>MLG TYP<br>MILEPNT | FC<br>CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RND BT<br>DRVWY | WTHR<br>SURF<br>LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P#     | TYPE   | INJ<br>SVRTY | A<br>S<br>G<br>E<br>LICNS<br>E<br>X<br>RES | PED<br>LOC<br>ERROR | ACTN    | EVENT | CAUSE |
|-------|-----------|-------------------------------------------------------------|-----------------------------------------|-------------------------------------|-----------------------------------------------|----------------------------|-----------------------------------------|--------------------------|--------------------------|-----------------------|--------------------------------|-------------------------------------------|--------------------|--------|--------|--------------|--------------------------------------------|---------------------|---------|-------|-------|
| 01484 | N N N     | 05/05/2010                                                  | CLACKAMAS                               | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        | N CLD                    | ANGL-OTH              | 01                             | NONE                                      | 0                  | STRGHT |        |              |                                            |                     |         |       | 02    |
| NONE  |           | Wed                                                         | OREGON CITY                             | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N WET                    | TURN                  |                                | PRVTE                                     | S N                |        |        |              |                                            |                     |         | 00    |       |
|       |           | 8A                                                          | PORTLAND UA                             | 11.64                               | WB EX PAC HY 99E                              | 02                         | 1                                       |                          | N DAY                    | PDO                   |                                | PSNGR CAR                                 |                    | 01     | DRVR   | NONE         | 45 M                                       | OR-Y<br>OR<25       | 000     | 000   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | 02                                        | NONE               | 0      | TURN-R |              |                                            |                     |         |       |       |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PRVTE                                     | E N                | 01     | DRVR   | NONE         | 68 M                                       | OR-Y<br>OR<25       | 000     | 016   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | OTH BUS                                   |                    |        |        |              |                                            |                     | 000     | 000   | 00    |
| 00130 | N N N     | 01/07/2009                                                  | CLACKAMAS                               | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        | N RAIN                   | S-OTHER               | 01                             | NONE                                      | 0                  | TURN-L |        |              |                                            |                     |         |       | 07    |
| STATE |           | Wed                                                         | OREGON CITY                             | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N WET                    | TURN                  |                                | PRVTE                                     | E S                |        |        |              |                                            |                     |         | 00    |       |
|       |           | 8P                                                          | PORTLAND UA                             | 11.64                               | WB EX PAC HY 99E                              | 03                         | 1                                       |                          | N DLIT                   | PDO                   |                                | PSNGR CAR                                 |                    | 01     | DRVR   | NONE         | 47 M                                       | OR-Y<br>OR<25       | 042     | 000   | 07    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | 02                                        | NONE               | 0      | TURN-L |              |                                            |                     |         |       |       |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PRVTE                                     | E S                | 01     | DRVR   | NONE         | 54 M                                       | OR-Y<br>OR<25       | 000     | 006   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PSNGR CAR                                 |                    |        |        |              |                                            |                     | 000     | 000   | 00    |
| 00550 | N N N     | 02/16/2010                                                  | CLACKAMAS                               | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        | N CLD                    | ANGL-OTH              | 01                             | NONE                                      | 0                  | TURN-L |        |              |                                            |                     |         |       | 32,04 |
| STATE |           | Tue                                                         | OREGON CITY                             | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N DRY                    | TURN                  |                                | PRVTE                                     | E S                |        |        |              |                                            |                     |         | 00    |       |
|       |           | 11A                                                         | PORTLAND UA                             | 11.64                               | WB EX PAC HY 99E                              | 03                         | 1                                       |                          | N DAY                    | PDO                   |                                | PSNGR CAR                                 |                    | 01     | DRVR   | NONE         | 62 M                                       | OR-Y<br>OR<25       | 000     | 000   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | 02                                        | NONE               | 0      | STRGHT |              |                                            |                     |         |       |       |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PRVTE                                     | N S                | 01     | DRVR   | NONE         | 68 F                                       | OR-Y<br>OR<25       | 052,020 | 000   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PSNGR CAR                                 |                    |        |        |              |                                            |                     | 000     | 000   | 32,04 |
| 00891 | N N N     | 03/15/2011                                                  | CLACKAMAS                               | 1 14                                |                                               | INTER                      | 3-LEG                                   | N                        | N RAIN                   | ANGL-OTH              | 01                             | NONE                                      | 0                  | STRGHT |        |              |                                            |                     |         |       | 04    |
| NONE  |           | Tue                                                         | OREGON CITY                             | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N WET                    | TURN                  |                                | PRVTE                                     | N S                |        |        |              |                                            |                     |         | 00    |       |
|       |           | 1P                                                          | PORTLAND UA                             | 11.64                               | WB EX PAC HY 99E                              | 03                         | 1                                       |                          | N DAY                    | PDO                   |                                | PSNGR CAR                                 |                    | 01     | DRVR   | NONE         | 28 M                                       | OR-Y<br>OR<25       | 020     | 000   | 04    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | 02                                        | NONE               | 0      | TURN-L |              |                                            |                     |         |       |       |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PRVTE                                     | E S                | 01     | DRVR   | NONE         | 21 F                                       | OR-Y<br>OR<25       | 000     | 000   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PSNGR CAR                                 |                    | 02     | PSNG   | NO<5         | 01 M                                       |                     | 000     | 000   | 00    |
| 01544 | N N N N N | 04/27/2009                                                  | CLACKAMAS                               | 3 14                                |                                               | INTER                      | 3-LEG                                   | N                        | N RAIN                   | O-1TURN               | 01                             | NONE                                      | 0                  | STRGHT |        |              |                                            |                     |         |       | 02    |
| STATE |           | Mon                                                         | OREGON CITY                             | 0 0                                 | PACIFIC HY 99E                                | CN                         |                                         | TRF SIGNAL               | N WET                    | TURN                  |                                | PRVTE                                     | S N                |        |        |              |                                            |                     |         | 00    |       |
|       |           | 10P                                                         | PORTLAND UA                             | 11.64                               | NB EXT0 I-205 WB                              | 04                         | 1                                       |                          | N DARK                   | INJ                   |                                | PSNGR CAR                                 |                    | 01     | DRVR   | INJC         | 42 F                                       | OR-Y<br>OR<25       | 028     | 000   | 02    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | 02                                        | NONE               | 0      | TURN-L |              |                                            |                     |         |       |       |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PRVTE                                     | N E                | 01     | DRVR   | INJB         | 19 F                                       | OR-Y<br>OR<25       | 000     | 000   | 00    |
|       |           |                                                             |                                         |                                     |                                               |                            |                                         |                          |                          |                       |                                | PSNGR CAR                                 |                    |        |        |              |                                            |                     | 000     | 000   | 00    |

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

081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ranps  
January 1, 2009 through December 31, 2013

| SER#  | INVEST | S<br>D<br>P<br>R<br>S<br>W<br>E<br>A<br>U<br>C<br>O<br>DATE<br>E<br>L<br>G<br>H<br>R<br>DAY<br>D<br>C<br>S<br>L<br>K<br>TIME | COUNTY<br>CITY<br>URBAN AREA            | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RND BT SURF<br>DRVWY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P#           | PRTC INJ<br>TYPE SVRTY | A S<br>G E<br>X RES   | LICNS<br>LOC | PED<br>ERROR | ACTN EVENT | CAUSE                |
|-------|--------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|------------------------------------------|--------------------------------|-------------------------------------------|--------------------|--------------|------------------------|-----------------------|--------------|--------------|------------|----------------------|
| 00087 | STATE  | NNNNY 01/09/2010<br>Sat<br>12P                                                                                               | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.64                   | PACIFIC HY 99E<br>NB EXT0 I-205 WB      | INTER<br>CN<br>04          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N CLD<br>N DRY<br>N DAY                  | O-1TURN<br>TURN<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>S N    |              | 01 DRVR NONE           | 73 M<br>OR-Y<br>OR<25 |              | 052,020      | 000<br>000 | 32,04<br>00<br>32,04 |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 TURN-L<br>N E    | 01 DRVR INJC | 32 M<br>OR-Y<br>OR<25  |                       | 000<br>000   |              | 000<br>000 | 00<br>00             |
| 00848 | NONE   | NNN 03/10/2011<br>Thu<br>8P                                                                                                  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.64                   | PACIFIC HY 99E<br>NB EXT0 I-205 WB      | INTER<br>CN<br>04          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N RAIN<br>N WET<br>N DUSK                | O-1TURN<br>TURN<br>PDO         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>S N    | 01 DRVR NONE | 00 M<br>UNK<br>OR<25   |                       | 000<br>000   |              | 000<br>000 | 02<br>00<br>00       |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 TURN-L<br>N E    | 01 DRVR NONE | 57 F<br>OR-Y<br>OR<25  |                       | 000<br>000   | 028,004      | 000<br>000 | 00<br>02             |
| 00905 | STATE  | NNNNN 03/14/2011<br>Mon<br>4P                                                                                                | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.64                   | PACIFIC HY 99E<br>WB EX PAC HY 99E      | INTER<br>CN<br>04          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N CLD<br>N DRY<br>N DAY                  | S-1STOP<br>REAR<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>S N    | 01 DRVR INJC | 54 F<br>SUSP<br>OR<25  |                       | 000<br>000   |              | 000<br>000 | 07<br>00<br>07       |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>S N      | 01 DRVR INJC | 58 F<br>OR-Y<br>OR<25  |                       | 000<br>000   |              | 011<br>000 | 00<br>00             |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    | 02 PSNG INJC | 33 M                   |                       | 000          | 000          | 00         |                      |
| 03084 | STATE  | NNNNN 08/23/2011<br>Tue<br>8A                                                                                                | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.64                   | PACIFIC HY 99E<br>NB EXT0 I-205 WB      | INTER<br>CN<br>04          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N CLD<br>N DRY<br>N DAY                  | O-1TURN<br>TURN<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 TURN-L<br>N E    | 01 DRVR NONE | 54 F<br>OR-Y<br>OR<25  |                       | 000<br>000   |              | 000<br>000 | 04<br>00<br>00       |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>S N    | 01 DRVR INJA | 52 F<br>OR-Y<br>OR<25  |                       | 000<br>028   |              | 000<br>04  | 00<br>04             |
| 03764 | CITY   | NNN 10/10/2012<br>Wed<br>4A                                                                                                  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>11.64                   | PACIFIC HY 99E<br>WB EX PAC HY 99E      | INTER<br>CN<br>04          | 3-LEG<br>1                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DLIT                 | O-1TURN<br>TURN<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>S N    | 01 DRVR NONE | 52 M<br>OR-Y<br>OR<25  |                       | 097<br>000   |              | 000<br>000 | 04<br>00<br>00       |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    | 02 PSNG INJC | 35 M                   |                       | 000          | 000          | 00         |                      |
|       |        |                                                                                                                              |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 TURN-L<br>N E    | 01 DRVR INJC | 49 M<br>OR-Y<br>OR<25  |                       | 097<br>000   |              | 000<br>000 | 00<br>00             |

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

081 PACIFIC HIGHWAY EAST

McLoughlin Blvd OR 99E (Hwy 081) & I-205 (Hwy 064) SB ranps  
 January 1, 2009 through December 31, 2013

| SER#  | INVEST | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE       | COUNTY      | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RND BT SURF<br>DRVWY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | TYPE | INJ<br>SVRTY | A S<br>G E<br>X RES | LICNS<br>LOC | PED<br>ERROR | ACTN | EVENT | CAUSE |
|-------|--------|-------------------------------------------------------|------------|-------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|------------------------------------------|--------------------------------|-------------------------------------------|--------------------|----|------|--------------|---------------------|--------------|--------------|------|-------|-------|
| 03065 | STATE  | N N N N N                                             | 08/19/2013 | CLACKAMAS   | 1 14                                   |                                         | INTER                      | 3-LEG                                   | N                        | N CLR                                    | O-1TURN                        | 01 NONE                                   | 0 STRGHT           |    |      |              |                     |              |              |      |       | 27,04 |
|       |        | Mon                                                   |            | OREGON CITY | 0 0                                    | PACIFIC HY 99E                          | CN                         |                                         | TRF SIGNAL               | N DRY                                    | TURN                           | PRVTE                                     | S N                |    |      |              |                     |              |              | 000  |       | 00    |
|       |        | 9P                                                    |            | PORTLAND UA | 11.64                                  | NB EXT I-205 WB                         | 04                         | 1                                       |                          | N DLIT                                   | INJ                            | PSNGR CAR                                 |                    | 01 | DRVR | INJB         | 19 F                | OR-Y         | 016,020      | 038  |       | 27,04 |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    |    |      |              | OR<25               |              |              |      |       |       |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE                                   | 0 TURN-L           |    |      |              |                     |              |              |      |       |       |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | N E                |    |      |              |                     |              |              | 000  |       | 00    |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR | NONE         | 26 M                | OR-Y         | 000          | 000  |       | 00    |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    |    |      |              | OR<25               |              |              |      |       |       |
| 01852 | NONE   | N N N                                                 | 05/27/2011 | CLACKAMAS   | 1 19                                   | 1                                       | INTER                      | 3-LEG                                   | N                        | N CLR                                    | S-1STOP                        | 01 NONE                                   | 0 TURN-R           |    |      |              |                     |              |              |      |       | 07    |
|       |        | Fri                                                   |            | OREGON CITY | 6 0                                    | PACIFIC HY 99E                          | SE                         |                                         | YIELD                    | N DRY                                    | REAR                           | PRVTE                                     | S E                |    |      |              |                     |              |              | 000  |       | 00    |
|       |        | 7A                                                    |            | PORTLAND UA | 11.64                                  | NB EXT I-205 WB                         | 09                         | 1                                       |                          | N DAY                                    | PDO                            | PSNGR CAR                                 |                    | 01 | DRVR | NONE         | 48 F                | OR-Y         | 026          | 000  |       | 07    |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    |    |      |              | OR<25               |              |              |      |       |       |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE                                   | 0 STOP             |    |      |              |                     |              |              |      |       |       |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | S E                |    |      |              |                     |              |              | 011  |       | 00    |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR | NONE         | 31 M                | OR-Y         | 000          | 000  |       | 00    |
|       |        |                                                       |            |             |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    |    |      |              | OR<25               |              |              |      |       |       |

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT  
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE  
 OR 213 Cascade Highway (Hwy 160) & Redland Road  
 January 1, 2009 through December 31, 2013

| COLLISION TYPE         | FATAL<br>CRASHES | NON-<br>FATAL<br>CRASHES | PROPERTY<br>DAMAGE<br>ONLY | TOTAL<br>CRASHES | PEOPLE<br>KILLED | PEOPLE<br>INJURED | TRUCKS | DRY<br>SURF | WET<br>SURF | DAY | DARK | INTER-<br>SECTION | INTER-<br>SECTION<br>RELATED | OFF-<br>ROAD |
|------------------------|------------------|--------------------------|----------------------------|------------------|------------------|-------------------|--------|-------------|-------------|-----|------|-------------------|------------------------------|--------------|
| YEAR: 2013             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 7                        | 2                          | 9                | 0                | 8                 | 0      | 6           | 2           | 8   | 1    | 9                 | 0                            | 0            |
| SIDESWIPE - OVERTAKING | 0                | 0                        | 1                          | 1                | 0                | 0                 | 2      | 0           | 1           | 0   | 1    | 1                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 1                        | 0                          | 1                | 0                | 1                 | 0      | 0           | 1           | 1   | 0    | 1                 | 0                            | 0            |
| 2013 TOTAL             | 0                | 8                        | 3                          | 11               | 0                | 9                 | 2      | 6           | 4           | 9   | 2    | 11                | 0                            | 0            |
| YEAR: 2012             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 2                        | 1                          | 3                | 0                | 5                 | 0      | 2           | 0           | 3   | 0    | 3                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| 2012 TOTAL             | 0                | 2                        | 2                          | 4                | 0                | 5                 | 0      | 3           | 0           | 3   | 1    | 4                 | 0                            | 0            |
| YEAR: 2011             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 3                        | 0                          | 3                | 0                | 4                 | 0      | 2           | 1           | 3   | 0    | 3                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 2                        | 0                          | 2                | 0                | 3                 | 0      | 1           | 1           | 2   | 0    | 2                 | 0                            | 0            |
| 2011 TOTAL             | 0                | 5                        | 0                          | 5                | 0                | 7                 | 0      | 3           | 2           | 5   | 0    | 5                 | 0                            | 0            |
| YEAR: 2010             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 1                        | 0                          | 1                | 0                | 2                 | 1      | 1           | 0           | 1   | 0    | 1                 | 0                            | 0            |
| 2010 TOTAL             | 0                | 1                        | 1                          | 2                | 0                | 2                 | 1      | 2           | 0           | 1   | 1    | 2                 | 0                            | 0            |
| FINAL TOTAL            | 0                | 16                       | 6                          | 22               | 0                | 23                | 3      | 14          | 6           | 18  | 4    | 22                | 0                            | 0            |

*Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.*

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Redland Road  
January 1, 2009 through December 31, 2013

| SER#            | S<br>D<br>P<br>R<br>S<br>W<br>E<br>A<br>U<br>C<br>O<br>D<br>A<br>T<br>E<br>E<br>L<br>G<br>H<br>R<br>D<br>A<br>Y<br>I<br>N<br>V<br>E<br>S<br>T<br>D<br>C<br>S<br>L<br>K<br>T<br>I<br>M<br>E | DATE                     | COUNTY<br>CITY<br>URBAN AREA            | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RND BT<br>DRVWY | WTHR<br>SURF<br>LIGHT  | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC<br>TYPE | INJ<br>SVRTY | A S<br>G E<br>X RES   | LICNS<br>LOC | PED<br>ERROR | ACTN<br>EVENT | CAUSE                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|--------------------------|------------------------|--------------------------------|-------------------------------------------|--------------------|----|--------------|--------------|-----------------------|--------------|--------------|---------------|----------------------|
| 00563<br>NONE   | N N N                                                                                                                                                                                      | 02/17/2010<br>Wed<br>6P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.48                    | CASCADE HY SOUTH<br>REDLAND RD          | INTER<br>N<br>06           | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DARK | S-1STOP<br>REAR<br>PDO | 01<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STRGHT<br>N S      |    | 01           | DRVR<br>NONE | 27 M<br>OR-Y<br>OR-?  | 026          |              | 000<br>000    | 07<br>00<br>07       |
|                 |                                                                                                                                                                                            |                          |                                         |                                        |                                         |                            |                                         |                          |                          |                        | 02<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STOP<br>N S        |    | 01           | DRVR<br>NONE | 31 F<br>OR-Y<br>OR<25 | 000          |              | 011<br>000    | 00<br>00             |
| 02101<br>CITY   | Y Y N                                                                                                                                                                                      | 06/12/2011<br>Sun<br>11A | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.48                    | CASCADE HY SOUTH<br>REDLAND RD          | INTER<br>N<br>06           | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY  | S-1STOP<br>REAR<br>INJ | 01<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STRGHT<br>N S      |    | 01           | DRVR<br>NONE | 38 M<br>OR-Y<br>OR<25 | 047,043,026  | 000          | 011<br>000    | 01,07<br>00<br>01,07 |
|                 |                                                                                                                                                                                            |                          |                                         |                                        |                                         |                            |                                         |                          |                          |                        | 02<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STOP<br>N S        |    | 01           | DRVR<br>INJC | 41 F<br>OR-Y<br>OR<25 | 000          |              | 011<br>000    | 00<br>00             |
|                 |                                                                                                                                                                                            |                          |                                         |                                        |                                         |                            |                                         |                          |                          |                        |                                |                                           |                    | 02 | PSNG         | INJC         | 56 F                  | 000          | 000          | 00            |                      |
| 01593<br>NO RPT | N N N                                                                                                                                                                                      | 05/08/2013<br>Wed<br>12P | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.48                    | CASCADE HY SOUTH<br>REDLAND RD          | INTER<br>N<br>06           | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY  | S-1STOP<br>REAR<br>INJ | 01<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STRGHT<br>N S      |    | 01           | DRVR<br>NONE | 27 F<br>OR-Y<br>OR<25 | 016,026      | 000          | 011<br>000    | 27,07<br>00<br>27,07 |
|                 |                                                                                                                                                                                            |                          |                                         |                                        |                                         |                            |                                         |                          |                          |                        | 02<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STOP<br>N S        |    | 01           | DRVR<br>INJC | 63 F<br>OR-Y<br>OR<25 | 000          |              | 011<br>000    | 00<br>00             |
| 04034<br>CITY   | Y N N                                                                                                                                                                                      | 10/22/2013<br>Tue<br>8P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.48                    | CASCADE HY SOUTH<br>REDLAND RD          | INTER<br>N<br>06           | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DLIT | S-1STOP<br>REAR<br>INJ | 01<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STRGHT<br>N S      |    | 01           | DRVR<br>INJC | 57 F<br>OR-Y<br>OR<25 | 047,043,026  | 000          | 011<br>000    | 01,07<br>00<br>01,07 |
|                 |                                                                                                                                                                                            |                          |                                         |                                        |                                         |                            |                                         |                          |                          |                        | 02<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STOP<br>N S        |    | 01           | DRVR<br>NONE | 16 M<br>OR-Y<br>OR<25 | 000          |              | 011<br>000    | 00<br>00             |
| 00947<br>NO RPT | N N N                                                                                                                                                                                      | 03/17/2011<br>Thu<br>2P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.48                    | CASCADE HY SOUTH<br>REDLAND RD          | INTER<br>S<br>06           | 3-LEG<br>0                              | N<br>TRF SIGNAL          | N RAIN<br>N WET<br>N DAY | S-1STOP<br>REAR<br>INJ | 01<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STRGHT<br>S N      |    | 01           | DRVR<br>NONE | 74 F<br>OR-Y<br>OR<25 | 026          |              | 000<br>000    | 07<br>00<br>07       |
|                 |                                                                                                                                                                                            |                          |                                         |                                        |                                         |                            |                                         |                          |                          |                        | 02<br>PRVTE<br>PSNGR CAR       | NONE<br>0<br>0                            | STOP<br>S N        |    | 01           | DRVR<br>INJC | 46 M<br>OR-Y<br>OR<25 | 000          |              | 011<br>000    | 00<br>00             |

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Redland Road  
January 1, 2009 through December 31, 2013

| SER#           | S D       |            |             | DATE    | COUNTY           | RD# FC | CONN #   | INT-TYP    |         |              | SPCL USE |           |          | MOVE   | PRTC INJ | A S       |                 |                 | PED | ACTN    | EVENT | CAUSE |       |       |          |       |
|----------------|-----------|------------|-------------|---------|------------------|--------|----------|------------|---------|--------------|----------|-----------|----------|--------|----------|-----------|-----------------|-----------------|-----|---------|-------|-------|-------|-------|----------|-------|
|                | P         | R          | S           |         |                  |        |          | W          | RD CHAR | (MEDIAN)     | INT-REL  | OFFRD     | WTHR     |        |          | CRASH TYP | TLRL            | QTY             |     |         |       |       | OWNER | G     | E        | LICNS |
|                | E A U C O | E L G H R  | DAY         |         |                  |        |          | CITY       | MLG TYP | FIRST STREET | DIRECT   | LEGS      | TRAF-    |        |          | RND BT    | SURF            | COLL TYP        |     |         |       |       | SVRTY | V#    | VEH TYPE | TO    |
| INVEST         | D C S L K | TIME       | URBAN AREA  | MILEPNT | SECOND STREET    | LOCTN  | (#LANES) | CNTL       | DRVWY   | LIGHT        | SVRTY    | V#        | VEH TYPE | TO     | P#       | TYPE      | SVRTY           | E X             | RES | LOC     | ERROR | ACTN  | EVENT | CAUSE |          |       |
| 02552<br>STATE | N N N N Y | 07/18/2011 | CLACKAMAS   | 1 14    |                  | INTER  | 3-LEG    | N          |         | N CLR        | S-1STOP  | 01 NONE   | 0        | STRGHT |          |           |                 |                 |     |         |       | 013   | 07    |       |          |       |
|                |           | Mon        | OREGON CITY | 0 0     | CASCADE HY SOUTH | S      |          | TRF SIGNAL | N DRY   | REAR         |          | PRVTE     | S N      |        |          |           |                 |                 |     |         | 000   | 00    |       |       |          |       |
|                |           | 6A         | PORTLAND UA | 0.48    | REDLAND RD       | 06     | 0        |            | N DAY   | INJ          |          | PSNGR CAR |          |        | 01       | DRVR      | NONE            | 16 M OR-Y OR<25 |     | 043,026 | 000   | 07    |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | 02 NONE   | 0        | STOP   |          |           |                 |                 |     |         |       | 011   | 013   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PRVTE     | S N      |        |          |           |                 |                 |     |         |       | 000   | 000   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PSNGR CAR |          |        |          |           |                 |                 |     |         |       |       |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | 03 NONE   | 0        | STOP   |          |           |                 |                 |     |         |       |       | 022   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PRVTE     | S N      |        |          |           |                 |                 |     |         |       | 000   | 000   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PSNGR CAR |          |        |          |           |                 |                 |     |         |       |       |       |       |          |       |
| 04021<br>NONE  | N N N     | 10/26/2012 | CLACKAMAS   | 1 14    |                  | INTER  | 3-LEG    | N          |         | N CLR        | S-1STOP  | 01 NONE   | 0        | STRGHT |          |           |                 |                 |     |         |       |       | 07    |       |          |       |
|                |           | Fri        | OREGON CITY | 0 0     | CASCADE HY SOUTH | S      |          | TRF SIGNAL | N DRY   | REAR         |          | PRVTE     | S N      |        |          |           |                 |                 |     |         | 000   | 00    |       |       |          |       |
|                |           | 5P         | PORTLAND UA | 0.48    | REDLAND RD       | 06     | 0        |            | N DAY   | PDO          |          | PSNGR CAR |          |        | 01       | DRVR      | NONE            | 41 M OR-Y OR<25 |     | 026     | 000   | 07    |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | 02 NONE   | 0        | STOP   |          |           |                 |                 |     |         |       |       | 011   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | UNKN      | S N      |        |          |           |                 |                 |     |         |       | 000   | 000   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | UNKNOWN   |          |        |          |           |                 |                 |     |         |       |       |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          |           |          | 01     | DRVR     | NONE      | 00 U UNK UNK    |                 | 000 |         |       |       |       |       |          |       |
| 00947<br>NONE  | N N N     | 03/19/2013 | CLACKAMAS   | 1 14    |                  | INTER  | 3-LEG    | N          |         | N RAIN       | S-1STOP  | 01 NONE   | 0        | STRGHT |          |           |                 |                 |     |         |       |       | 07    |       |          |       |
|                |           | Tue        | OREGON CITY | 0 0     | CASCADE HY SOUTH | S      |          | TRF SIGNAL | N WET   | REAR         |          | UNKN      | S N      |        |          |           |                 |                 |     |         | 000   | 00    |       |       |          |       |
|                |           | 1P         | PORTLAND UA | 0.48    | REDLAND RD       | 06     | 0        |            | N DAY   | PDO          |          | PSNGR CAR |          |        | 01       | DRVR      | NONE            | 00 M OR-Y UNK   |     | 026     | 000   | 07    |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | 02 NONE   | 0        | STOP   |          |           |                 |                 |     |         |       |       | 011   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PRVTE     | S N      |        |          |           |                 |                 |     |         |       | 000   | 000   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PSNGR CAR |          |        |          |           |                 |                 |     |         |       |       |       |       |          |       |
| 02451<br>CITY  | N N N N N | 07/09/2013 | CLACKAMAS   | 1 14    |                  | INTER  | 3-LEG    | N          |         | N CLR        | S-1STOP  | 01 NONE   | 0        | STRGHT |          |           |                 |                 |     |         |       |       | 013   | 27,07 |          |       |
|                |           | Tue        | OREGON CITY | 0 0     | CASCADE HY SOUTH | S      |          | TRF SIGNAL | N DRY   | REAR         |          | PRVTE     | S N      |        |          |           |                 |                 |     |         | 000   | 00    |       |       |          |       |
|                |           | 3P         | PORTLAND UA | 0.48    | REDLAND RD       | 06     | 0        |            | N DAY   | INJ          |          | PSNGR CAR |          |        | 01       | DRVR      | NONE            | 21 F OR-Y OR<25 |     | 016,026 | 038   | 27,07 |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | 02 NONE   | 0        | STOP   |          |           |                 |                 |     |         |       |       | 011   | 013   | 00       |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PRVTE     | S N      |        |          |           |                 |                 |     |         |       | 000   | 000   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PSNGR CAR |          |        |          |           |                 |                 |     |         |       |       |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | 03 NONE   | 0        | STOP   |          |           |                 |                 |     |         |       |       | 022   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PRVTE     | S N      |        |          |           |                 |                 |     |         |       | 000   | 000   | 00    |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          | PSNGR CAR |          |        |          |           |                 |                 |     |         |       |       |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          |           |          | 01     | DRVR     | INJC      | 35 M OR-Y OR<25 |                 | 000 |         |       |       |       |       |          |       |
|                |           |            |             |         |                  |        |          |            |         |              |          |           |          | 02     | PSNG     | NO<5      | 04 M            |                 | 000 |         |       |       |       |       |          |       |

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Redland Road  
January 1, 2009 through December 31, 2013

| SER#   | S D       |           |            | DATE        | COUNTY  | RD# FC           |         | INT-TYP  |            |             |           | SPCL USE  |          | MOVE   | PRTC INJ | A S  | G E  | LICNS | PED  | ACTN        | EVENT   | CAUSE    |
|--------|-----------|-----------|------------|-------------|---------|------------------|---------|----------|------------|-------------|-----------|-----------|----------|--------|----------|------|------|-------|------|-------------|---------|----------|
|        | P R S W   | E A U C O | COMPNT     |             |         | CONN #           | RD CHAR | (MEDIAN) | INT-REL    | OFFRD WTHR  | CRASH TYP | TRLR QTY  | OWNER    |        |          |      |      |       |      |             |         |          |
|        | INVEST    | D C S L K | MLG TYP    |             |         | FIRST STREET     | DIRECT  | LEGS     | TRAF-      | RND BT SURF | COLL TYP  | V#        | VEH TYPE |        |          |      |      |       |      |             |         |          |
|        |           |           | TIME       | URBAN AREA  | MILEPNT | SECOND STREET    | LOCTN   | (#LANES) | CNTL       | DRVWY       | LIGHT     | SVRTY     |          |        |          |      |      |       |      |             |         |          |
| 00811  | N N N     |           | 03/07/2011 | CLACKAMAS   | 1 14    |                  | INTER   | 3-LEG    | N          | N RAIN      | O-1TURN   | 01 NONE   | 0        | STRGHT |          |      |      |       |      |             | 013,010 | 04       |
| NO RPT |           |           | Mon        | OREGON CITY | 0 0     | CASCADE HY SOUTH | CN      |          | TRF SIGNAL | N WET       | TURN      | PRVTE     | N S      |        |          |      |      |       |      | 000         | 013,010 | 00       |
|        |           |           | 12P        | PORTLAND UA | 0.48    | REDLAND RD       | 01      | 0        |            | N DAY       | INJ       | PSNGR CAR |          |        | 01       | DRVR | INJA | 76 F  | OR-Y | 020         | 000     | 04       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
|        |           |           |            |             |         |                  |         |          |            |             |           | 02 NONE   | 0        | TURN-L |          |      |      |       |      |             | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PRVTE     | S W      |        |          |      |      |       |      |             | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PSNGR CAR |          |        | 01       | DRVR | INJC | 35 M  | OR-Y | 000         | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
|        |           |           |            |             |         |                  |         |          |            |             |           | 03 NONE   | 0        | UNK    |          |      |      |       |      |             | 022     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PRVTE     | UN UN    |        |          |      |      |       |      |             | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PSNGR CAR |          |        | 01       | DRVR | NONE | 17 F  | OR-Y | 000         | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
| 04246  | N N N     |           | 11/10/2012 | CLACKAMAS   | 1 14    |                  | INTER   | 3-LEG    | N          | N CLD       | ANGL-OTH  | 01 NONE   | 0        | STRGHT |          |      |      |       |      |             |         | 04       |
| CITY   |           |           | Sat        | OREGON CITY | 0 0     | CASCADE HY SOUTH | CN      |          | TRF SIGNAL | N DRY       | TURN      | PRVTE     | N S      |        |          |      |      |       |      | 000         |         | 00       |
|        |           |           | 5A         | PORTLAND UA | 0.48    | REDLAND RD       | 01      | 0        |            | N DLIT      | PDO       | PSNGR CAR |          |        | 01       | DRVR | NONE | 21 F  | OR-Y | 000         | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
|        |           |           |            |             |         |                  |         |          |            |             |           | 02 NONE   | 0        | TURN-L |          |      |      |       |      |             | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PRVTE     | W N      |        |          |      |      |       |      |             | 000     | 04       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PSNGR CAR |          |        | 01       | DRVR | NONE | 52 M  | NONE | 020         | 000     |          |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
| 01921  | N N N N N |           | 06/03/2010 | CLACKAMAS   | 1 14    |                  | INTER   | 3-LEG    | N          | N CLR       | ANGL-OTH  | 01 NONE   | 1        | STRGHT |          |      |      |       |      |             |         | 14       |
| STATE  |           |           | Thu        | OREGON CITY | 0 0     | CASCADE HY SOUTH | CN      |          | L-GRN-SIG  | N DRY       | TURN      | PRVTE     | N S      |        |          |      |      |       |      | 007         |         | 00       |
|        |           |           | 1P         | PORTLAND UA | 0.48    | REDLAND RD       | 03      | 0        |            | N DAY       | INJ       | TRUCK     |          |        | 01       | DRVR | NONE | 47 M  | OR-Y | 000         | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
|        |           |           |            |             |         |                  |         |          |            |             |           | 02 NONE   | 0        | TURN-L |          |      |      |       |      |             | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PRVTE     | W N      |        |          |      |      |       |      |             | 000     | 14       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PSNGR CAR |          |        | 01       | DRVR | INJC | 24 M  | OR-Y | 003         | 000     |          |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
|        |           |           |            |             |         |                  |         |          |            |             |           | 03 NONE   | 0        | STOP   |          |      |      |       |      |             | 012     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PRVTE     | S N      |        |          |      |      |       |      |             | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PSNGR CAR |          |        | 01       | DRVR | INJB | 71 F  | OR-Y | 000         | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
| 04321  | Y N N     |           | 11/07/2013 | CLACKAMAS   | 1 14    |                  | INTER   | 3-LEG    | N          | N RAIN      | ANGL-OTH  | 01 NONE   | 0        | STRGHT |          |      |      |       |      |             | 124     | 04,01    |
| NO RPT |           |           | Thu        | OREGON CITY | 0 0     | CASCADE HY SOUTH | CN      |          | TRF SIGNAL | N WET       | TURN      | PRVTE     | N S      |        |          |      |      |       |      | 000         | 000     | 00       |
|        |           |           | 2P         | PORTLAND UA | 0.48    | REDLAND RD       | 03      | 0        |            | N DAY       | INJ       | PSNGR CAR |          |        | 01       | DRVR | NONE | 44 M  | OR-Y | 000         | 000     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
|        |           |           |            |             |         |                  |         |          |            |             |           | 02 NONE   | 0        | TURN-L |          |      |      |       |      |             | 001     | 00       |
|        |           |           |            |             |         |                  |         |          |            |             |           | PRVTE     | W N      |        |          |      |      |       |      |             | 000     | 04,01    |
|        |           |           |            |             |         |                  |         |          |            |             |           | PSNGR CAR |          |        | 01       | DRVR | INJC | 59 F  | OR-Y | 047,020     | 000     |          |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |
| 04081  | Y N N N Y |           | 10/25/2013 | CLACKAMAS   | 1 14    |                  | INTER   | 3-LEG    | N          | N CLD       | S-STRGHT  | 01 NONE   | 0        | STRGHT |          |      |      |       |      |             | 007     | 13,01,07 |
| STATE  |           |           | Fri        | OREGON CITY | 0 0     | CASCADE HY SOUTH | CN      |          | TRF SIGNAL | N WET       | SS-O      | PRVTE     | S N      |        |          |      |      |       |      | 045,047,026 | 000     | 00       |
|        |           |           | 7A         | PORTLAND UA | 0.48    | REDLAND RD       | 04      | 0        |            | N DAWN      | PDO       | TRUCK     |          |        | 01       | DRVR | NONE | 54 M  | OR-Y |             | 000     | 13,01,07 |
|        |           |           |            |             |         |                  |         |          |            |             |           |           |          |        |          |      |      |       |      |             |         |          |

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Redland Road  
January 1, 2009 through December 31, 2013

| S D    |                      | P R S W     |         | RD# FC           |         | INT-TYP    |            | SPCL USE   |           | A S       |          | PED      |           | ACTN    |       | CAUSE   |       |
|--------|----------------------|-------------|---------|------------------|---------|------------|------------|------------|-----------|-----------|----------|----------|-----------|---------|-------|---------|-------|
| SER#   | E L G H R DAY        | COUNTY      | MLG TYP | CONN #           | RD CHAR | (MEDIAN)   | INT-REL    | OFFRD WTHR | CRASH TYP | TRLR QTY  | MOVE     | PRTC INJ | G E LICNS | LOC     | ERROR | EVENT   |       |
| INVEST | D C S L K TIME       | URBAN AREA  | MILEPNT | FIRST STREET     | DIRECT  | LEGS       | TRAF- CNTL | RNDBT SURF | COLL TYP  | OWNER     | FROM     | P#       | TYPE SVR  | E X RES |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           | 02 LOG    | 0 STRGHT |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           | PRVTE     | S N      |          |           |         |       | 006     | 00    |
|        |                      |             |         |                  |         |            |            |            |           | BOBTAIL   |          | 01       | DRVR NONE | 60 M    | OTH-Y | 000     | 00    |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           | 03 NONE   | 0 STOP   |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           | PRVTE     | S N      |          |           |         |       | 011     | 00    |
|        |                      |             |         |                  |         |            |            |            |           | PSNGR CAR |          | 01       | DRVR NONE | 58 F    | OR-Y  | 000     | 00    |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
| 01049  | Y N N N N 03/28/2011 | CLACKAMAS   | 1 14    |                  | INTER   | 3-LEG      | N          | N CLD      | O-1TURN   | 01 NONE   | 0 TURN-L |          |           |         |       |         |       |
| STATE  | Mon                  | OREGON CITY | 0 0     | CASCADE HY SOUTH | N       | TRF SIGNAL | N DRY      | TURN       |           | PRVTE     | S W      |          |           |         |       | 001     | 00    |
|        | 5P                   | PORTLAND UA | 0.49    | REDLAND RD       | 06      | 0          | N DAY      | INJ        |           | PSNGR CAR |          | 01       | DRVR INJC | 19 M    | OR-Y  | 052,047 | 32,01 |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           | 02 NONE   | 0 STOP   |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           | PRVTE     | N S      |          |           |         |       | 011     | 00    |
|        |                      |             |         |                  |         |            |            |            |           | PSNGR CAR |          | 01       | DRVR NONE | 50 F    | OR-Y  | 000     | 00    |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |
|        |                      |             |         |                  |         |            |            |            |           |           |          |          |           |         |       |         |       |

OR 213 Cascade Highway (Hwy 160) & Redland Road  
January 1, 2009 through December 31, 2013

[illegible]

OR 213 Cascade Highway (Hwy 160) & Redland Road  
January 1, 2009 through December 31, 2013

[illegible]

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT  
CRASH SUMMARIES BY YEAR BY COLLISION TYPE  
OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| COLLISION TYPE         | FATAL<br>CRASHES | NON-<br>FATAL<br>CRASHES | PROPERTY<br>DAMAGE<br>ONLY | TOTAL<br>CRASHES | PEOPLE<br>KILLED | PEOPLE<br>INJURED | TRUCKS | DRY<br>SURF | WET<br>SURF | DAY | DARK | INTER-<br>SECTION | INTER-<br>SECTION<br>RELATED | OFF-<br>ROAD |
|------------------------|------------------|--------------------------|----------------------------|------------------|------------------|-------------------|--------|-------------|-------------|-----|------|-------------------|------------------------------|--------------|
| YEAR: 2013             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| MISCELLANEOUS          | 0                | 1                        | 0                          | 1                | 0                | 2                 | 0      | 1           | 0           | 0   | 1    | 1                 | 0                            | 0            |
| REAR-END               | 0                | 1                        | 1                          | 2                | 0                | 1                 | 0      | 1           | 1           | 2   | 0    | 2                 | 0                            | 0            |
| SIDESWIPE - OVERTAKING | 0                | 1                        | 0                          | 1                | 0                | 1                 | 0      | 1           | 0           | 1   | 0    | 1                 | 0                            | 0            |
| 2013 TOTAL             | 0                | 3                        | 1                          | 4                | 0                | 4                 | 0      | 3           | 1           | 3   | 1    | 4                 | 0                            | 0            |
| YEAR: 2012             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| ANGLE                  | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 1   | 0    | 1                 | 0                            | 0            |
| REAR-END               | 0                | 4                        | 4                          | 8                | 0                | 5                 | 0      | 6           | 1           | 7   | 1    | 8                 | 0                            | 0            |
| SIDESWIPE - OVERTAKING | 0                | 1                        | 0                          | 1                | 0                | 1                 | 0      | 0           | 1           | 1   | 0    | 1                 | 0                            | 0            |
| 2012 TOTAL             | 0                | 5                        | 5                          | 10               | 0                | 6                 | 0      | 7           | 2           | 9   | 1    | 10                | 0                            | 0            |
| YEAR: 2011             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| ANGLE                  | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 0           | 1           | 1   | 0    | 1                 | 0                            | 0            |
| REAR-END               | 0                | 3                        | 3                          | 6                | 0                | 6                 | 0      | 4           | 1           | 4   | 2    | 6                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 0                        | 1                          | 1                | 0                | 0                 | 0      | 1           | 0           | 1   | 0    | 1                 | 0                            | 0            |
| 2011 TOTAL             | 0                | 3                        | 5                          | 8                | 0                | 6                 | 0      | 5           | 2           | 6   | 2    | 8                 | 0                            | 0            |
| YEAR: 2010             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| ANGLE                  | 0                | 0                        | 2                          | 2                | 0                | 0                 | 0      | 2           | 0           | 1   | 1    | 2                 | 0                            | 0            |
| PEDESTRIAN             | 0                | 1                        | 0                          | 1                | 0                | 1                 | 0      | 0           | 1           | 0   | 1    | 1                 | 0                            | 0            |
| REAR-END               | 0                | 2                        | 4                          | 6                | 0                | 3                 | 1      | 4           | 2           | 4   | 2    | 6                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 0                        | 2                          | 2                | 0                | 0                 | 0      | 1           | 1           | 1   | 1    | 2                 | 0                            | 0            |
| 2010 TOTAL             | 0                | 3                        | 8                          | 11               | 0                | 4                 | 1      | 7           | 4           | 6   | 5    | 11                | 0                            | 0            |
| YEAR: 2009             |                  |                          |                            |                  |                  |                   |        |             |             |     |      |                   |                              |              |
| REAR-END               | 0                | 2                        | 3                          | 5                | 0                | 2                 | 0      | 4           | 1           | 5   | 0    | 5                 | 0                            | 0            |
| TURNING MOVEMENTS      | 0                | 2                        | 0                          | 2                | 0                | 5                 | 0      | 2           | 0           | 1   | 1    | 2                 | 0                            | 0            |
| 2009 TOTAL             | 0                | 4                        | 3                          | 7                | 0                | 7                 | 0      | 6           | 1           | 6   | 1    | 7                 | 0                            | 0            |
| FINAL TOTAL            | 0                | 18                       | 22                         | 40               | 0                | 27                | 1      | 28          | 10          | 30  | 10   | 40                | 0                            | 0            |

*Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.*

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

[illegible]

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| SER#   | INVEST    | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE       | COUNTY<br>CITY<br>URBAN AREA | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RND BT SURF<br>DRVWY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC INJ<br>TYPE SVRTY | A S<br>G E LICNS<br>E X RES | PED<br>LOC     | ERROR       | ACTN | EVENT | CAUSE |
|--------|-----------|-------------------------------------------------------|------------|------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|------------------------------------------|--------------------------------|-------------------------------------------|--------------------|----|------------------------|-----------------------------|----------------|-------------|------|-------|-------|
| 04817  | N N N     |                                                       | 12/14/2009 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | CROSS                                   | N                        | N RAIN                                   | S-1STOP                        | 01 NONE                                   | 0 STRGHT           |    |                        |                             |                |             |      |       | 07    |
| NONE   |           |                                                       | Mon        | OREGON CITY                  | 0 0                                    | CASCADE HY SOUTH                        | SE                         | UNKNOWN                                 |                          | N WET                                    | REAR                           | PRVTE                                     | SE NW              |    |                        |                             |                |             | 000  |       | 00    |
|        |           |                                                       | 4P         | PORTLAND UA                  | 0.14                                   | WASHINGTON ST                           | 06                         | 0                                       |                          | N DAY                                    | INJ                            | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 17 F                        | OR-Y<br>OR<25  | 026         | 000  |       | 07    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE                                   | 0 STOP             |    |                        |                             |                |             |      |       |       |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | SE NW              |    |                        |                             |                |             | 011  |       | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR INJC              | 26 F                        | OR-Y<br>OR<25  | 000         | 000  |       | 00    |
| 00103  | N N N     |                                                       | 01/06/2010 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | CROSS                                   | N                        | N CLR                                    | S-1STOP                        | 01 NONE                                   | 0 STRGHT           |    |                        |                             |                |             |      |       | 07    |
| NO RPT |           |                                                       | Wed        | OREGON CITY                  | 0 0                                    | CASCADE HY SOUTH                        | SE                         | TRF SIGNAL                              |                          | N DRY                                    | REAR                           | PRVTE                                     | SE NW              |    |                        |                             |                |             | 000  |       | 00    |
|        |           |                                                       | 5P         | PORTLAND UA                  | 0.14                                   | WASHINGTON ST                           | 06                         | 0                                       |                          | N DLIT                                   | PDO                            | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 20 M                        | OR-Y<br>OR<25  | 026         | 000  |       | 07    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE                                   | 0 STOP             |    |                        |                             |                |             |      |       |       |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | SE NW              |    |                        |                             |                |             | 011  |       | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 20 F                        | OR-Y<br>OR<25  | 000         | 000  |       | 00    |
| 01142  | Y N N N N |                                                       | 04/06/2010 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | CROSS                                   | N                        | N CLD                                    | S-1STOP                        | 01 NONE                                   | 0 STRGHT           |    |                        |                             |                |             |      | 013   | 01,07 |
| STATE  |           |                                                       | Tue        | OREGON CITY                  | 0 0                                    | CLACKAMAS RIVER DR                      | SE                         | TRF SIGNAL                              |                          | N DRY                                    | REAR                           | PRVTE                                     | SE NW              |    |                        |                             |                |             | 000  |       | 00    |
|        |           |                                                       | 8P         | PORTLAND UA                  | 0.14                                   | CASCADE HY SOUTH                        | 06                         | 1                                       |                          | N DLIT                                   | INJ                            | PSNGR CAR                                 |                    | 01 | DRVR INJC              | 79 M                        | OR-Y<br>OR<25  | 047,043,026 | 000  |       | 01,07 |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE                                   | 0 STOP             |    |                        |                             |                |             |      |       |       |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | SE NW              |    |                        |                             |                |             | 011  | 013   | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 37 F                        | OR-Y<br>OR<25  | 000         | 000  |       | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | 03 NONE                                   | 0 STOP             |    |                        |                             |                |             |      |       |       |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | SE NW              |    |                        |                             |                |             | 022  |       | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 53 F                        | OTH-Y<br>N-RES | 000         | 000  |       | 00    |
| 01339  | N N N     |                                                       | 04/20/2011 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | CROSS                                   | N                        | N CLR                                    | S-1STOP                        | 01 NONE                                   | 0 STRGHT           |    |                        |                             |                |             |      |       | 07    |
| NONE   |           |                                                       | Wed        | OREGON CITY                  | 0 0                                    | CASCADE HY SOUTH                        | SE                         | TRF SIGNAL                              |                          | N DRY                                    | REAR                           | PRVTE                                     | SE NW              |    |                        |                             |                |             | 000  |       | 00    |
|        |           |                                                       | 11A        | PORTLAND UA                  | 0.14                                   | WASHINGTON ST                           | 06                         | 1                                       |                          | N DAY                                    | INJ                            | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 21 F                        | OR-Y<br>OR<25  | 026         | 000  |       | 07    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE                                   | 0 STOP             |    |                        |                             |                |             |      |       |       |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PRVTE                                     | SE NW              |    |                        |                             |                |             | 011  |       | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                | PSNGR CAR                                 |                    | 01 | DRVR INJC              | 24 F                        | OR-Y<br>OR<25  | 000         | 000  |       | 00    |
|        |           |                                                       |            |                              |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    | 02 | PSNG INJC              | 25 F                        |                | 000         | 000  |       | 00    |
| 01822  | N N N     |                                                       | 05/13/2011 | CLACKAMAS                    | 1 14                                   |                                         | INTER                      | CROSS                                   | N                        | N CLR                                    | S-1STOP                        | 01 NONE                                   | 0 STRGHT           |    |                        |                             |                |             |      |       | 07    |
| NONE   |           |                                                       | Fri        | OREGON CITY                  | 0 0                                    | CASCADE HY SOUTH                        | SE                         | TRF SIGNAL                              |                          | N DRY                                    | REAR                           | PRVTE                                     | SE NW              |    |                        |                             |                |             | 000  |       | 00    |
|        |           |                                                       | 3P         | PORTLAND UA                  | 0.14                                   | WASHINGTON ST                           | 06                         | 0                                       |                          | N DAY                                    | PDO                            | PSNGR CAR                                 |                    | 01 | DRVR NONE              | 00 F                        | OTH-Y<br>N-RES | 026         | 000  |       | 07    |

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

[illegible]

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| SER#            | S D<br>P R S W<br>E A U C O DATE<br>E L G H R DAY<br>INVEST D C S L K TIME | COUNTY<br>CITY<br>URBAN AREA            | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(#LANES)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RNDT SURF<br>DRVMY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE    | MOVE<br>FROM<br>TO | P# | PRTC INJ<br>TYPE SVRTY | A S<br>G E LICNS<br>E X RES | PED<br>LOC | ERROR   | ACTN EVENT | CAUSE          |
|-----------------|----------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|----------------------------------------|--------------------------------|----------------------------------------------|--------------------|----|------------------------|-----------------------------|------------|---------|------------|----------------|
|                 |                                                                            |                                         |                                        |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE NW SE<br>PSNGR CAR   |                    | 01 | DRVR NONE              | 19 F OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00       |
| 03698<br>STATE  | N N N N N 09/30/2009<br>Wed<br>6P                                          | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                | S-1STOP<br>REAR<br>PDO         | 01 NONE 0 STRGHT<br>PRVTE NW SE<br>PSNGR CAR |                    | 01 | DRVR NONE              | 25 F OTH-Y<br>N-RES         |            | 026     | 000<br>000 | 07<br>00<br>07 |
|                 |                                                                            |                                         |                                        |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE NW SE<br>PSNGR CAR   |                    | 01 | DRVR NONE              | 58 F OTH-Y<br>UNK           |            | 000     | 011<br>000 | 00<br>00       |
| 00262<br>STATE  | N N N 01/25/2010<br>Mon<br>11A                                             | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>1                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                | S-1STOP<br>REAR<br>PDO         | 01 NONE 2 STRGHT<br>PRVTE NW SE<br>SEMI TOW  |                    | 01 | DRVR NONE              | 50 M OR-Y<br>N-RES          |            | 043,026 | 000<br>000 | 07<br>00<br>07 |
|                 |                                                                            |                                         |                                        |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE NW SE<br>PSNGR CAR   |                    | 01 | DRVR NONE              | 22 M OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00       |
| 00506<br>NO RPT | N N N 02/12/2010<br>Fri<br>1P                                              | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>1                              | N<br>TRF SIGNAL          | N RAIN<br>N WET<br>N DAY               | S-1STOP<br>REAR<br>PDO         | 01 NONE 0 STRGHT<br>PRVTE NW SE<br>PSNGR CAR |                    | 01 | DRVR NONE              | 18 F OR-Y<br>OR<25          |            | 026     | 000<br>000 | 07<br>00<br>07 |
|                 |                                                                            |                                         |                                        |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE NW SE<br>PSNGR CAR   |                    | 01 | DRVR NONE              | 36 F OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00       |
| 01821<br>NONE   | N N N 05/27/2010<br>Thu<br>5P                                              | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>1                              | N<br>TRF SIGNAL          | N RAIN<br>N WET<br>N DAY               | S-1STOP<br>REAR<br>INJ         | 01 NONE 0 STRGHT<br>PRVTE SW NE<br>PSNGR CAR |                    | 01 | DRVR INJB              | 54 F OR-Y<br>OR<25          |            | 026     | 000<br>000 | 07<br>00<br>07 |
|                 |                                                                            |                                         |                                        |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE SW NE<br>PSNGR CAR   |                    | 01 | DRVR INJC              | 57 F OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00       |
| 03502<br>NONE   | N N N 09/27/2010<br>Mon<br>11A                                             | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>1                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                | S-1STOP<br>REAR<br>PDO         | 01 NONE 0 STRGHT<br>PRVTE NW SE<br>PSNGR CAR |                    | 01 | DRVR NONE              | 00 F UNK<br>OR<25           |            | 026     | 000<br>000 | 07<br>00<br>07 |
|                 |                                                                            |                                         |                                        |                                         |                            |                                         |                          |                                        |                                | 02 NONE 0 STOP<br>PRVTE NW SE<br>PSNGR CAR   |                    | 01 | DRVR NONE              | 70 M OR-Y<br>OR<25          |            | 000     | 011<br>000 | 00<br>00       |

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| SER#  | INVEST | S D<br>P R S W<br>E A U C O<br>E L G H R | DATE       | COUNTY      | RD# FC<br>COMPNT<br>MLG TYP | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RND BT<br>DRVWY | WTHR<br>SURF<br>LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER | MOVE<br>FROM<br>TO | P# | PRTC<br>TYPE | INJ<br>SVRTY | A S<br>G E<br>X RES | LICNS<br>LOC | PED<br>ERROR | ACTN | EVENT | CAUSE |
|-------|--------|------------------------------------------|------------|-------------|-----------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|--------------------------|-----------------------|--------------------------------|-------------------------------|--------------------|----|--------------|--------------|---------------------|--------------|--------------|------|-------|-------|
| 03589 | N N N  |                                          | 09/29/2011 | CLACKAMAS   | 1 14                        |                                         | INTER                      | CROSS                                   | N                        |                          | N CLR                 | S-1STOP                        | 01 NONE                       | 0 STRGHT           |    |              |              |                     |              |              |      |       | 07    |
| NONE  |        |                                          | Thu        | OREGON CITY | 0 0                         | CASCADE HY SOUTH                        | NW                         |                                         | TRF SIGNAL               | N DRY                    | REAR                  |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  |       | 00    |
|       |        |                                          | 12P        | PORTLAND UA | 0.14                        | WASHINGTON ST                           | 06                         | 0                                       |                          | N DAY                    | INJ                   |                                | PSNGR CAR                     |                    | 01 | DRVR         | NONE         | 19 M                | OR-Y         | 026          | 000  |       | 07    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR>25               |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | 02 NONE                       | 0 STOP             |    |              |              |                     |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 011  |       | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PSNGR CAR                     |                    | 01 | DRVR         | INJC         | 44 F                | OR-Y         | 000          | 000  |       | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
| 04398 | N Y N  | Y                                        | 11/19/2011 | CLACKAMAS   | 1 14                        |                                         | INTER                      | CROSS                                   | N                        |                          | N CLD                 | S-1STOP                        | 01 NONE                       | 0 STRGHT           |    |              |              |                     |              |              |      | 013   | 07    |
| CITY  |        |                                          | Sat        | OREGON CITY | 0 0                         | CASCADE HY SOUTH                        | NW                         |                                         | TRF SIGNAL               | N DRY                    | REAR                  |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  |       | 00    |
|       |        |                                          | 10P        | PORTLAND UA | 0.14                        | WASHINGTON ST                           | 06                         | 1                                       |                          | N DLIT                   | INJ                   |                                | PSNGR CAR                     |                    | 01 | DRVR         | NONE         | 45 F                | SUSP         | 026          | 000  |       | 07    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | 02 NONE                       | 0 STOP             |    |              |              |                     |              |              |      | 011   | 013   |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  | 000   | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PSNGR CAR                     |                    | 01 | DRVR         | INJC         | 30 M                | OR-Y         | 000          | 000  |       | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | 03 NONE                       | 0 STOP             |    |              |              |                     |              |              |      | 022   |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  | 000   | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PSNGR CAR                     |                    | 01 | DRVR         | INJC         | 64 F                | OR-Y         | 000          | 000  |       | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | 02 PSNG                       | INJC               |    |              |              | 33 M                |              |              | 000  | 000   | 00    |
| 00612 | N N N  | Y                                        | 02/17/2012 | CLACKAMAS   | 1 14                        |                                         | INTER                      | CROSS                                   | N                        |                          | N RAIN                | S-STRGHT                       | 01 NONE                       | 0 STRGHT           |    |              |              |                     |              |              |      |       | 13    |
| NONE  |        |                                          | Fri        | OREGON CITY | 0 0                         | CASCADE HY SOUTH                        | NW                         |                                         | TRF SIGNAL               | N WET                    | SS-O                  |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  |       | 00    |
|       |        |                                          | 12P        | PORTLAND UA | 0.14                        | WASHINGTON ST                           | 06                         | 1                                       |                          | N DAY                    | INJ                   |                                | PSNGR CAR                     |                    | 01 | DRVR         | INJC         | 59 F                | OR-Y         | 045          | 000  |       | 13    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | 02 NONE                       | 0 STRGHT           |    |              |              |                     |              |              |      | 000   |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  | 000   | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PSNGR CAR                     |                    | 01 | DRVR         | NONE         | 00 M                | UNK          | 000          | 000  |       | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
| 01212 | N N N  |                                          | 03/31/2012 | CLACKAMAS   | 1 14                        |                                         | INTER                      | CROSS                                   | N                        |                          | N CLR                 | S-1STOP                        | 01 NONE                       | 0 STRGHT           |    |              |              |                     |              |              |      |       | 07    |
| NONE  |        |                                          | Sat        | OREGON CITY | 0 0                         | CASCADE HY SOUTH                        | NW                         |                                         | TRF SIGNAL               | N DRY                    | REAR                  |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  |       | 00    |
|       |        |                                          | 2P         | PORTLAND UA | 0.14                        | WASHINGTON ST                           | 06                         | 1                                       |                          | N DAY                    | PDO                   |                                | PSNGR CAR                     |                    | 01 | DRVR         | NONE         | 00 M                | UNK          | 026          | 000  |       | 07    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR>25               |              |              |      |       |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | 02 NONE                       | 0 STOP             |    |              |              |                     |              |              |      | 011   |       |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PRVTE                         | NW SE              |    |              |              |                     |              |              | 000  | 000   | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                | PSNGR CAR                     |                    | 01 | DRVR         | NONE         | 73 F                | OR-Y         | 000          | 000  |       | 00    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | OR<25               |              |              |      |       |       |
| 01295 | N N N  |                                          | 04/07/2012 | CLACKAMAS   | 1 14                        |                                         | INTER                      | CROSS                                   | N                        |                          | N CLR                 | S-1STOP                        | 01 NONE                       | 0 STRGHT           |    |              |              |                     |              |              |      |       | 07    |
| NONE  |        |                                          | Sat        | OREGON CITY | 0 0                         | CASCADE HY SOUTH                        | NW                         |                                         | TRF SIGNAL               | N DRY                    | REAR                  |                                | UNKN                          | NW SE              |    |              |              |                     |              |              | 000  |       | 00    |
|       |        |                                          | 4P         | PORTLAND UA | 0.14                        | WASHINGTON ST                           | 06                         | 1                                       |                          | N DAY                    | PDO                   |                                | PSNGR CAR                     |                    | 01 | DRVR         | NONE         | 00 M                | OR-Y         | 026          | 000  |       | 07    |
|       |        |                                          |            |             |                             |                                         |                            |                                         |                          |                          |                       |                                |                               |                    |    |              |              | UNK                 |              |              |      |       |       |

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| SER#            | S D<br>P R S W<br>E A U C O<br>E L G H R<br>INVEST D C S L K | DATE       | COUNTY<br>CITY<br>URBAN AREA            | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RND BT SURF<br>DRVWY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC INJ<br>TYPE SVRTY | A S<br>G E LICNS<br>E X RES | PED<br>LOC | ERROR | ACTN EVENT | CAUSE                 |
|-----------------|--------------------------------------------------------------|------------|-----------------------------------------|----------------------------------------|-----------------------------------------|----------------------------|-----------------------------------------|--------------------------|------------------------------------------|--------------------------------|-------------------------------------------|--------------------|----|------------------------|-----------------------------|------------|-------|------------|-----------------------|
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>NW SE    |    | 01 DRVR NONE           | 50 M OR-Y<br>OR<25          |            | 000   | 011<br>000 | 00<br>00              |
| 02387<br>NONE   | N N N<br>Tue<br>11A                                          | 07/03/2012 | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>1                              | N<br>TRF SIGNAL          | N CLD<br>N DRY<br>N DAY                  | S-1STOP<br>REAR<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>NW SE  |    | 01 DRVR NONE           | 75 F OR-Y<br>OR<25          |            | 026   | 000<br>000 | 07<br>00<br>07        |
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>NW SE    |    | 01 DRVR INJC           | 23 F OR-Y<br>OR<25          |            | 000   | 012<br>000 | 00<br>00              |
| 03599<br>NO RPT | N N N<br>Fri<br>1P                                           | 09/28/2012 | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>NW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                  | S-1STOP<br>REAR<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>NW SE  |    | 01 DRVR NONE           | 57 M OR-Y<br>OR<25          |            | 026   | 000<br>000 | 07<br>00<br>07        |
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>NW SE    |    | 01 DRVR INJC           | 21 M OR-Y<br>OR<25          |            | 000   | 011<br>000 | 00<br>00              |
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                |                                           |                    |    | 02 PSNG INJC           | 60 F                        |            | 000   | 000        | 00                    |
| 01672<br>CITY   | N N N N N<br>Wed<br>3P                                       | 05/15/2013 | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CLACKAMAS RIVER DR<br>CASCADE HY SOUTH  | INTER<br>NW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL          | N CLD<br>N WET<br>N DAY                  | S-1STOP<br>REAR<br>PDO         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>NW SE  |    | 01 DRVR NONE           | 18 F OR-Y<br>OR<25          |            | 026   | 000<br>000 | 013<br>07<br>00<br>07 |
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>NW SE    |    | 01 DRVR NONE           | 24 F OR-Y<br>OR<25          |            | 000   | 011<br>000 | 013<br>00<br>00       |
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 03 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>NW SE    |    | 01 DRVR NONE           | 30 M OR-Y<br>OR<25          |            | 000   | 022<br>000 | 00<br>00              |
| 02081<br>COUNTY | N N N N N<br>Wed<br>10A                                      | 06/12/2013 | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CLACKAMAS RIVER DR<br>CASCADE HY SOUTH  | INTER<br>NW<br>06          | CROSS<br>1                              | N<br>TRF SIGNAL          | N CLD<br>N DRY<br>N DAY                  | S-1STOP<br>SS-O<br>INJ         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0 STRGHT<br>NW SE  |    | 01 DRVR NONE           | 50 M OR-Y<br>OR<25          |            | 045   | 000<br>000 | 13<br>00<br>13        |
|                 |                                                              |            |                                         |                                        |                                         |                            |                                         |                          |                                          |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0 STOP<br>NW SE    |    | 01 DRVR INJC           | 42 F OR-Y<br>OR<25          |            | 000   | 011<br>000 | 00<br>00              |

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION  
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CONTINUOUS SYSTEM CRASH LISTING

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| SER#            | INVEST | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE                     | COUNTY<br>CITY<br>URBAN AREA            | RD# FC<br>COMPNT<br>MLG TYP<br>MILEPNT | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD WTHR<br>RNDBT SURF<br>DRVWY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P# | PRTC<br>TYPE | INJ<br>SVRTY    | A S<br>G E<br>X RES    | LICNS<br>LOC | PED<br>ERROR | ACTN<br>EVENT | CAUSE          |
|-----------------|--------|-------------------------------------------------------|--------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|----------------------------|---------------------|--------------------------|-----------------------------------------|--------------------------------|-------------------------------------------|--------------------|----|--------------|-----------------|------------------------|--------------|--------------|---------------|----------------|
| 03531<br>CITY   |        | N N N N N                                             | 09/19/2009<br>Sat<br>8P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CLACKAMAS RIVER DR<br>CASCADE HY SOUTH  | INTER<br>CN<br>01          | CROSS<br>0          | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DARK                | ANGL-OTH<br>TURN<br>INJ        | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>NE NW         |    | 01           | DRVR<br>NONE    | 25 F<br>OR-Y<br>OR<25  |              | 028          | 016<br>000    | 02<br>00<br>02 |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>SE NW         |    | 01           | DRVR<br>INJC    | 41 F<br>OR-Y<br>OR<25  |              | 000          | 000<br>000    | 00<br>00       |
| 04362<br>STATE  |        | N N N N N                                             | 11/15/2009<br>Sun<br>12P | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>01          | CROSS<br>1          | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                 | ANGL-OTH<br>TURN<br>INJ        | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>N S           |    | 01           | DRVR<br>INJC    | 67 F<br>OR-Y<br>OR<25  |              | 020          | 000<br>000    | 04<br>00<br>04 |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>S W           |    | 01           | DRVR<br>INJC    | 48 F<br>OR-Y<br>OR<25  |              | 000          | 000<br>000    | 00<br>00       |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                |                                           |                    |    |              | 02 PSNG<br>INJC | 16 M                   |              | 000          | 000           | 00             |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                |                                           |                    |    |              | 03 PSNG<br>INJC | 13 F                   |              | 000          | 000           | 00             |
| 04350<br>NONE   |        | N N N                                                 | 11/18/2010<br>Thu<br>5P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>01          | CROSS<br>0          | N<br>TRF SIGNAL          | N RAIN<br>N WET<br>N DLIT               | ANGL-OTH<br>TURN<br>PDO        | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>NW SW         |    | 01           | DRVR<br>NONE    | 40 F<br>OR-Y<br>OR<25  |              | 028          | 000<br>000    | 02<br>00<br>02 |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>NE SW         |    | 01           | DRVR<br>NONE    | 18 M<br>OR-Y<br>OR<25  |              | 000          | 000<br>000    | 00<br>00       |
| 03019<br>CITY   |        | N N N N Y                                             | 08/19/2011<br>Fri<br>12P | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>01          | CROSS<br>0          | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                 | S-OTHER<br>TURN<br>PDO         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>NW SW         |    | 01           | DRVR<br>NONE    | 61 M<br>OTH-Y<br>N-RES |              | 034          | 031<br>000    | 06<br>00<br>06 |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                | 02 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>NW SW         |    | 01           | DRVR<br>NONE    | 44 M<br>OR-Y<br>OR>25  |              | 001          | 000<br>000    | 00<br>00       |
| 01599<br>NO RPT |        | N N N                                                 | 05/06/2010<br>Thu<br>6P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1 14<br>0 0<br>0.14                    | CLACKAMAS RIVER DR<br>CASCADE HY SOUTH  | INTER<br>CN<br>02          | CROSS<br>1          | N<br>TRF SIGNAL          | N CLR<br>N DRY<br>N DAY                 | S-OTHER<br>TURN<br>PDO         | 01 NONE<br>PRVTE<br>PSNGR CAR             | 0<br>SE NE         |    | 01           | DRVR<br>NONE    | 23 M<br>OR-Y<br>OR<25  |              | 026          | 000<br>000    | 07<br>00<br>07 |
|                 |        |                                                       |                          |                                         |                                        |                                         |                            |                     |                          |                                         |                                | 02 NONE<br>UNKN<br>PSNGR CAR              | 0<br>SE NE         |    | 01           | DRVR<br>NONE    | 46 F<br>NONE<br>OR<25  |              | 000          | 013<br>000    | 00<br>00       |

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

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (Hwy 160) & Washington Street  
January 1, 2009 through December 31, 2013

| SER#            | INVEST    | S<br>E<br>D<br>C<br>S<br>L<br>K | D<br>R<br>S<br>W<br>O<br>U<br>T<br>H<br>T<br>I<br>M<br>E | DATE                     | COUNTY<br>CITY<br>URBAN AREA            | RD#<br>COMPNT<br>MLG TYP<br>MILEPNT | FC<br>TYP       | CONN #<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(#LANES) | INT-REL<br>TRAF-<br>CNTL | OFFRD<br>RNDBT<br>DRVWY | WTHR<br>SURF<br>LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | P#              | PRTC<br>TYPE | INJ<br>SVRTY | A<br>G<br>E<br>X | S<br>E<br>RES | LICNS<br>LOC   | PED<br>ERROR | ACTN<br>EVENT | CAUSE             |
|-----------------|-----------|---------------------------------|----------------------------------------------------------|--------------------------|-----------------------------------------|-------------------------------------|-----------------|-----------------------------------------|----------------------------|---------------------|--------------------------|-------------------------|-----------------------|--------------------------------|-------------------------------------------|--------------------|-----------------|--------------|--------------|------------------|---------------|----------------|--------------|---------------|-------------------|
| 03865<br>NONE   | N N N     |                                 |                                                          | 10/16/2012<br>Tue<br>4P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1<br>0<br>0.14                      | 14<br>0<br>0.14 | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>03          | CROSS<br>1          | N<br>TRF SIGNAL          | N<br>N<br>N             | CLR<br>DRY<br>DAY     | ANGL-OTH<br>ANGL<br>PDO        | 01<br>NONE<br>UNKN<br>UNKNOWN             | 0<br>W E           | STRGHT<br>N S   | 01           | DRVR         | NONE             | 00<br>U       | UNK<br>UNK     | 028          | 000<br>000    | 02<br>00<br>02    |
|                 |           |                                 |                                                          |                          |                                         |                                     |                 |                                         |                            |                     |                          |                         |                       |                                | 02<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>N S           | STRGHT<br>N S   | 01           | DRVR         | NONE             | 73<br>F       | OR-Y<br>OR<25  | 000          | 000<br>000    | 00<br>00          |
| 00902<br>NONE   | N N N     |                                 |                                                          | 03/19/2010<br>Fri<br>8A  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1<br>0<br>0.14                      | 14<br>0<br>0.14 | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>04          | CROSS<br>0          | N<br>TRF SIGNAL          | N<br>N<br>N             | CLR<br>DRY<br>DAWN    | ANGL-OTH<br>ANGL<br>PDO        | 01<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>NW SE         | STRGHT<br>NW SE | 01           | DRVR         | NONE             | 00<br>M       | UNK<br>UNK     | 020          | 000<br>000    | 04<br>00<br>04    |
|                 |           |                                 |                                                          |                          |                                         |                                     |                 |                                         |                            |                     |                          |                         |                       |                                | 02<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>SW NE         | STRGHT<br>SW NE | 01           | DRVR         | NONE             | 46<br>F       | OR-Y<br>OR>25  | 000          | 000<br>000    | 00<br>00          |
| 00965<br>NONE   | N N N     |                                 |                                                          | 03/23/2010<br>Tue<br>10A | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1<br>0<br>0.14                      | 14<br>0<br>0.14 | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>04          | CROSS<br>0          | N<br>TRF SIGNAL          | N<br>N<br>N             | CLR<br>DRY<br>DAY     | ANGL-OTH<br>ANGL<br>PDO        | 01<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>NW SE         | STRGHT<br>NW SE | 01           | DRVR         | NONE             | 58<br>M       | OR-Y<br>OR<25  | 000          | 000<br>000    | 04<br>00<br>00    |
|                 |           |                                 |                                                          |                          |                                         |                                     |                 |                                         |                            |                     |                          |                         |                       |                                | 02<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>SW NE         | STRGHT<br>SW NE | 01           | DRVR         | NONE             | 50<br>M       | OR-Y<br>OR<25  | 020          | 000<br>000    | 00<br>04          |
| 04292<br>COUNTY | N N N N N |                                 |                                                          | 11/12/2010<br>Fri<br>6A  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1<br>0<br>0.14                      | 14<br>0<br>0.14 | CLACKAMAS RIVER DR<br>CASCADE HY SOUTH  | INTER<br>CN<br>04          | CROSS<br>0          | N<br>TRF SIGNAL          | N<br>N<br>N             | FOG<br>WET<br>DAWN    | PED<br>PED<br>INJ              | 01<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>NE SE         | TURN-L<br>NE SE | 01           | DRVR         | NONE             | 69<br>M       | OR-Y<br>OR<25  | 028          | 000<br>000    | 02,19<br>00<br>02 |
|                 |           |                                 |                                                          |                          |                                         |                                     |                 |                                         |                            |                     |                          |                         |                       |                                |                                           |                    | STRGHT<br>NE SW | 01           | PED          | INJB             | 65<br>M       |                | 01 000       | 035           | 19                |
| 01864<br>NONE   | N N N     |                                 |                                                          | 05/28/2011<br>Sat<br>6P  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1<br>0<br>0.14                      | 14<br>0<br>0.14 | CASCADE HY SOUTH<br>WASHINGTON ST       | INTER<br>CN<br>04          | CROSS<br>0          | N<br>TRF SIGNAL          | N<br>N<br>N             | RAIN<br>WET<br>DAY    | ANGL-OTH<br>ANGL<br>PDO        | 01<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>NW SE         | STRGHT<br>NW SE | 01           | DRVR         | NONE             | 35<br>M       | OR-Y<br>OR>25  | 020          | 000<br>000    | 04<br>00<br>04    |
|                 |           |                                 |                                                          |                          |                                         |                                     |                 |                                         |                            |                     |                          |                         |                       |                                | 02<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>SW NE         | STRGHT<br>SW NE | 01           | DRVR         | NONE             | 34<br>F       | OTH-Y<br>N-RES | 000          | 000<br>000    | 00<br>00          |
| 04280<br>NONE   | N N N     |                                 |                                                          | 11/13/2012<br>Tue<br>7A  | CLACKAMAS<br>OREGON CITY<br>PORTLAND UA | 1<br>0<br>0.14                      | 14<br>0<br>0.14 | CLACKAMAS RIVER DR<br>CASCADE HY SOUTH  | INTER<br>CN<br>04          | CROSS<br>1          | N<br>TRF SIGNAL          | N<br>N<br>N             | CLR<br>DRY<br>DAY     | S-1STOP<br>REAR<br>INJ         | 01<br>NONE<br>PRVTE<br>PSNGR CAR          | 0<br>S N           | STRGHT<br>S N   | 01           | DRVR         | NONE             | 19<br>M       | OR-Y<br>OR<25  | 026          | 000<br>000    | 26,07<br>00<br>07 |



# ACTION CODE TRANSLATION LIST

| ACTION<br>CODE | SHORT<br>DESCRIPTION | LONG DESCRIPTION                                                                          |
|----------------|----------------------|-------------------------------------------------------------------------------------------|
| 000            | NONE                 | NO ACTION OR NON-WARRANTED                                                                |
| 001            | SKIDDED              | SKIDDED                                                                                   |
| 002            | ON/OFF V             | GETTING ON OR OFF STOPPED OR PARKED VEHICLE                                               |
| 003            | LOAD OVR             | OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.                                             |
| 006            | SLOW DN              | SLOWED DOWN                                                                               |
| 007            | AVOIDING             | AVOIDING MANEUVER                                                                         |
| 008            | PAR PARK             | PARALLEL PARKING                                                                          |
| 009            | ANG PARK             | ANGLE PARKING                                                                             |
| 010            | INTERFERE            | PASSENGER INTERFERING WITH DRIVER                                                         |
| 011            | STOPPED              | STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN                                        |
| 012            | STP/L TRN            | STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.                                      |
| 013            | STP TURN             | STOPPED WHILE EXECUTING A TURN                                                            |
| 015            | GO A/STOP            | PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.                                      |
| 016            | TRN A/RED            | TURNED ON RED AFTER STOPPING                                                              |
| 017            | LOSTCTRL             | LOST CONTROL OF VEHICLE                                                                   |
| 018            | EXIT DWY             | ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY                                         |
| 019            | ENTR DWY             | ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY                                         |
| 020            | STR ENTR             | BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER                  |
| 021            | NO DRVR              | CAR RAN AWAY - NO DRIVER                                                                  |
| 022            | PREV COL             | STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED |
| 023            | STALLED              | VEHICLE STALLED                                                                           |
| 024            | DRVR DEAD            | DEAD BY UNASSOCIATED CAUSE                                                                |
| 025            | FATIGUE              | FATIGUED, SLEEPY, ASLEEP                                                                  |
| 026            | SUN                  | DRIVER BLINDED BY SUN                                                                     |
| 027            | HDLGHTS              | DRIVER BLINDED BY HEADLIGHTS                                                              |
| 028            | ILLNESS              | PHYSICALLY ILL                                                                            |
| 029            | THRU MED             | VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER                                  |
| 030            | PURSUIT              | PURSUING OR ATTEMPTING TO STOP A VEHICLE                                                  |
| 031            | PASSING              | PASSING SITUATION                                                                         |
| 032            | PRKOFFRD             | VEHICLE PARKED BEYOND CURB OR SHOULDER                                                    |
| 033            | CROS MED             | VEHICLE CROSSED EARTH OR GRASS MEDIAN                                                     |
| 034            | X N/SGNL             | CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT                                      |
| 035            | X W/ SGNL            | CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT                                         |
| 036            | DIAGONAL             | CROSSING AT INTERSECTION - DIAGONALLY                                                     |
| 037            | BTWN INT             | CROSSING BETWEEN INTERSECTIONS                                                            |
| 038            | DISTRACT             | DRIVER'S ATTENTION DISTRACTED                                                             |
| 039            | W/TRAF-S             | WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC                                  |
| 040            | A/TRAF-S             | WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC                                |
| 041            | W/TRAF-P             | WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC                                  |
| 042            | A/TRAF-P             | WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC                                |
| 043            | PLAYINRD             | PLAYING IN STREET OR ROAD                                                                 |
| 044            | PUSH MV              | PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER                                      |
| 045            | WORK ON              | WORKING IN ROADWAY OR ALONG SHOULDER                                                      |
| 046            | W/ TRAFIC            | NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC                                  |
| 047            | A/ TRAFIC            | NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC                                |
| 050            | LAY ON RD            | STANDING OR LYING IN ROADWAY                                                              |
| 051            | ENT OFFRD            | ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD                                         |
| 052            | MERGING              | MERGING                                                                                   |
| 055            | SPRAY                | BLINDED BY WATER SPRAY                                                                    |
| 088            | OTHER                | OTHER ACTION                                                                              |

ACTION CODE TRANSLATION LIST

| ACTION<br>CODE | SHORT<br>DESCRIPTION | LONG DESCRIPTION |
|----------------|----------------------|------------------|
| 099            | UNK                  | UNKNOWN ACTION   |

# CAUSE CODE TRANSLATION LIST

| CAUSE CODE | SHORT DESCRIPTION | LONG DESCRIPTION                                 |
|------------|-------------------|--------------------------------------------------|
| 00         | NO CODE           | NO CAUSE ASSOCIATED AT THIS LEVEL                |
| 01         | TOO-FAST          | TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED |
| 02         | NO-YIELD          | DID NOT YIELD RIGHT-OF-WAY                       |
| 03         | PAS-STOP          | PASSED STOP SIGN OR RED FLASHER                  |
| 04         | DIS SIG           | DISREGARDED TRAFFIC SIGNAL                       |
| 05         | LEFT-CTR          | DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING |
| 06         | IMP-OVER          | IMPROPER OVERTAKING                              |
| 07         | TOO-CLOS          | FOLLOWED TOO CLOSELY                             |
| 08         | IMP-TURN          | MADE IMPROPER TURN                               |
| 09         | DRINKING          | ALCOHOL OR DRUG INVOLVED                         |
| 10         | OTHR-IMP          | OTHER IMPROPER DRIVING                           |
| 11         | MECH-DEF          | MECHANICAL DEFECT                                |
| 12         | OTHER             | OTHER (NOT IMPROPER DRIVING)                     |
| 13         | IMP LN C          | IMPROPER CHANGE OF TRAFFIC LANES                 |
| 14         | DIS TCD           | DISREGARDED OTHER TRAFFIC CONTROL DEVICE         |
| 15         | WRNG WAY          | WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO |
| 16         | FATIGUE           | DRIVER DROWSY/FATIGUED/SLEEPY                    |
| 17         | ILLNESS           | PHYSICAL ILLNESS                                 |
| 18         | IN RDWY           | NON-MOTORIST ILLEGALLY IN ROADWAY                |
| 19         | NT VISBL          | NOT VISIBLE: DARK / NON-REFLECTIVE CLOTHING      |
| 20         | IMP PKNG          | VEHICLE IMPROPERLY PARKED                        |
| 21         | DEF STER          | DEFECTIVE STEERING MECHANISM                     |
| 22         | DEF BRKE          | INADEQUATE OR NO BRAKES                          |
| 24         | LOADSHFT          | VEHICLE LOST LOAD OR LOAD SHIFTED                |
| 25         | TIREFAIL          | TIRE FAILURE                                     |
| 26         | PHANTOM           | PHANTOM / NON-CONTACT VEHICLE                    |
| 27         | INATTENT          | INATTENTION                                      |
| 28         | NM INATT          | NON-MOTORIST INATTENTION                         |
| 29         | F AVOID           | FAILED TO AVOID VEHICLE AHEAD                    |
| 30         | SPEED             | DRIVING IN EXCESS OF POSTED SPEED                |
| 31         | RACING            | SPEED RACING (PER PAR)                           |
| 32         | CARELESS          | CARELESS DRIVING (PER PAR)                       |
| 33         | RECKLESS          | RECKLESS DRIVING (PER PAR)                       |
| 34         | AGGRESV           | AGGRESSIVE DRIVING (PER PAR)                     |
| 35         | RD RAGE           | ROAD RAGE (PER PAR)                              |
| 40         | VIEW OBS          | VIEW OBSCURED                                    |
| 50         | USED MDN          | IMPROPER USE OF MEDIAN OR SHOULDER               |

# COLLISION TYPE CODE TRANSLATION LIST

| COLL CODE | SHORT DESCRIPTION | LONG DESCRIPTION             |
|-----------|-------------------|------------------------------|
| &         | OTH               | MISCELLANEOUS                |
| -         | BACK              | BACKING                      |
| 0         | PED               | PEDESTRIAN                   |
| 1         | ANGL              | ANGLE                        |
| 2         | HEAD              | HEAD-ON                      |
| 3         | REAR              | REAR-END                     |
| 4         | SS-M              | SIDESWIPE - MEETING          |
| 5         | SS-O              | SIDESWIPE - OVERTAKING       |
| 6         | TURN              | TURNING MOVEMENT             |
| 7         | PARK              | PARKING MANEUVER             |
| 8         | NCOL              | NON-COLLISION                |
| 9         | FIX               | FIXED OBJECT OR OTHER OBJECT |

# CRASH TYPE CODE TRANSLATION LIST

| CRASH TYPE | SHORT DESCRIPTION | LONG DESCRIPTION                                  |
|------------|-------------------|---------------------------------------------------|
| &          | OVERTURN          | OVERTURNED                                        |
| 0          | NON-COLL          | OTHER NON-COLLISION                               |
| 1          | OTH RDWY          | MOTOR VEHICLE ON OTHER ROADWAY                    |
| 2          | PRKD MV           | PARKED MOTOR VEHICLE                              |
| 3          | PED               | PEDESTRIAN                                        |
| 4          | TRAIN             | RAILWAY TRAIN                                     |
| 6          | BIKE              | PEDALCYCLIST                                      |
| 7          | ANIMAL            | ANIMAL                                            |
| 8          | FIX OBJ           | FIXED OBJECT                                      |
| 9          | OTH OBJ           | OTHER OBJECT                                      |
| A          | ANGL-STP          | ENTERING AT ANGLE - ONE VEHICLE STOPPED           |
| B          | ANGL-OTH          | ENTERING AT ANGLE - ALL OTHERS                    |
| C          | S-STRGHT          | FROM SAME DIRECTION - BOTH GOING STRAIGHT         |
| D          | S-1TURN           | FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT      |
| E          | S-1STOP           | FROM SAME DIRECTION - ONE STOPPED                 |
| F          | S-OTHER           | FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING |
| G          | O-STRGHT          | FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT     |
| H          | O-1TURN           | FROM OPPOSITE DIRECTION - ONE TURN, ONE STRAIGHT  |
| I          | O-1STOP           | FROM OPPOSITE DIRECTION - ONE STOPPED             |
| J          | O-OTHER           | FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING  |

# DRIVER LICENSE CODE TRANSLATION LIST

| LIC<br>CODE | SHORT<br>DESC | LONG DESCRIPTION                       |
|-------------|---------------|----------------------------------------|
| 0           | NONE          | NOT LICENSED (HAD NEVER BEEN LICENSED) |
| 1           | OR-Y          | VALID OREGON LICENSE                   |
| 2           | OTH-Y         | VALID LICENSE, OTHER STATE OR COUNTRY  |
| 3           | SUSP          | SUSPENDED/REVOKED                      |

# DRIVER RESIDENCE CODE TRANSLATION LIST

| RES<br>CODE | SHORT<br>DESC | LONG DESCRIPTION                             |
|-------------|---------------|----------------------------------------------|
| 1           | OR<25         | OREGON RESIDENT WITHIN 25 MILE OF HOME       |
| 2           | OR>25         | OREGON RESIDENT 25 OR MORE MILES FROM HOME   |
| 3           | OR-?          | OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME |
| 4           | N-RES         | NON-RESIDENT                                 |
| 9           | UNK           | UNKNOWN IF OREGON RESIDENT                   |

# ERROR CODE TRANSLATION LIST

| ERROR<br>CODE | SHORT<br>DESCRIPTION | FULL DESCRIPTION                                                                            |
|---------------|----------------------|---------------------------------------------------------------------------------------------|
| 000           | NONE                 | NO ERROR                                                                                    |
| 001           | WIDE TRN             | WIDE TURN                                                                                   |
| 002           | CUT CORN             | CUT CORNER ON TURN                                                                          |
| 003           | FAIL TRN             | FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS                         |
| 004           | L IN TRF             | LEFT TURN IN FRONT OF ONCOMING TRAFFIC                                                      |
| 005           | L PROHIB             | LEFT TURN WHERE PROHIBITED                                                                  |
| 006           | FRM WRNG             | TURNED FROM WRONG LANE                                                                      |
| 007           | TO WRONG             | TURNED INTO WRONG LANE                                                                      |
| 008           | ILLEG U              | U-TURNED ILLEGALLY                                                                          |
| 009           | IMP STOP             | IMPROPERLY STOPPED IN TRAFFIC LANE                                                          |
| 010           | IMP SIG              | IMPROPER SIGNAL OR FAILURE TO SIGNAL                                                        |
| 011           | IMP BACK             | BACKING IMPROPERLY (NOT PARKING)                                                            |
| 012           | IMP PARK             | IMPROPERLY PARKED                                                                           |
| 013           | UNPARK               | IMPROPER START LEAVING PARKED POSITION                                                      |
| 014           | IMP STRT             | IMPROPER START FROM STOPPED POSITION                                                        |
| 015           | IMP LGHT             | IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)                                                  |
| 016           | INATTENT             | INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)                                         |
| 017           | UNSF VEH             | DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)                                            |
| 018           | OTH PARK             | ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER |
| 019           | DIS DRIV             | DISREGARDED OTHER DRIVER'S SIGNAL                                                           |
| 020           | DIS SGNL             | DISREGARDED TRAFFIC SIGNAL                                                                  |
| 021           | RAN STOP             | DISREGARDED STOP SIGN OR FLASHING RED                                                       |
| 022           | DIS SIGN             | DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER                                          |
| 023           | DIS OFCR             | DISREGARDED POLICE OFFICER OR FLAGMAN                                                       |
| 024           | DIS EMER             | DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE                                           |
| 025           | DIS RR               | DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN                                               |
| 026           | REAR-END             | FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS                       |
| 027           | BIKE ROW             | DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST                                                 |
| 028           | NO ROW               | DID NOT HAVE RIGHT-OF-WAY                                                                   |
| 029           | PED ROW              | FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN                                                  |
| 030           | PAS CURV             | PASSING ON A CURVE                                                                          |
| 031           | PAS WRNG             | PASSING ON THE WRONG SIDE                                                                   |
| 032           | PAS TANG             | PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS                                            |
| 033           | PAS X-WK             | PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN                                          |
| 034           | PAS INTR             | PASSING AT INTERSECTION                                                                     |
| 035           | PAS HILL             | PASSING ON CREST OF HILL                                                                    |
| 036           | N/PAS ZN             | PASSING IN "NO PASSING" ZONE                                                                |
| 037           | PAS TRAF             | PASSING IN FRONT OF ONCOMING TRAFFIC                                                        |
| 038           | CUT-IN               | CUTTING IN (TWO LANES - TWO WAY ONLY)                                                       |
| 039           | WRNGSIDE             | DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)                                |
| 040           | THRU MED             | DRIVING THROUGH SAFETY ZONE OR OVER ISLAND                                                  |
| 041           | F/ST BUS             | FAILED TO STOP FOR SCHOOL BUS                                                               |

# ERROR CODE TRANSLATION LIST

| ERROR | SHORT       |                                                                     |
|-------|-------------|---------------------------------------------------------------------|
| CODE  | DESCRIPTION | FULL DESCRIPTION                                                    |
| 042   | F/SLO MV    | FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE                  |
| 043   | TO CLOSE    | FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)                 |
| 044   | STRDL LN    | STRADDLING OR DRIVING ON WRONG LANES                                |
| 045   | IMP CHG     | IMPROPER CHANGE OF TRAFFIC LANES                                    |
| 046   | WRNG WAY    | WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD               |
| 047   | BASCRULE    | DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)        |
| 048   | OPN DOOR    | OPENED DOOR INTO ADJACENT TRAFFIC LANE                              |
| 049   | IMPEDING    | IMPEDING TRAFFIC                                                    |
| 050   | SPEED       | DRIVING IN EXCESS OF POSTED SPEED                                   |
| 051   | RECKLESS    | RECKLESS DRIVING (PER PAR)                                          |
| 052   | CARELESS    | CARELESS DRIVING (PER PAR)                                          |
| 053   | RACING      | SPEED RACING (PER PAR)                                              |
| 054   | X N/SGNL    | CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT                 |
| 055   | X W/SGNL    | CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT                    |
| 056   | DIAGONAL    | CROSSING AT INTERSECTION - DIAGONALLY                               |
| 057   | BTWN INT    | CROSSING BETWEEN INTERSECTIONS                                      |
| 059   | W/TRAF-S    | WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC            |
| 060   | A/TRAF-S    | WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC          |
| 061   | W/TRAF-P    | WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC            |
| 062   | A/TRAF-P    | WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC          |
| 063   | PLAYINRD    | PLAYING IN STREET OR ROAD                                           |
| 064   | PUSH MV     | PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER                |
| 065   | WK IN RD    | WORKING IN ROADWAY OR ALONG SHOULDER                                |
| 070   | LAYON RD    | STANDING OR LYING IN ROADWAY                                        |
| 071   | NM IMP USE  | IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST                        |
| 073   | ELUDING     | ELUDING / ATTEMPT TO ELUDE                                          |
| 079   | F NEG CURV  | FAILED TO NEGOTIATE A CURVE                                         |
| 080   | FAIL LN     | FAILED TO MAINTAIN LANE                                             |
| 081   | OFF RD      | RAN OFF ROAD                                                        |
| 082   | NO CLEAR    | DRIVER MISJUDGED CLEARANCE                                          |
| 083   | OVRSTEER    | OVER-CORRECTING                                                     |
| 084   | NOT USED    | CODE NOT IN USE                                                     |
| 085   | OVRLOAD     | OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS |
| 097   | UNA DIS TC  | UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE |

EVENT CODE TRANSLATION LIST

| EVENT<br>CODE | SHORT<br>DESCRIPTION | LONG DESCRIPTION                                                                           |
|---------------|----------------------|--------------------------------------------------------------------------------------------|
| 001           | FEL/JUMP             | OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE                                   |
| 002           | INTERFER             | PASSENGER INTERFERED WITH DRIVER                                                           |
| 003           | BUG INTF             | ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER                                         |
| 004           | INDRCT PED           | PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)                                                |
| 005           | SUB-PED              | "SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.                                |
| 006           | INDRCT BIK           | PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)                                              |
| 007           | HITCHIKR             | HITCHHIKER (SOLICITING A RIDE)                                                             |
| 008           | PSNGR TOW            | PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE                              |
| 009           | ON/OFF V             | GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC |
| 010           | SUB OTRN             | OVERTURNED AFTER FIRST HARMFUL EVENT                                                       |
| 011           | MV PUSHD             | VEHICLE BEING PUSHED                                                                       |
| 012           | MV TOWED             | VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE                                           |
| 013           | FORCED               | VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN                  |
| 014           | SET MOTN             | VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)                          |
| 015           | RR ROW               | AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)                                            |
| 016           | LT RL ROW            | AT OR ON LIGHT-RAIL RIGHT-OF-WAY                                                           |
| 017           | RR HIT V             | TRAIN STRUCK VEHICLE                                                                       |
| 018           | V HIT RR             | VEHICLE STRUCK TRAIN                                                                       |
| 019           | HIT RR CAR           | VEHICLE STRUCK RAILROAD CAR ON ROADWAY                                                     |
| 020           | JACKKNIFE            | JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE                                  |
| 021           | TRL OTRN             | TRAILER OR TOWED VEHICLE OVERTURNED                                                        |
| 022           | CN BROKE             | TRAILER CONNECTION BROKE                                                                   |
| 023           | DETACH TRL           | DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT                     |
| 024           | V DOOR OPN           | VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE                                             |
| 025           | WHEELOFF             | WHEEL CAME OFF                                                                             |
| 026           | HOOD UP              | HOOD FLEW UP                                                                               |
| 028           | LOAD SHIFT           | LOST LOAD, LOAD MOVED OR SHIFTED                                                           |
| 029           | TIREFAIL             | TIRE FAILURE                                                                               |
| 030           | PET                  | PET: CAT, DOG AND SIMILAR                                                                  |
| 031           | LVSTOCK              | STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.                                                 |
| 032           | HORSE                | HORSE, MULE, OR DONKEY                                                                     |
| 033           | HRSE&RID             | HORSE AND RIDER                                                                            |
| 034           | GAME                 | WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)                                        |
| 035           | DEER ELK             | DEER OR ELK, WAPITI                                                                        |
| 036           | ANML VEH             | ANIMAL-DRAWN VEHICLE                                                                       |
| 037           | CULVERT              | CULVERT, OPEN LOW OR HIGH MANHOLE                                                          |
| 038           | ATENUATN             | IMPACT ATTENUATOR                                                                          |
| 039           | PK METER             | PARKING METER                                                                              |
| 040           | CURB                 | CURB (ALSO NARROW SIDEWALKS ON BRIDGES)                                                    |
| 041           | JIGGLE               | JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION                                             |
| 042           | GDRL END             | LEADING EDGE OF GUARDRAIL                                                                  |
| 043           | GARDRAIL             | GUARD RAIL (NOT METAL MEDIAN BARRIER)                                                      |
| 044           | BARRIER              | MEDIAN BARRIER (RAISED OR METAL)                                                           |
| 045           | WALL                 | RETAINING WALL OR TUNNEL WALL                                                              |
| 046           | BR RAIL              | BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)                                          |
| 047           | BR ABUTMNT           | BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)                                        |
| 048           | BR COLUMN            | BRIDGE PILLAR OR COLUMN                                                                    |
| 049           | BR GIRDR             | BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)                                       |
| 050           | ISLAND               | TRAFFIC RAISED ISLAND                                                                      |
| 051           | GORE                 | GORE                                                                                       |
| 052           | POLE UNK             | POLE - TYPE UNKNOWN                                                                        |
| 053           | POLE UTL             | POLE - POWER OR TELEPHONE                                                                  |
| 054           | ST LIGHT             | POLE - STREET LIGHT ONLY                                                                   |
| 055           | TRF SGNL             | POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY                                                  |
| 056           | SGN BRDG             | POLE - SIGN BRIDGE                                                                         |
| 057           | STOPSIGN             | STOP OR YIELD SIGN                                                                         |
| 058           | OTH SIGN             | OTHER SIGN, INCLUDING STREET SIGNS                                                         |
| 059           | HYDRANT              | HYDRANT                                                                                    |

# EVENT CODE TRANSLATION LIST

| EVENT<br>CODE | SHORT<br>DESCRIPTION | LONG DESCRIPTION                                                                 |
|---------------|----------------------|----------------------------------------------------------------------------------|
| 060           | MARKER               | DELINEATOR OR MARKER (REFLECTOR POSTS)                                           |
| 061           | MAILBOX              | MAILBOX                                                                          |
| 062           | TREE                 | TREE, STUMP OR SHRUBS                                                            |
| 063           | VEG OHED             | TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.                                   |
| 064           | WIRE/CBL             | WIRE OR CABLE ACROSS OR OVER THE ROAD                                            |
| 065           | TEMP SGN             | TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.                                        |
| 066           | PERM SGN             | PERMANENT SIGN OR BARRICADE IN/OFF ROAD                                          |
| 067           | SLIDE                | SLIDES, FALLEN OR FALLING ROCKS                                                  |
| 068           | FRGN OBJ             | FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)                                  |
| 069           | EQP WORK             | EQUIPMENT WORKING IN/OFF ROAD                                                    |
| 070           | OTH EQP              | OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)                   |
| 071           | MAIN EQP             | WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT                          |
| 072           | OTHER WALL           | ROCK, BRICK OR OTHER SOLID WALL                                                  |
| 073           | IRRGL PVMT           | OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)          |
| 074           | OVERHD OBJ           | OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE              |
| 075           | CAVE IN              | BRIDGE OR ROAD CAVE IN                                                           |
| 076           | HI WATER             | HIGH WATER                                                                       |
| 077           | SNO BANK             | SNOW BANK                                                                        |
| 078           | LO-HI EDGE           | LOW OR HIGH SHOULDER AT PAVEMENT EDGE                                            |
| 079           | DITCH                | CUT SLOPE OR DITCH EMBANKMENT                                                    |
| 080           | OBJ FRM MV           | STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS) |
| 081           | FLY-OBJ              | STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)   |
| 082           | VEH HID              | VEHICLE OBSCURED VIEW                                                            |
| 083           | VEG HID              | VEGETATION OBSCURED VIEW                                                         |
| 084           | BLDG HID             | VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.                                  |
| 085           | WIND GUST            | WIND GUST                                                                        |
| 086           | IMMERSED             | VEHICLE IMMERSED IN BODY OF WATER                                                |
| 087           | FIRE/EXP             | FIRE OR EXPLOSION                                                                |
| 088           | FENC/BLD             | FENCE OR BUILDING, ETC.                                                          |
| 089           | OTHR CRASH           | CRASH RELATED TO ANOTHER SEPARATE CRASH                                          |
| 090           | TO 1 SIDE            | TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE                        |
| 091           | BUILDING             | BUILDING OR OTHER STRUCTURE                                                      |
| 092           | PHANTOM              | OTHER (PHANTOM) NON-CONTACT VEHICLE                                              |
| 093           | CELL PHONE           | CELL PHONE (ON PAR OR DRIVER IN USE)                                             |
| 094           | VIOL GDL             | TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM                             |
| 095           | GUY WIRE             | GUY WIRE                                                                         |
| 096           | BERM                 | BERM (EARTHEN OR GRAVEL MOUND)                                                   |
| 097           | GRAVEL               | GRAVEL IN ROADWAY                                                                |
| 098           | ABR EDGE             | ABRUPT EDGE                                                                      |
| 099           | CELL WTNSD           | CELL PHONE USE WITNESSED BY OTHER PARTICIPANT                                    |
| 100           | UNK FIXD             | FIXED OBJECT, UNKNOWN TYPE.                                                      |
| 101           | OTHER OBJ            | NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE                                          |
| 102           | TEXTING              | TEXTING                                                                          |
| 103           | WZ WORKER            | WORK ZONE WORKER                                                                 |
| 104           | ON VEHICLE           | PASSENGER RIDING ON VEHICLE EXTERIOR                                             |
| 105           | PEDAL PSGR           | PASSENGER RIDING ON PEDALCYCLE                                                   |
| 106           | MAN WHLCHR           | PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR                                           |
| 107           | MTR WHLCHR           | PEDESTRIAN IN MOTORIZED WHEELCHAIR                                               |
| 108           | OFFICER              | LAW ENFORCEMENT / POLICE OFFICER                                                 |
| 109           | SUB-BIKE             | "SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.                   |
| 110           | N-MTR                | NON-MOTORIST STRUCK VEHICLE                                                      |
| 111           | S CAR VS V           | STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE             |
| 112           | V VS S CAR           | VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)             |
| 113           | S CAR ROW            | AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY                                      |
| 114           | RR EQUIP             | VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS                          |
| 115           | DSTRCT GPS           | DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE                                    |
| 116           | DSTRCT OTH           | DISTRACTED BY OTHER ELECTRONIC DEVICE                                            |
| 117           | RR GATE              | RAIL CROSSING DROP-ARM GATE                                                      |

EVENT CODE TRANSLATION LIST

| EVENT<br>CODE | SHORT<br>DESCRIPTION | LONG DESCRIPTION                                                            |
|---------------|----------------------|-----------------------------------------------------------------------------|
| 118           | EXPNSN JNT           | EXPANSION JOINT                                                             |
| 119           | JERSEY BAR           | JERSEY BARRIER                                                              |
| 120           | WIRE BAR             | WIRE OR CABLE MEDIAN BARRIER                                                |
| 121           | FENCE                | FENCE                                                                       |
| 123           | OBJ IN VEH           | LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT                                     |
| 124           | SLIPPERY             | SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL) |
| 125           | SHLDR                | SHOULDER GAVE WAY                                                           |
| 126           | BOULDER              | ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)                               |
| 127           | LAND SLIDE           | ROCK SLIDE OR LAND SLIDE                                                    |
| 128           | CURVE INV            | CURVE PRESENT AT CRASH LOCATION                                             |
| 129           | HILL INV             | VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION                             |
| 130           | CURVE HID            | VIEW OBSCURED BY CURVE                                                      |
| 131           | HILL HID             | VIEW OBSCURED BY VERTICAL GRADE / HILL                                      |
| 132           | WINDOW HID           | VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS                                  |
| 133           | SPRAY HID            | VIEW OBSCURED BY WATER SPRAY                                                |

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

| FUNC<br>CLASS | DESCRIPTION                                       |
|---------------|---------------------------------------------------|
| 01            | RURAL PRINCIPAL ARTERIAL - INTERSTATE             |
| 02            | RURAL PRINCIPAL ARTERIAL - OTHER                  |
| 06            | RURAL MINOR ARTERIAL                              |
| 07            | RURAL MAJOR COLLECTOR                             |
| 08            | RURAL MINOR COLLECTOR                             |
| 09            | RURAL LOCAL                                       |
| 11            | URBAN PRINCIPAL ARTERIAL - INTERSTATE             |
| 12            | URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP |
| 14            | URBAN PRINCIPAL ARTERIAL - OTHER                  |
| 16            | URBAN MINOR ARTERIAL                              |
| 17            | URBAN COLLECTOR                                   |
| 19            | URBAN LOCAL                                       |
| 78            | UNKNOWN RURAL SYSTEM                              |
| 79            | UNKNOWN RURAL NON-SYSTEM                          |
| 98            | UNKNOWN URBAN SYSTEM                              |
| 99            | UNKNOWN URBAN NON-SYSTEM                          |

HIGHWAY COMPONENT TRANSLATION LIST

| CODE | DESCRIPTION            |
|------|------------------------|
| 0    | MAINLINE STATE HIGHWAY |
| 1    | COUPLET                |
| 3    | FRONTAGE ROAD          |
| 6    | CONNECTION             |
| 8    | HIGHWAY - OTHER        |

INJURY SEVERITY CODE TRANSLATION LIST

| CODE | SHORT<br>DESC | LONG DESCRIPTION                               |
|------|---------------|------------------------------------------------|
| 1    | KILL          | FATAL INJURY                                   |
| 2    | INJA          | INCAPACITATING INJURY - BLEEDING, BROKEN BONES |
| 3    | INJB          | NON-INCAPACITATING INJURY                      |
| 4    | INJC          | POSSIBLE INJURY - COMPLAINT OF PAIN            |
| 5    | PRI           | DIED PRIOR TO CRASH                            |
| 7    | NO<5          | NO INJURY - 0 TO 4 YEARS OF AGE                |

LIGHT CONDITION CODE TRANSLATION LIST

| CODE | SHORT<br>DESC | LONG DESCRIPTION              |
|------|---------------|-------------------------------|
| 0    | UNK           | UNKNOWN                       |
| 1    | DAY           | DAYLIGHT                      |
| 2    | DLIT          | DARKNESS - WITH STREET LIGHTS |
| 3    | DARK          | DARKNESS - NO STREET LIGHTS   |
| 4    | DAWN          | DAWN (TWILIGHT)               |
| 5    | DUSK          | DUSK (TWILIGHT)               |

MEDIAN TYPE CODE TRANSLATION LIST

| CODE | SHORT<br>DESC | LONG DESCRIPTION             |
|------|---------------|------------------------------|
| 0    | NONE          | NO MEDIAN                    |
| 1    | RSDMD         | SOLID MEDIAN BARRIER         |
| 2    | DIVMD         | EARTH, GRASS OR PAVED MEDIAN |

MILEAGE TYPE CODE TRANSLATION LIST

| CODE | LONG DESCRIPTION |
|------|------------------|
| 0    | REGULAR MILEAGE  |
| T    | TEMPORARY        |
| Y    | SPUR             |
| Z    | OVERLAPPING      |

# MOVEMENT TYPE CODE TRANSLATION LIST

| CODE | SHORT<br>DESC | LONG DESCRIPTION    |
|------|---------------|---------------------|
| 0    | UNK           | UNKNOWN             |
| 1    | STRGHT        | STRAIGHT AHEAD      |
| 2    | TURN-R        | TURNING RIGHT       |
| 3    | TURN-L        | TURNING LEFT        |
| 4    | U-TURN        | MAKING A U-TURN     |
| 5    | BACK          | BACKING             |
| 6    | STOP          | STOPPED IN TRAFFIC  |
| 7    | PRKD-P        | PARKED - PROPERLY   |
| 8    | PRKD-I        | PARKED - IMPROPERLY |

# PARTICIPANT TYPE CODE TRANSLATION LIST

| CODE | SHORT<br>DESC | LONG DESCRIPTION                            |
|------|---------------|---------------------------------------------|
| 0    | OCC           | UNKNOWN OCCUPANT TYPE                       |
| 1    | DRVR          | DRIVER                                      |
| 2    | PSNG          | PASSENGER                                   |
| 3    | PED           | PEDESTRIAN                                  |
| 4    | CONV          | PEDESTRIAN USING A PEDESTRIAN CONVEYANCE    |
| 5    | PTOW          | PEDESTRIAN TOWING OR TRAILERING AN OBJECT   |
| 6    | BIKE          | PEDALCYCLIST                                |
| 7    | BTOW          | PEDALCYCLIST TOWING OR TRAILERING AN OBJECT |
| 8    | PRKD          | OCCUPANT OF A PARKED MOTOR VEHICLE          |
| 9    | UNK           | UNKNOWN TYPE OF NON-MOTORIST                |

# PEDESTRIAN LOCATION CODE TRANSLATION LIST

| CODE | LONG DESCRIPTION                                  |
|------|---------------------------------------------------|
| 00   | AT INTERSECTION - NOT IN ROADWAY                  |
| 01   | AT INTERSECTION - INSIDE CROSSWALK                |
| 02   | AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK   |
| 03   | AT INTERSECTION - IN ROADWAY, XWALK AVAILABLE     |
| 04   | NOT AT INTERSECTION - IN ROADWAY                  |
| 05   | NOT AT INTERSECTION - ON SHOULDER                 |
| 06   | NOT AT INTERSECTION - ON MEDIAN                   |
| 07   | NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY |
| 08   | NOT AT INTERSECTION - IN BIKE PATH                |
| 09   | NOT-AT INTERSECTION - ON SIDEWALK                 |
| 10   | OUTSIDE TRAFFICWAY BOUNDARIES                     |
| 13   | AT INTERSECTION - IN BIKE LANE                    |
| 15   | NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK  |
| 18   | OTHER, NOT IN ROADWAY                             |
| 99   | UNKNOWN LOCATION                                  |

# TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

| CODE | SHORT DESC | LONG DESCRIPTION                                 |
|------|------------|--------------------------------------------------|
| 000  | NONE       | NO CONTROL                                       |
| 001  | TRF SIGNAL | TRAFFIC SIGNALS                                  |
| 002  | FLASHBCN-R | FLASHING BEACON - RED (STOP)                     |
| 003  | FLASHBCN-A | FLASHING BEACON - AMBER (SLOW)                   |
| 004  | STOP SIGN  | STOP SIGN                                        |
| 005  | SLOW SIGN  | SLOW SIGN                                        |
| 006  | REG-SIGN   | REGULATORY SIGN                                  |
| 007  | YIELD      | YIELD SIGN                                       |
| 008  | WARNING    | WARNING SIGN                                     |
| 009  | CURVE      | CURVE SIGN                                       |
| 010  | SCHL X-ING | SCHOOL CROSSING SIGN OR SPECIAL SIGNAL           |
| 011  | OFCCR/FLAG | POLICE OFFICER, FLAGMAN - SCHOOL PATROL          |
| 012  | BRDG-GATE  | BRIDGE GATE - BARRIER                            |
| 013  | TEMP-BARR  | TEMPORARY BARRIER                                |
| 014  | NO-PASS-ZN | NO PASSING ZONE                                  |
| 015  | ONE-WAY    | ONE-WAY STREET                                   |
| 016  | CHANNEL    | CHANNELIZATION                                   |
| 017  | MEDIAN BAR | MEDIAN BARRIER                                   |
| 018  | PILOT CAR  | PILOT CAR                                        |
| 019  | SP PED SIG | SPECIAL PEDESTRIAN SIGNAL                        |
| 020  | X-BUCK     | CROSSBUCK                                        |
| 021  | THR-GN-SIG | THROUGH GREEN ARROW OR SIGNAL                    |
| 022  | L-GRN-SIG  | LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL  |
| 023  | R-GRN-SIG  | RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL |
| 024  | WIGWAG     | WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE      |
| 025  | X-BUCK WRN | CROSSBUCK AND ADVANCE WARNING                    |
| 026  | WW W/ GATE | FLASHING LIGHTS WITH DROP-ARM GATES              |
| 027  | OVHRD SGNL | SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)      |
| 028  | SP RR STOP | SPECIAL RR STOP SIGN                             |
| 029  | ILUM GRD X | ILLUMINATED GRADE CROSSING                       |
| 037  | RAMP METER | METERED RAMPS                                    |
| 038  | RUMBLE STR | RUMBLE STRIP                                     |
| 090  | L-TURN REF | LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)       |
| 091  | R-TURN ALL | RIGHT TURN AT ALL TIMES SIGN, ETC.               |
| 092  | EMR SGN/FL | EMERGENCY SIGNS OR FLARES                        |
| 093  | ACCEL LANE | ACCELERATION OR DECELERATION LANES               |
| 094  | R-TURN PRO | RIGHT TURN PROHIBITED ON RED AFTER STOPPING      |

# ROAD CHARACTER CODE TRANSLATION LIST

| CODE | SHORT<br>DESC | LONG DESCRIPTION         |
|------|---------------|--------------------------|
| 0    | UNK           | UNKNOWN                  |
| 1    | INTER         | INTERSECTION             |
| 2    | ALLEY         | DRIVEWAY OR ALLEY        |
| 3    | STRGHT        | STRAIGHT ROADWAY         |
| 4    | TRANS         | TRANSITION               |
| 5    | CURVE         | CURVE (HORIZONTAL CURVE) |
| 6    | OPENAC        | OPEN ACCESS OR TURNOUT   |
| 7    | GRADE         | GRADE (VERTICAL CURVE)   |
| 8    | BRIDGE        | BRIDGE STRUCTURE         |
| 9    | TUNNEL        | TUNNEL                   |

|     |            |                              |
|-----|------------|------------------------------|
| 095 | BUS STPSGN | BUS STOP SIGN AND RED LIGHTS |
| 099 | UNKNOWN    | UNKNOWN OR NOT DEFINITE      |

VEHICLE TYPE CODE TRANSLATION LIST

| CODE | SHORT DESC | LONG DESCRIPTION                                  |
|------|------------|---------------------------------------------------|
| 01   | PSNGR CAR  | PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.       |
| 02   | BOBTAIL    | TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)          |
| 03   | FARM TRCTR | FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT     |
| 04   | SEMI TOW   | TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW     |
| 05   | TRUCK      | TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.        |
| 06   | MOPED      | MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE |
| 07   | SCHL BUS   | SCHOOL BUS (INCLUDES VAN)                         |
| 08   | OTH BUS    | OTHER BUS                                         |
| 09   | MTRCYCLE   | MOTORCYCLE, DIRT BIKE                             |
| 10   | OTHER      | OTHER: FORKLIFT, BACKHOE, ETC.                    |
| 11   | MOTRHOME   | MOTORHOME                                         |
| 12   | TROLLEY    | MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)     |
| 13   | ATV        | ATV                                               |
| 14   | MTRSCTR    | MOTORIZED SCOOTER (STANDING)                      |
| 15   | SNOWMOBILE | SNOWMOBILE                                        |
| 99   | UNKNOWN    | UNKNOWN VEHICLE TYPE                              |

WEATHER CONDITION CODE TRANSLATION LIST

| CODE | SHORT DESC | LONG DESCRIPTION |
|------|------------|------------------|
| 0    | UNK        | UNKNOWN          |
| 1    | CLR        | CLEAR            |
| 2    | CLD        | CLOUDY           |
| 3    | RAIN       | RAIN             |
| 4    | SLT        | SLEET            |
| 5    | FOG        | FOG              |
| 6    | SNOW       | SNOW             |
| 7    | DUST       | DUST             |
| 8    | SMOK       | SMOKE            |
| 9    | ASH        | ASH              |

**Appendix E**  
Year 2017 Background  
Traffic Level-of-Service  
Worksheets

The Cove  
1: McLoughlin Blvd & Dunes Dr

Background AM Peak Hour

7/27/2015

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Volume (vph)                      | 25                                                                                | 7                                                                                 | 66                                                                                | 142                                                                               | 6                                                                                 | 57                                                                                | 56                                                                                  | 1573                                                                                | 69                                                                                  | 92                                                                                  | 1388                                                                                | 108                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.91                                                                                |                                                                                     | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                                | 0.99                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1733                                                                              | 1502                                                                              |                                                                                   | 1751                                                                              | 1501                                                                              |                                                                                   | 1656                                                                                | 4868                                                                                |                                                                                     | 1787                                                                                | 4893                                                                                | 1482                                                                                |
| Flt Permitted                     | 0.71                                                                              | 1.00                                                                              |                                                                                   | 0.70                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1298                                                                              | 1502                                                                              |                                                                                   | 1298                                                                              | 1501                                                                              |                                                                                   | 1656                                                                                | 4868                                                                                |                                                                                     | 1787                                                                                | 4893                                                                                | 1482                                                                                |
| 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)                   | 28                                                                                | 8                                                                                 | 73                                                                                | 158                                                                               | 7                                                                                 | 63                                                                                | 62                                                                                  | 1748                                                                                | 77                                                                                  | 102                                                                                 | 1542                                                                                | 120                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 61                                                                                | 0                                                                                 | 0                                                                                 | 53                                                                                | 0                                                                                 | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 27                                                                                  |
| Lane Group Flow (vph)             | 28                                                                                | 20                                                                                | 0                                                                                 | 158                                                                               | 17                                                                                | 0                                                                                 | 62                                                                                  | 1821                                                                                | 0                                                                                   | 102                                                                                 | 1542                                                                                | 93                                                                                  |
| Confl. Peds. (#/hr)               | 3                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Heavy Vehicles (%)                | 4%                                                                                | 0%                                                                                | 9%                                                                                | 3%                                                                                | 0%                                                                                | 9%                                                                                | 9%                                                                                  | 6%                                                                                  | 3%                                                                                  | 1%                                                                                  | 6%                                                                                  | 9%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 14.7                                                                              | 14.7                                                                              |                                                                                   | 14.7                                                                              | 14.7                                                                              |                                                                                   | 7.2                                                                                 | 53.9                                                                                |                                                                                     | 8.6                                                                                 | 55.3                                                                                | 55.3                                                                                |
| Effective Green, g (s)            | 14.7                                                                              | 14.7                                                                              |                                                                                   | 14.7                                                                              | 14.7                                                                              |                                                                                   | 7.2                                                                                 | 53.9                                                                                |                                                                                     | 8.6                                                                                 | 55.3                                                                                | 55.3                                                                                |
| Actuated g/C Ratio                | 0.16                                                                              | 0.16                                                                              |                                                                                   | 0.16                                                                              | 0.16                                                                              |                                                                                   | 0.08                                                                                | 0.60                                                                                |                                                                                     | 0.10                                                                                | 0.61                                                                                | 0.61                                                                                |
| Clearance Time (s)                | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.3                                                                                 | 4.8                                                                                 |                                                                                     | 2.3                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                | 212                                                                               | 245                                                                               |                                                                                   | 212                                                                               | 245                                                                               |                                                                                   | 132                                                                                 | 2915                                                                                |                                                                                     | 170                                                                                 | 3006                                                                                | 910                                                                                 |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | 0.04                                                                                | c0.37                                                                               |                                                                                     | 0.06                                                                                | c0.32                                                                               |                                                                                     |
| v/s Ratio Perm                    | 0.02                                                                              |                                                                                   |                                                                                   | c0.12                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.06                                                                                |
| v/c Ratio                         | 0.13                                                                              | 0.08                                                                              |                                                                                   | 0.75                                                                              | 0.07                                                                              |                                                                                   | 0.47                                                                                | 0.62                                                                                |                                                                                     | 0.60                                                                                | 0.51                                                                                | 0.10                                                                                |
| Uniform Delay, d1                 | 32.2                                                                              | 31.9                                                                              |                                                                                   | 35.9                                                                              | 31.9                                                                              |                                                                                   | 39.6                                                                                | 11.6                                                                                |                                                                                     | 39.0                                                                                | 9.8                                                                                 | 7.1                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.67                                                                                | 0.35                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.2                                                                               | 0.1                                                                               |                                                                                   | 12.6                                                                              | 0.1                                                                               |                                                                                   | 0.7                                                                                 | 0.5                                                                                 |                                                                                     | 4.3                                                                                 | 0.6                                                                                 | 0.2                                                                                 |
| Delay (s)                         | 32.4                                                                              | 32.0                                                                              |                                                                                   | 48.5                                                                              | 32.0                                                                              |                                                                                   | 27.3                                                                                | 4.6                                                                                 |                                                                                     | 43.4                                                                                | 10.4                                                                                | 7.4                                                                                 |
| Level of Service                  | C                                                                                 | C                                                                                 |                                                                                   | D                                                                                 | C                                                                                 |                                                                                   | C                                                                                   | A                                                                                   |                                                                                     | D                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 32.1                                                                              |                                                                                   |                                                                                   | 43.4                                                                              |                                                                                   |                                                                                     | 5.3                                                                                 |                                                                                     |                                                                                     | 12.1                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.65                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                              |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 12.8                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.3%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Background AM Peak Hour

7/27/2015

|                                   |                                                                                    |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                                                                                                                 | WBR                                                                               | NBT                                                                                                                                                                                                                                                   | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                                                                                                   |
| Lane Configurations               |   |  |    |  |  |    |
| Volume (vph)                      | 341                                                                                                                                                                 | 394                                                                               | 1427                                                                                                                                                                                                                                                  | 259                                                                               | 546                                                                               | 1046                                                                                                                                                                                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  |
| Total Lost time (s)               | 5.5                                                                                                                                                                 | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Util. Factor                 | 0.97                                                                                                                                                                | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Frpb, ped/bikes                   | 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                                                                                                                                                                                                                                                  |
| Frt                               | 1.00                                                                                                                                                                | 0.85                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.85                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flt Protected                     | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (prot)                 | 3155                                                                                                                                                                | 1538                                                                              | 4940                                                                                                                                                                                                                                                  | 1451                                                                              | 1752                                                                              | 4940                                                                                                                                                                                                                                                  |
| Flt Permitted                     | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (perm)                 | 3155                                                                                                                                                                | 1538                                                                              | 4940                                                                                                                                                                                                                                                  | 1451                                                                              | 1752                                                                              | 4940                                                                                                                                                                                                                                                  |
| Peak-hour factor, PHF             | 0.91                                                                                                                                                                | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                  | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Adj. Flow (vph)                   | 375                                                                                                                                                                 | 433                                                                               | 1568                                                                                                                                                                                                                                                  | 285                                                                               | 600                                                                               | 1149                                                                                                                                                                                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     |
| Lane Group Flow (vph)             | 375                                                                                                                                                                 | 433                                                                               | 1568                                                                                                                                                                                                                                                  | 285                                                                               | 600                                                                               | 1149                                                                                                                                                                                                                                                  |
| Confl. Bikes (#/hr)               |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                       | 1                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |
| Heavy Vehicles (%)                | 11%                                                                                                                                                                 | 5%                                                                                | 5%                                                                                                                                                                                                                                                    | 9%                                                                                | 3%                                                                                | 5%                                                                                                                                                                                                                                                    |
| Turn Type                         | Prot                                                                                                                                                                | pm+ov                                                                             | NA                                                                                                                                                                                                                                                    | Free                                                                              | Prot                                                                              | NA                                                                                                                                                                                                                                                    |
| Protected Phases                  | 4                                                                                                                                                                   | 5                                                                                 | 6                                                                                                                                                                                                                                                     |                                                                                   | 5                                                                                 | 2                                                                                                                                                                                                                                                     |
| Permitted Phases                  |                                                                                                                                                                     | 4                                                                                 |                                                                                                                                                                                                                                                       | Free                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Green, G (s)             | 14.5                                                                                                                                                                | 46.5                                                                              | 29.2                                                                                                                                                                                                                                                  | 90.0                                                                              | 32.0                                                                              | 65.2                                                                                                                                                                                                                                                  |
| Effective Green, g (s)            | 14.5                                                                                                                                                                | 46.5                                                                              | 29.2                                                                                                                                                                                                                                                  | 90.0                                                                              | 32.0                                                                              | 65.2                                                                                                                                                                                                                                                  |
| Actuated g/C Ratio                | 0.16                                                                                                                                                                | 0.52                                                                              | 0.32                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.36                                                                              | 0.72                                                                                                                                                                                                                                                  |
| Clearance Time (s)                | 5.5                                                                                                                                                                 | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |                                                                                   | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Vehicle Extension (s)             | 2.3                                                                                                                                                                 | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |                                                                                   | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Grp Cap (vph)                | 508                                                                                                                                                                 | 862                                                                               | 1602                                                                                                                                                                                                                                                  | 1451                                                                              | 622                                                                               | 3578                                                                                                                                                                                                                                                  |
| v/s Ratio Prot                    | c0.12                                                                                                                                                               | 0.18                                                                              | c0.32                                                                                                                                                                                                                                                 |                                                                                   | c0.34                                                                             | 0.23                                                                                                                                                                                                                                                  |
| v/s Ratio Perm                    |                                                                                                                                                                     | 0.10                                                                              |                                                                                                                                                                                                                                                       | 0.20                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |
| v/c Ratio                         | 0.74                                                                                                                                                                | 0.50                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.20                                                                              | 0.96                                                                              | 0.32                                                                                                                                                                                                                                                  |
| Uniform Delay, d1                 | 35.9                                                                                                                                                                | 14.2                                                                              | 30.1                                                                                                                                                                                                                                                  | 0.0                                                                               | 28.4                                                                              | 4.5                                                                                                                                                                                                                                                   |
| Progression Factor                | 1.00                                                                                                                                                                | 1.00                                                                              | 0.70                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.23                                                                              | 0.69                                                                                                                                                                                                                                                  |
| Incremental Delay, d2             | 5.1                                                                                                                                                                 | 0.3                                                                               | 17.3                                                                                                                                                                                                                                                  | 0.3                                                                               | 25.0                                                                              | 0.2                                                                                                                                                                                                                                                   |
| Delay (s)                         | 41.0                                                                                                                                                                | 14.5                                                                              | 38.3                                                                                                                                                                                                                                                  | 0.3                                                                               | 60.0                                                                              | 3.3                                                                                                                                                                                                                                                   |
| Level of Service                  | D                                                                                                                                                                   | B                                                                                 | D                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                 | A                                                                                                                                                                                                                                                     |
| Approach Delay (s)                | 26.8                                                                                                                                                                |                                                                                   | 32.5                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 22.7                                                                                                                                                                                                                                                  |
| Approach LOS                      | C                                                                                                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| HCM 2000 Control Delay            |                                                                                                                                                                     |                                                                                   | 27.6                                                                                                                                                                                                                                                  |                                                                                   | HCM 2000 Level of Service                                                         | C                                                                                                                                                                                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                                                                                                     |                                                                                   | 0.93                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Cycle Length (s)         |                                                                                                                                                                     |                                                                                   | 90.0                                                                                                                                                                                                                                                  |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                                                                                                                                                                                                  |
| Intersection Capacity Utilization |                                                                                                                                                                     |                                                                                   | 79.5%                                                                                                                                                                                                                                                 |                                                                                   | ICU Level of Service                                                              | D                                                                                                                                                                                                                                                     |
| Analysis Period (min)             |                                                                                                                                                                     |                                                                                   | 15                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| c Critical Lane Group             |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Background AM Peak Hour

7/27/2015

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 139                                                                               | 412                                                                               | 1167                                                                              | 798                                                                               | 201                                                                               | 1151                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.8                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 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                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 1597                                                                              | 1495                                                                              | 4803                                                                              | 1478                                                                              | 1671                                                                              | 4893                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 1597                                                                              | 1495                                                                              | 4803                                                                              | 1478                                                                              | 1671                                                                              | 4893                                                                              |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Adj. Flow (vph)                   | 149                                                                               | 443                                                                               | 1255                                                                              | 858                                                                               | 216                                                                               | 1238                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 322                                                                               | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 149                                                                               | 443                                                                               | 1255                                                                              | 536                                                                               | 216                                                                               | 1238                                                                              |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |
| Heavy Vehicles (%)                | 13%                                                                               | 8%                                                                                | 8%                                                                                | 7%                                                                                | 8%                                                                                | 6%                                                                                |
| Turn Type                         | Prot                                                                              | Free                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | Free                                                                              |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 13.0                                                                              | 90.0                                                                              | 49.2                                                                              | 49.2                                                                              | 13.5                                                                              | 66.7                                                                              |
| Effective Green, g (s)            | 13.0                                                                              | 90.0                                                                              | 49.2                                                                              | 49.2                                                                              | 13.5                                                                              | 66.7                                                                              |
| Actuated g/C Ratio                | 0.14                                                                              | 1.00                                                                              | 0.55                                                                              | 0.55                                                                              | 0.15                                                                              | 0.74                                                                              |
| Clearance Time (s)                | 5.5                                                                               |                                                                                   | 4.8                                                                               | 4.8                                                                               | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               |                                                                                   | 4.8                                                                               | 4.8                                                                               | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 230                                                                               | 1495                                                                              | 2625                                                                              | 807                                                                               | 250                                                                               | 3626                                                                              |
| v/s Ratio Prot                    | c0.09                                                                             |                                                                                   | 0.26                                                                              |                                                                                   | c0.13                                                                             | 0.25                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.30                                                                              |                                                                                   | c0.36                                                                             |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.65                                                                              | 0.30                                                                              | 0.48                                                                              | 0.66                                                                              | 0.86                                                                              | 0.34                                                                              |
| Uniform Delay, d1                 | 36.3                                                                              | 0.0                                                                               | 12.5                                                                              | 14.5                                                                              | 37.4                                                                              | 4.0                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.70                                                                              | 0.73                                                                              |
| Incremental Delay, d2             | 5.1                                                                               | 0.5                                                                               | 0.6                                                                               | 4.3                                                                               | 23.4                                                                              | 0.2                                                                               |
| Delay (s)                         | 41.5                                                                              | 0.5                                                                               | 13.1                                                                              | 18.8                                                                              | 49.5                                                                              | 3.2                                                                               |
| Level of Service                  | D                                                                                 | A                                                                                 | B                                                                                 | B                                                                                 | D                                                                                 | A                                                                                 |
| Approach Delay (s)                | 10.8                                                                              |                                                                                   | 15.4                                                                              |                                                                                   |                                                                                   | 10.1                                                                              |
| Approach LOS                      | B                                                                                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 12.9                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.70                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                              |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.9%                                                                             |                                                                                   | ICU Level of Service                                                              | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

The Cove  
4: OR 213 & Washington St/Clackamas River Dr

Background AM Peak Hour

7/27/2015

|                                   |  |  |                                                                                    |  |  |                                                                                    |  |                                                                                                                                                                          |  |  |                                                                                                                                                                          |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                                                                                                                 | WBL                                                                               | WBT                                                                               | WBR                                                                                                                                                                 | NBL                                                                               | NBT                                                                                                                                                                                                                                                         | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                                                                                                         | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |   |                                                                                   |                                                                                   |   |                                                                                   |    |  |                                                                                     |    |  |
| Volume (vph)                      | 0                                                                                 | 0                                                                                 | 60                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 380                                                                                                                                                                 | 0                                                                                 | 2290                                                                                                                                                                                                                                                        | 134                                                                                 | 0                                                                                   | 1500                                                                                                                                                                                                                                                        | 433                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                                                                                                        | 1900                                                                                |
| Total Lost time (s)               |                                                                                   |                                                                                   | 4.0                                                                                                                                                                 |                                                                                   |                                                                                   | 4.0                                                                                                                                                                 |                                                                                   | 6.0                                                                                                                                                                                                                                                         | 6.0                                                                                 |                                                                                     | 6.0                                                                                                                                                                                                                                                         | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   |                                                                                   | 0.88                                                                                                                                                                |                                                                                   |                                                                                   | 0.88                                                                                                                                                                |                                                                                   | 0.91                                                                                                                                                                                                                                                        | 1.00                                                                                |                                                                                     | 0.91                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Flt                               |                                                                                   |                                                                                   | 0.85                                                                                                                                                                |                                                                                   |                                                                                   | 0.85                                                                                                                                                                |                                                                                   | 1.00                                                                                                                                                                                                                                                        | 0.85                                                                                |                                                                                     | 1.00                                                                                                                                                                                                                                                        | 0.85                                                                                |
| Flt Protected                     |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                   | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |                                                                                     | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   |                                                                                   | 2632                                                                                                                                                                |                                                                                   |                                                                                   | 2493                                                                                                                                                                |                                                                                   | 4893                                                                                                                                                                                                                                                        | 1357                                                                                |                                                                                     | 4893                                                                                                                                                                                                                                                        | 1404                                                                                |
| Flt Permitted                     |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                   | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |                                                                                     | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   |                                                                                   | 2632                                                                                                                                                                |                                                                                   |                                                                                   | 2493                                                                                                                                                                |                                                                                   | 4893                                                                                                                                                                                                                                                        | 1357                                                                                |                                                                                     | 4893                                                                                                                                                                                                                                                        | 1404                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 0                                                                                 | 65                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 413                                                                                                                                                                 | 0                                                                                 | 2489                                                                                                                                                                                                                                                        | 146                                                                                 | 0                                                                                   | 1630                                                                                                                                                                                                                                                        | 471                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 56                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 63                                                                                                                                                                  | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 36                                                                                  | 0                                                                                   | 0                                                                                                                                                                                                                                                           | 105                                                                                 |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 10                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 350                                                                                                                                                                 | 0                                                                                 | 2489                                                                                                                                                                                                                                                        | 110                                                                                 | 0                                                                                   | 1630                                                                                                                                                                                                                                                        | 366                                                                                 |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 8%                                                                                                                                                                  | 0%                                                                                | 0%                                                                                | 14%                                                                                                                                                                 | 0%                                                                                | 6%                                                                                                                                                                                                                                                          | 19%                                                                                 | 0%                                                                                  | 6%                                                                                                                                                                                                                                                          | 15%                                                                                 |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                                                                                                                |                                                                                   |                                                                                   | Perm                                                                                                                                                                |                                                                                   | NA                                                                                                                                                                                                                                                          | Perm                                                                                |                                                                                     | NA                                                                                                                                                                                                                                                          | Perm                                                                                |
| Protected Phases                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   | 6                                                                                                                                                                                                                                                           |                                                                                     |                                                                                     | 2                                                                                                                                                                                                                                                           |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 1                                                                                                                                                                   |                                                                                   |                                                                                   | 5                                                                                                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             | 6                                                                                   |                                                                                     |                                                                                                                                                                                                                                                             | 2                                                                                   |
| Actuated Green, G (s)             |                                                                                   |                                                                                   | 19.0                                                                                                                                                                |                                                                                   |                                                                                   | 21.9                                                                                                                                                                |                                                                                   | 98.1                                                                                                                                                                                                                                                        | 98.1                                                                                |                                                                                     | 101.0                                                                                                                                                                                                                                                       | 101.0                                                                               |
| Effective Green, g (s)            |                                                                                   |                                                                                   | 19.0                                                                                                                                                                |                                                                                   |                                                                                   | 21.9                                                                                                                                                                |                                                                                   | 98.1                                                                                                                                                                                                                                                        | 98.1                                                                                |                                                                                     | 101.0                                                                                                                                                                                                                                                       | 101.0                                                                               |
| Actuated g/C Ratio                |                                                                                   |                                                                                   | 0.15                                                                                                                                                                |                                                                                   |                                                                                   | 0.17                                                                                                                                                                |                                                                                   | 0.75                                                                                                                                                                                                                                                        | 0.75                                                                                |                                                                                     | 0.78                                                                                                                                                                                                                                                        | 0.78                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.0                                                                                                                                                                 |                                                                                   |                                                                                   | 4.0                                                                                                                                                                 |                                                                                   | 6.0                                                                                                                                                                                                                                                         | 6.0                                                                                 |                                                                                     | 6.0                                                                                                                                                                                                                                                         | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 2.3                                                                                                                                                                 |                                                                                   |                                                                                   | 2.3                                                                                                                                                                 |                                                                                   | 4.8                                                                                                                                                                                                                                                         | 4.8                                                                                 |                                                                                     | 4.8                                                                                                                                                                                                                                                         | 4.8                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   |                                                                                   | 384                                                                                                                                                                 |                                                                                   |                                                                                   | 419                                                                                                                                                                 |                                                                                   | 3692                                                                                                                                                                                                                                                        | 1024                                                                                |                                                                                     | 3801                                                                                                                                                                                                                                                        | 1090                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   | c0.51                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     | 0.33                                                                                                                                                                                                                                                        |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                                                                                                                |                                                                                   |                                                                                   | c0.14                                                                                                                                                               |                                                                                   |                                                                                                                                                                                                                                                             | 0.08                                                                                |                                                                                     |                                                                                                                                                                                                                                                             | 0.26                                                                                |
| v/c Ratio                         |                                                                                   |                                                                                   | 0.02                                                                                                                                                                |                                                                                   |                                                                                   | 0.83                                                                                                                                                                |                                                                                   | 0.67                                                                                                                                                                                                                                                        | 0.11                                                                                |                                                                                     | 0.43                                                                                                                                                                                                                                                        | 0.34                                                                                |
| Uniform Delay, d1                 |                                                                                   |                                                                                   | 47.6                                                                                                                                                                |                                                                                   |                                                                                   | 52.3                                                                                                                                                                |                                                                                   | 8.0                                                                                                                                                                                                                                                         | 4.3                                                                                 |                                                                                     | 4.9                                                                                                                                                                                                                                                         | 4.4                                                                                 |
| Progression Factor                |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                   | 1.25                                                                                                                                                                                                                                                        | 1.75                                                                                |                                                                                     | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   |                                                                                   | 0.0                                                                                                                                                                 |                                                                                   |                                                                                   | 13.0                                                                                                                                                                |                                                                                   | 0.4                                                                                                                                                                                                                                                         | 0.1                                                                                 |                                                                                     | 0.4                                                                                                                                                                                                                                                         | 0.8                                                                                 |
| Delay (s)                         |                                                                                   |                                                                                   | 47.6                                                                                                                                                                |                                                                                   |                                                                                   | 65.3                                                                                                                                                                |                                                                                   | 10.4                                                                                                                                                                                                                                                        | 7.6                                                                                 |                                                                                     | 5.2                                                                                                                                                                                                                                                         | 5.2                                                                                 |
| Level of Service                  |                                                                                   |                                                                                   | D                                                                                                                                                                   |                                                                                   |                                                                                   | E                                                                                                                                                                   |                                                                                   | B                                                                                                                                                                                                                                                           | A                                                                                   |                                                                                     | A                                                                                                                                                                                                                                                           | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 47.6                                                                              |                                                                                                                                                                     |                                                                                   | 65.3                                                                              |                                                                                                                                                                     |                                                                                   | 10.3                                                                                                                                                                                                                                                        |                                                                                     |                                                                                     | 5.2                                                                                                                                                                                                                                                         |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                                                                                                     |                                                                                   | E                                                                                 |                                                                                                                                                                     |                                                                                   | B                                                                                                                                                                                                                                                           |                                                                                     |                                                                                     | A                                                                                                                                                                                                                                                           |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 13.1                                                                                                                                                                |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                                                                                                           |                                                                                   |                                                                                                                                                                                                                                                             | B                                                                                   |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.70                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                                                                                                               |                                                                                   |                                                                                   | Sum of lost time (s)                                                                                                                                                |                                                                                   |                                                                                                                                                                                                                                                             | 10.0                                                                                |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 65.9%                                                                                                                                                               |                                                                                   |                                                                                   | ICU Level of Service                                                                                                                                                |                                                                                   |                                                                                                                                                                                                                                                             | C                                                                                   |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |

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|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 568                                                                               | 129                                                                               | 95                                                                                | 1957                                                                              | 1242                                                                              | 302                                                                               |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.4                                                                               | 4.0                                                                               | 4.0                                                                               | 6.0                                                                               | 6.0                                                                               | 5.4                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3273                                                                              | 1495                                                                              | 1703                                                                              | 3374                                                                              | 3406                                                                              | 1524                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3273                                                                              | 1495                                                                              | 1703                                                                              | 3374                                                                              | 3406                                                                              | 1524                                                                              |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Adj. Flow (vph)                   | 611                                                                               | 139                                                                               | 102                                                                               | 2104                                                                              | 1335                                                                              | 325                                                                               |
| RTOR Reduction (vph)              | 0                                                                                 | 29                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 79                                                                                |
| Lane Group Flow (vph)             | 611                                                                               | 110                                                                               | 102                                                                               | 2104                                                                              | 1335                                                                              | 247                                                                               |
| Heavy Vehicles (%)                | 7%                                                                                | 8%                                                                                | 6%                                                                                | 7%                                                                                | 6%                                                                                | 6%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | Prot                                                                              | NA                                                                                | NA                                                                                | pm+ov                                                                             |
| Protected Phases                  | 8                                                                                 | 1                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                 | 8                                                                                 |
| Permitted Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |
| Actuated Green, G (s)             | 26.0                                                                              | 42.0                                                                              | 16.0                                                                              | 92.6                                                                              | 72.6                                                                              | 98.6                                                                              |
| Effective Green, g (s)            | 26.0                                                                              | 42.0                                                                              | 16.0                                                                              | 92.6                                                                              | 72.6                                                                              | 98.6                                                                              |
| Actuated g/C Ratio                | 0.20                                                                              | 0.32                                                                              | 0.12                                                                              | 0.71                                                                              | 0.56                                                                              | 0.76                                                                              |
| Clearance Time (s)                | 5.4                                                                               | 4.0                                                                               | 4.0                                                                               | 6.0                                                                               | 6.0                                                                               | 5.4                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               | 4.8                                                                               | 2.3                                                                               |
| Lane Grp Cap (vph)                | 654                                                                               | 529                                                                               | 209                                                                               | 2403                                                                              | 1902                                                                              | 1219                                                                              |
| v/s Ratio Prot                    | c0.19                                                                             | 0.03                                                                              | 0.06                                                                              | c0.62                                                                             | 0.39                                                                              | 0.04                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.12                                                                              |
| v/c Ratio                         | 0.93                                                                              | 0.21                                                                              | 0.49                                                                              | 0.88                                                                              | 0.70                                                                              | 0.20                                                                              |
| Uniform Delay, d1                 | 51.2                                                                              | 31.9                                                                              | 53.2                                                                              | 14.3                                                                              | 20.8                                                                              | 4.5                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.74                                                                              | 0.14                                                                              |
| Incremental Delay, d2             | 20.4                                                                              | 0.1                                                                               | 1.0                                                                               | 4.9                                                                               | 2.0                                                                               | 0.0                                                                               |
| Delay (s)                         | 71.6                                                                              | 32.0                                                                              | 54.2                                                                              | 19.1                                                                              | 17.5                                                                              | 0.7                                                                               |
| Level of Service                  | E                                                                                 | C                                                                                 | D                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 |
| Approach Delay (s)                | 64.3                                                                              |                                                                                   |                                                                                   | 20.8                                                                              | 14.2                                                                              |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   | C                                                                                 | B                                                                                 |                                                                                   |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 25.5                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | C                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.92                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 15.4                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 79.8%                                                                             |                                                                                   | ICU Level of Service                                                              | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

The Cove  
1: McLoughlin Blvd & Dunes Dr

Background PM Peak Hour

7/27/2015

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Volume (vph)                      | 21                                                                                | 3                                                                                 | 55                                                                                | 258                                                                               | 8                                                                                 | 79                                                                                | 53                                                                                  | 1174                                                                                | 146                                                                                 | 142                                                                                 | 1564                                                                                | 195                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.91                                                                                |                                                                                     | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                                | 0.98                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1712                                                                              | 1545                                                                              |                                                                                   | 1780                                                                              | 1599                                                                              |                                                                                   | 1770                                                                                | 4950                                                                                |                                                                                     | 1787                                                                                | 5036                                                                                | 1562                                                                                |
| Flt Permitted                     | 0.69                                                                              | 1.00                                                                              |                                                                                   | 0.72                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1240                                                                              | 1545                                                                              |                                                                                   | 1345                                                                              | 1599                                                                              |                                                                                   | 1770                                                                                | 4950                                                                                |                                                                                     | 1787                                                                                | 5036                                                                                | 1562                                                                                |
| 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)                   | 22                                                                                | 3                                                                                 | 57                                                                                | 269                                                                               | 8                                                                                 | 82                                                                                | 55                                                                                  | 1223                                                                                | 152                                                                                 | 148                                                                                 | 1629                                                                                | 203                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 43                                                                                | 0                                                                                 | 0                                                                                 | 62                                                                                | 0                                                                                 | 0                                                                                   | 12                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 26                                                                                  |
| Lane Group Flow (vph)             | 22                                                                                | 17                                                                                | 0                                                                                 | 269                                                                               | 28                                                                                | 0                                                                                 | 55                                                                                  | 1363                                                                                | 0                                                                                   | 148                                                                                 | 1629                                                                                | 177                                                                                 |
| Confl. Peds. (#/hr)               | 6                                                                                 |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   | 6                                                                                 | 1                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Heavy Vehicles (%)                | 5%                                                                                | 0%                                                                                | 4%                                                                                | 1%                                                                                | 12%                                                                               | 0%                                                                                | 2%                                                                                  | 3%                                                                                  | 1%                                                                                  | 1%                                                                                  | 3%                                                                                  | 1%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 26.5                                                                              | 26.5                                                                              |                                                                                   | 26.5                                                                              | 26.5                                                                              |                                                                                   | 7.1                                                                                 | 57.2                                                                                |                                                                                     | 13.5                                                                                | 63.6                                                                                | 63.6                                                                                |
| Effective Green, g (s)            | 26.5                                                                              | 26.5                                                                              |                                                                                   | 26.5                                                                              | 26.5                                                                              |                                                                                   | 7.1                                                                                 | 57.2                                                                                |                                                                                     | 13.5                                                                                | 63.6                                                                                | 63.6                                                                                |
| Actuated g/C Ratio                | 0.24                                                                              | 0.24                                                                              |                                                                                   | 0.24                                                                              | 0.24                                                                              |                                                                                   | 0.06                                                                                | 0.52                                                                                |                                                                                     | 0.12                                                                                | 0.58                                                                                | 0.58                                                                                |
| Clearance Time (s)                | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.3                                                                                 | 4.8                                                                                 |                                                                                     | 2.3                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                | 298                                                                               | 372                                                                               |                                                                                   | 324                                                                               | 385                                                                               |                                                                                   | 114                                                                                 | 2574                                                                                |                                                                                     | 219                                                                                 | 2911                                                                                | 903                                                                                 |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | 0.03                                                                                | c0.28                                                                               |                                                                                     | c0.08                                                                               | c0.32                                                                               |                                                                                     |
| v/s Ratio Perm                    | 0.02                                                                              |                                                                                   |                                                                                   | c0.20                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.11                                                                                |
| v/c Ratio                         | 0.07                                                                              | 0.04                                                                              |                                                                                   | 0.83                                                                              | 0.07                                                                              |                                                                                   | 0.48                                                                                | 0.53                                                                                |                                                                                     | 0.68                                                                                | 0.56                                                                                | 0.20                                                                                |
| Uniform Delay, d1                 | 32.3                                                                              | 32.0                                                                              |                                                                                   | 39.6                                                                              | 32.3                                                                              |                                                                                   | 49.7                                                                                | 17.5                                                                                |                                                                                     | 46.2                                                                                | 14.5                                                                                | 11.0                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.47                                                                                | 0.39                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.1                                                                               | 0.0                                                                               |                                                                                   | 16.0                                                                              | 0.1                                                                               |                                                                                   | 0.6                                                                                 | 0.2                                                                                 |                                                                                     | 6.9                                                                                 | 0.8                                                                                 | 0.5                                                                                 |
| Delay (s)                         | 32.3                                                                              | 32.1                                                                              |                                                                                   | 55.7                                                                              | 32.3                                                                              |                                                                                   | 23.8                                                                                | 7.0                                                                                 |                                                                                     | 53.1                                                                                | 15.2                                                                                | 11.5                                                                                |
| Level of Service                  | C                                                                                 | C                                                                                 |                                                                                   | E                                                                                 | C                                                                                 |                                                                                   | C                                                                                   | A                                                                                   |                                                                                     | D                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 32.1                                                                              |                                                                                   |                                                                                   | 49.8                                                                              |                                                                                   |                                                                                     | 7.7                                                                                 |                                                                                     |                                                                                     | 17.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 17.3                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.65                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 12.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 68.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

c Critical Lane Group

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Background PM Peak Hour

7/27/2015

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 812                                                                               | 314                                                                               | 1174                                                                              | 224                                                                               | 507                                                                               | 1386                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.0                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 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                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3400                                                                              | 1583                                                                              | 5085                                                                              | 1518                                                                              | 1770                                                                              | 5085                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3400                                                                              | 1583                                                                              | 5085                                                                              | 1518                                                                              | 1770                                                                              | 5085                                                                              |
| Peak-hour factor, PHF             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Adj. Flow (vph)                   | 837                                                                               | 324                                                                               | 1210                                                                              | 231                                                                               | 523                                                                               | 1429                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 837                                                                               | 324                                                                               | 1210                                                                              | 231                                                                               | 523                                                                               | 1429                                                                              |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 2%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 30.9                                                                              | 72.9                                                                              | 22.8                                                                              | 110.0                                                                             | 42.0                                                                              | 68.8                                                                              |
| Effective Green, g (s)            | 30.9                                                                              | 72.9                                                                              | 22.8                                                                              | 110.0                                                                             | 42.0                                                                              | 68.8                                                                              |
| Actuated g/C Ratio                | 0.28                                                                              | 0.66                                                                              | 0.21                                                                              | 1.00                                                                              | 0.38                                                                              | 0.63                                                                              |
| Clearance Time (s)                | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               |                                                                                   | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               |                                                                                   | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 955                                                                               | 1106                                                                              | 1053                                                                              | 1518                                                                              | 675                                                                               | 3180                                                                              |
| v/s Ratio Prot                    | c0.25                                                                             | 0.11                                                                              | c0.24                                                                             |                                                                                   | c0.30                                                                             | 0.28                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.09                                                                              |                                                                                   | 0.15                                                                              |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.88                                                                              | 0.29                                                                              | 1.15                                                                              | 0.15                                                                              | 0.77                                                                              | 0.45                                                                              |
| Uniform Delay, d1                 | 37.7                                                                              | 7.8                                                                               | 43.6                                                                              | 0.0                                                                               | 29.8                                                                              | 10.7                                                                              |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 0.73                                                                              | 1.00                                                                              | 1.26                                                                              | 1.29                                                                              |
| Incremental Delay, d2             | 9.0                                                                               | 0.1                                                                               | 77.8                                                                              | 0.2                                                                               | 4.4                                                                               | 0.4                                                                               |
| Delay (s)                         | 46.7                                                                              | 7.8                                                                               | 109.6                                                                             | 0.2                                                                               | 42.1                                                                              | 14.3                                                                              |
| Level of Service                  | D                                                                                 | A                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | B                                                                                 |
| Approach Delay (s)                | 35.8                                                                              |                                                                                   | 92.1                                                                              |                                                                                   |                                                                                   | 21.7                                                                              |
| Approach LOS                      | D                                                                                 |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | C                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 47.6                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | D                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.90                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 94.0%                                                                             |                                                                                   | ICU Level of Service                                                              | F                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

c Critical Lane Group

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Background PM Peak Hour

7/27/2015

|                                   |  |  |                                                                                                                                                                      |  |  |                                                                                                                                                                                                                                                       |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                                                                                                   | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                                                                                                   |
| Lane Configurations               |  |  |    |  |  |    |
| Volume (vph)                      | 121                                                                               | 456                                                                               | 1012                                                                                                                                                                                                                                                  | 805                                                                               | 322                                                                               | 1825                                                                                                                                                                                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.85                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (prot)                 | 1656                                                                              | 1583                                                                              | 4988                                                                                                                                                                                                                                                  | 1482                                                                              | 1752                                                                              | 5036                                                                                                                                                                                                                                                  |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (perm)                 | 1656                                                                              | 1583                                                                              | 4988                                                                                                                                                                                                                                                  | 1482                                                                              | 1752                                                                              | 5036                                                                                                                                                                                                                                                  |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                                                                                                                                                                                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                                                                                                                                                                                  |
| Adj. Flow (vph)                   | 126                                                                               | 475                                                                               | 1054                                                                                                                                                                                                                                                  | 839                                                                               | 335                                                                               | 1901                                                                                                                                                                                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 262                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     |
| Lane Group Flow (vph)             | 126                                                                               | 475                                                                               | 1054                                                                                                                                                                                                                                                  | 577                                                                               | 335                                                                               | 1901                                                                                                                                                                                                                                                  |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       | 11                                                                                | 11                                                                                |                                                                                                                                                                                                                                                       |
| Heavy Vehicles (%)                | 9%                                                                                | 2%                                                                                | 4%                                                                                                                                                                                                                                                    | 4%                                                                                | 3%                                                                                | 3%                                                                                                                                                                                                                                                    |
| Turn Type                         | Prot                                                                              | Free                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                              | NA                                                                                                                                                                                                                                                    |
| Protected Phases                  | 4                                                                                 |                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                   | 5                                                                                 | 2                                                                                                                                                                                                                                                     |
| Permitted Phases                  |                                                                                   | Free                                                                              |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Green, G (s)             | 13.0                                                                              | 110.0                                                                             | 56.6                                                                                                                                                                                                                                                  | 56.6                                                                              | 26.1                                                                              | 86.7                                                                                                                                                                                                                                                  |
| Effective Green, g (s)            | 13.0                                                                              | 110.0                                                                             | 56.6                                                                                                                                                                                                                                                  | 56.6                                                                              | 26.1                                                                              | 86.7                                                                                                                                                                                                                                                  |
| Actuated g/C Ratio                | 0.12                                                                              | 1.00                                                                              | 0.51                                                                                                                                                                                                                                                  | 0.51                                                                              | 0.24                                                                              | 0.79                                                                                                                                                                                                                                                  |
| Clearance Time (s)                | 5.5                                                                               |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Vehicle Extension (s)             | 2.3                                                                               |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Grp Cap (vph)                | 195                                                                               | 1583                                                                              | 2566                                                                                                                                                                                                                                                  | 762                                                                               | 415                                                                               | 3969                                                                                                                                                                                                                                                  |
| v/s Ratio Prot                    | c0.08                                                                             |                                                                                   | 0.21                                                                                                                                                                                                                                                  |                                                                                   | c0.19                                                                             | 0.38                                                                                                                                                                                                                                                  |
| v/s Ratio Perm                    |                                                                                   | 0.30                                                                              |                                                                                                                                                                                                                                                       | c0.39                                                                             |                                                                                   |                                                                                                                                                                                                                                                       |
| v/c Ratio                         | 0.65                                                                              | 0.30                                                                              | 0.41                                                                                                                                                                                                                                                  | 0.76                                                                              | 0.81                                                                              | 0.48                                                                                                                                                                                                                                                  |
| Uniform Delay, d1                 | 46.3                                                                              | 0.0                                                                               | 16.4                                                                                                                                                                                                                                                  | 21.2                                                                              | 39.6                                                                              | 4.0                                                                                                                                                                                                                                                   |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.61                                                                              | 0.63                                                                                                                                                                                                                                                  |
| Incremental Delay, d2             | 6.0                                                                               | 0.5                                                                               | 0.5                                                                                                                                                                                                                                                   | 6.9                                                                               | 8.9                                                                               | 0.3                                                                                                                                                                                                                                                   |
| Delay (s)                         | 52.3                                                                              | 0.5                                                                               | 16.9                                                                                                                                                                                                                                                  | 28.2                                                                              | 33.1                                                                              | 2.9                                                                                                                                                                                                                                                   |
| Level of Service                  | D                                                                                 | A                                                                                 | B                                                                                                                                                                                                                                                     | C                                                                                 | C                                                                                 | A                                                                                                                                                                                                                                                     |
| Approach Delay (s)                | 11.3                                                                              |                                                                                   | 21.9                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 7.4                                                                                                                                                                                                                                                   |
| Approach LOS                      | B                                                                                 |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | A                                                                                                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 13.7                                                                                                                                                                                                                                                  |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                                                                                                                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.76                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                                                                                                                                                                                                 |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                                                                                                                                                                                                  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 76.1%                                                                                                                                                                                                                                                 |                                                                                   | ICU Level of Service                                                              | D                                                                                                                                                                                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |

The Cove  
4: OR 213 & Redland Rd

Background PM Peak Hour  
7/27/2015

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                    |  |  |                                                                                     |  |  |
| Volume (vph)                      | 0                                                                                 | 0                                                                                 | 188                                                                               | 0                                                                                 | 0                                                                                 | 419                                                                               | 0                                                                                  | 1707                                                                                | 186                                                                                 | 0                                                                                   | 2822                                                                                | 472                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                    | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                    | 0.91                                                                                | 1.00                                                                                |                                                                                     | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                    | 1.00                                                                                | 0.98                                                                                |                                                                                     | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                    | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                    | 1.00                                                                                | 0.85                                                                                |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                    | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   |                                                                                   | 2814                                                                              |                                                                                   |                                                                                   | 2842                                                                              |                                                                                    | 5036                                                                                | 1582                                                                                |                                                                                     | 4988                                                                                | 1521                                                                                |
| Flt Permitted                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                    | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   |                                                                                   | 2814                                                                              |                                                                                   |                                                                                   | 2842                                                                              |                                                                                    | 5036                                                                                | 1582                                                                                |                                                                                     | 4988                                                                                | 1521                                                                                |
| 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)                   | 0                                                                                 | 0                                                                                 | 196                                                                               | 0                                                                                 | 0                                                                                 | 436                                                                               | 0                                                                                  | 1778                                                                                | 194                                                                                 | 0                                                                                   | 2940                                                                                | 492                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 63                                                                                | 0                                                                                  | 0                                                                                   | 47                                                                                  | 0                                                                                   | 0                                                                                   | 81                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 142                                                                               | 0                                                                                 | 0                                                                                 | 373                                                                               | 0                                                                                  | 1778                                                                                | 147                                                                                 | 0                                                                                   | 2940                                                                                | 411                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                | 0%                                                                                | 1%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 4%                                                                                 | 3%                                                                                  | 0%                                                                                  | 0%                                                                                  | 4%                                                                                  | 4%                                                                                  |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   |                                                                                   | Perm                                                                              |                                                                                    | NA                                                                                  | Perm                                                                                |                                                                                     | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 5                                                                                 |                                                                                    |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             |                                                                                   |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 21.7                                                                              |                                                                                    | 98.3                                                                                | 98.3                                                                                |                                                                                     | 108.6                                                                               | 108.6                                                                               |
| Effective Green, g (s)            |                                                                                   |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 21.7                                                                              |                                                                                    | 98.3                                                                                | 98.3                                                                                |                                                                                     | 108.6                                                                               | 108.6                                                                               |
| Actuated g/C Ratio                |                                                                                   |                                                                                   | 0.09                                                                              |                                                                                   |                                                                                   | 0.17                                                                              |                                                                                    | 0.76                                                                                | 0.76                                                                                |                                                                                     | 0.84                                                                                | 0.84                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                    | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                    | 4.8                                                                                 | 4.8                                                                                 |                                                                                     | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   |                                                                                   | 246                                                                               |                                                                                   |                                                                                   | 474                                                                               |                                                                                    | 3807                                                                                | 1196                                                                                |                                                                                     | 4166                                                                                | 1270                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 0.35                                                                                |                                                                                     |                                                                                     | c0.59                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | c0.05                                                                             |                                                                                   |                                                                                   | c0.13                                                                             |                                                                                    |                                                                                     | 0.09                                                                                |                                                                                     |                                                                                     | 0.27                                                                                |
| v/c Ratio                         |                                                                                   |                                                                                   | 0.58                                                                              |                                                                                   |                                                                                   | 0.79                                                                              |                                                                                    | 0.47                                                                                | 0.12                                                                                |                                                                                     | 0.71                                                                                | 0.32                                                                                |
| Uniform Delay, d1                 |                                                                                   |                                                                                   | 57.0                                                                              |                                                                                   |                                                                                   | 51.9                                                                              |                                                                                    | 6.0                                                                                 | 4.3                                                                                 |                                                                                     | 4.3                                                                                 | 2.4                                                                                 |
| Progression Factor                |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                    | 1.45                                                                                | 3.37                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   |                                                                                   | 2.4                                                                               |                                                                                   |                                                                                   | 8.0                                                                               |                                                                                    | 0.3                                                                                 | 0.2                                                                                 |                                                                                     | 1.0                                                                                 | 0.7                                                                                 |
| Delay (s)                         |                                                                                   |                                                                                   | 59.4                                                                              |                                                                                   |                                                                                   | 59.9                                                                              |                                                                                    | 9.0                                                                                 | 14.5                                                                                |                                                                                     | 5.3                                                                                 | 3.1                                                                                 |
| Level of Service                  |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                    | A                                                                                   | B                                                                                   |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 59.4                                                                              |                                                                                   |                                                                                   | 59.9                                                                              |                                                                                   |                                                                                    | 9.5                                                                                 |                                                                                     |                                                                                     | 5.0                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 12.2                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                    |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.70                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                    |                                                                                     | 10.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 69.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                    |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

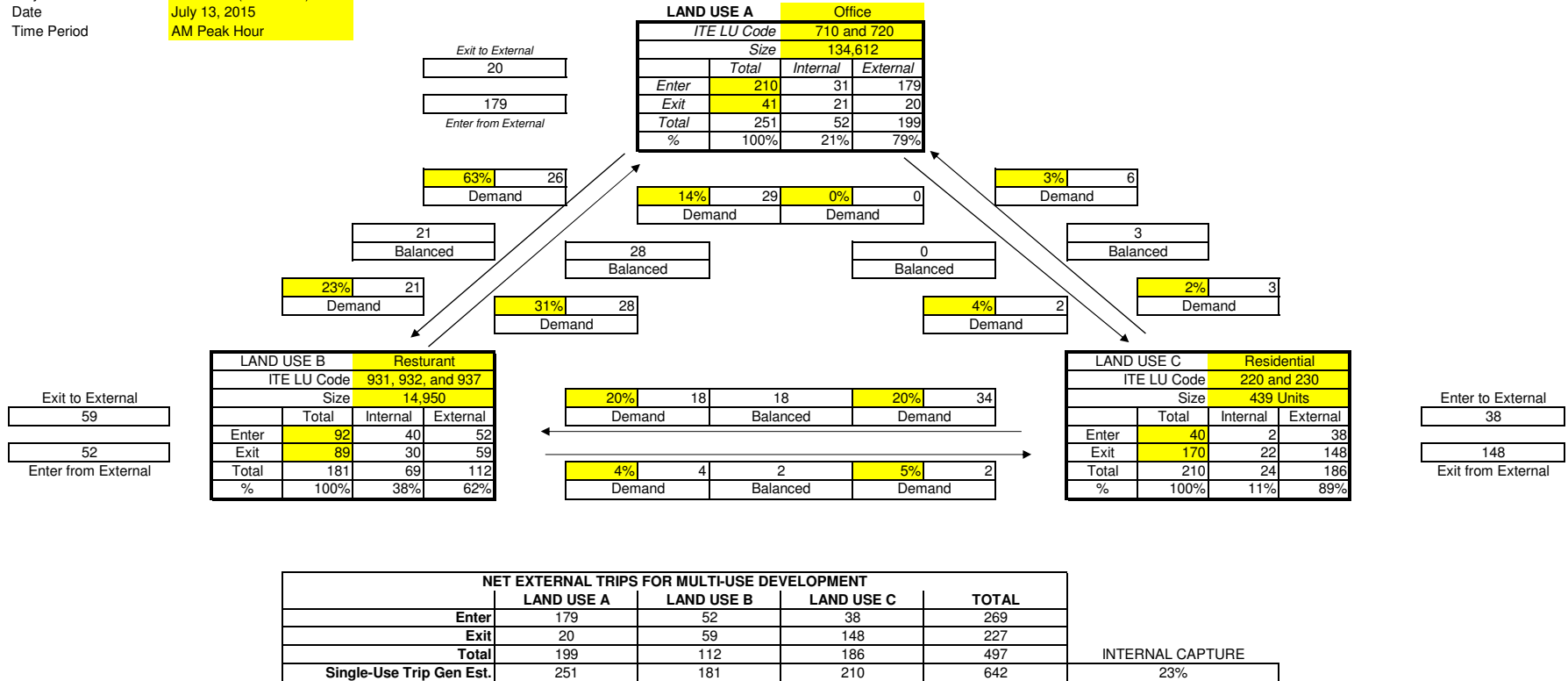
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|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 385                                                                               | 144                                                                               | 72                                                                                | 1517                                                                              | 2303                                                                              | 667                                                                               |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.4                                                                               | 4.0                                                                               | 4.0                                                                               | 6.0                                                                               | 6.0                                                                               | 5.4                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.98                                                                              |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3400                                                                              | 1599                                                                              | 1736                                                                              | 3505                                                                              | 3471                                                                              | 1527                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3400                                                                              | 1599                                                                              | 1736                                                                              | 3505                                                                              | 3471                                                                              | 1527                                                                              |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |
| Adj. Flow (vph)                   | 401                                                                               | 150                                                                               | 75                                                                                | 1580                                                                              | 2399                                                                              | 695                                                                               |
| RTOR Reduction (vph)              | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 120                                                                               |
| Lane Group Flow (vph)             | 401                                                                               | 146                                                                               | 75                                                                                | 1580                                                                              | 2399                                                                              | 575                                                                               |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |
| Heavy Vehicles (%)                | 3%                                                                                | 1%                                                                                | 4%                                                                                | 3%                                                                                | 4%                                                                                | 4%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | Prot                                                                              | NA                                                                                | NA                                                                                | pm+ov                                                                             |
| Protected Phases                  | 8                                                                                 | 1                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                 | 8                                                                                 |
| Permitted Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |
| Actuated Green, G (s)             | 17.9                                                                              | 33.9                                                                              | 16.0                                                                              | 100.7                                                                             | 80.7                                                                              | 98.6                                                                              |
| Effective Green, g (s)            | 17.9                                                                              | 33.9                                                                              | 16.0                                                                              | 100.7                                                                             | 80.7                                                                              | 98.6                                                                              |
| Actuated g/C Ratio                | 0.14                                                                              | 0.26                                                                              | 0.12                                                                              | 0.77                                                                              | 0.62                                                                              | 0.76                                                                              |
| Clearance Time (s)                | 5.4                                                                               | 4.0                                                                               | 4.0                                                                               | 6.0                                                                               | 6.0                                                                               | 5.4                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               | 4.8                                                                               | 2.3                                                                               |
| Lane Grp Cap (vph)                | 468                                                                               | 466                                                                               | 213                                                                               | 2715                                                                              | 2154                                                                              | 1221                                                                              |
| v/s Ratio Prot                    | c0.12                                                                             | 0.04                                                                              | 0.04                                                                              | c0.45                                                                             | c0.69                                                                             | 0.06                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.31                                                                              |
| v/c Ratio                         | 0.86                                                                              | 0.31                                                                              | 0.35                                                                              | 0.58                                                                              | 1.11                                                                              | 0.47                                                                              |
| Uniform Delay, d1                 | 54.8                                                                              | 38.7                                                                              | 52.2                                                                              | 6.0                                                                               | 24.6                                                                              | 5.9                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.47                                                                              | 4.31                                                                              |
| Incremental Delay, d2             | 14.0                                                                              | 0.2                                                                               | 0.6                                                                               | 0.9                                                                               | 56.5                                                                              | 0.1                                                                               |
| Delay (s)                         | 68.8                                                                              | 38.9                                                                              | 52.8                                                                              | 6.9                                                                               | 92.7                                                                              | 25.5                                                                              |
| Level of Service                  | E                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | F                                                                                 | C                                                                                 |
| Approach Delay (s)                | 60.7                                                                              |                                                                                   |                                                                                   | 9.0                                                                               | 77.6                                                                              |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 | E                                                                                 |                                                                                   |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 54.4                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | D                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 15.4                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 84.1%                                                                             |                                                                                   | ICU Level of Service                                                              | E                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

**Appendix F**  
ITE Internalization  
Worksheets

Analyst  
Project  
Date  
Time Period

PSM  
The Cove (PN 18574)  
July 13, 2015  
AM Peak Hour

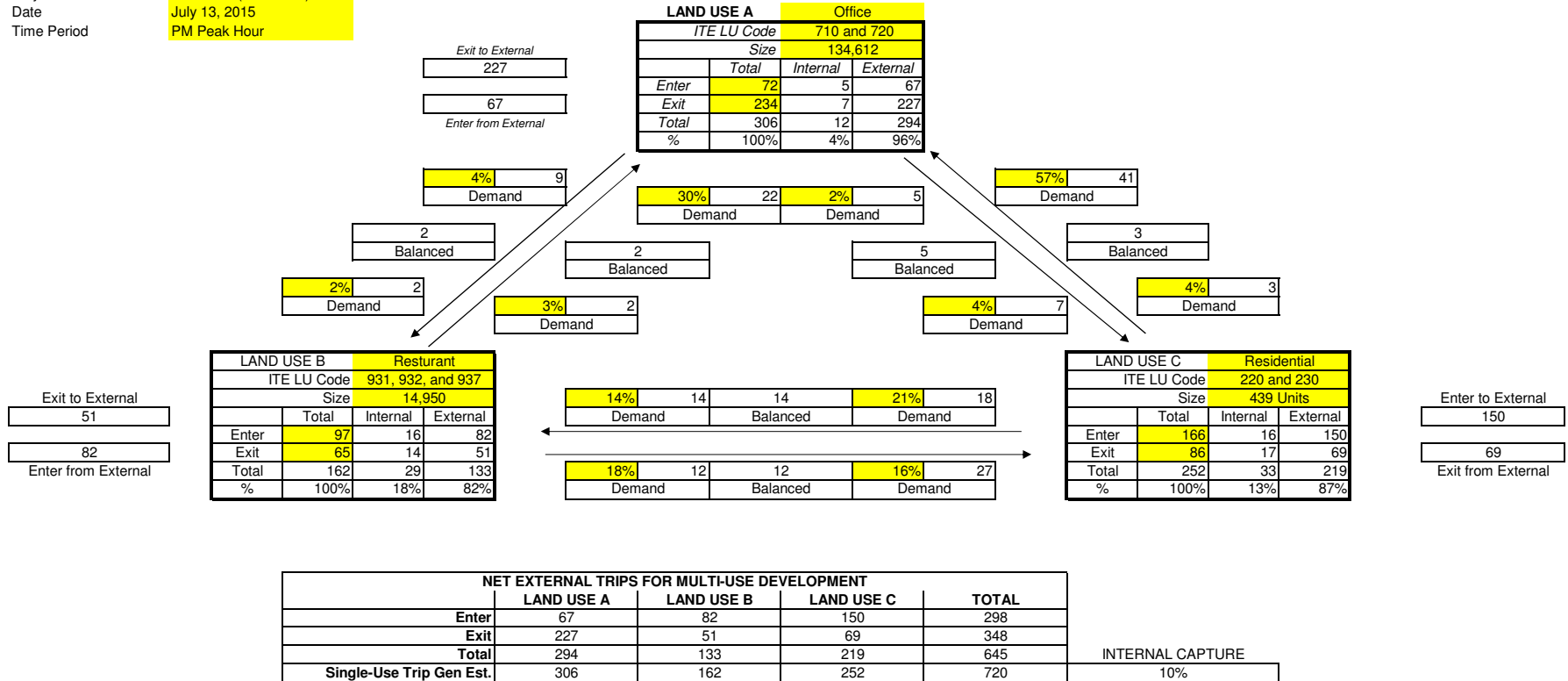
NOT VALIDATED, USE WITH CAUTION



Analyst  
Project  
Date  
Time Period

PSM  
The Cove (PN 18574)  
July 13, 2015  
PM Peak Hour

NOT VALIDATED, USE WITH CAUTION



**Appendix G**  
Metro Model Select Zone  
Analysis Output (2010)



**Appendix H**  
Year 2017 Total Traffic  
Level-of-Service  
Worksheets

The Cove  
1: McLoughlin Blvd & Dunes Dr

Total Traffic AM Peak Hour  
7/27/2015

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Volume (vph)                      | 25                                                                                | 7                                                                                 | 66                                                                                | 142                                                                               | 6                                                                                 | 57                                                                                | 56                                                                                  | 1678                                                                                | 69                                                                                  | 92                                                                                  | 1388                                                                                | 167                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.91                                                                                |                                                                                     | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                                | 0.99                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1733                                                                              | 1502                                                                              |                                                                                   | 1751                                                                              | 1501                                                                              |                                                                                   | 1656                                                                                | 4870                                                                                |                                                                                     | 1787                                                                                | 4893                                                                                | 1482                                                                                |
| Flt Permitted                     | 0.71                                                                              | 1.00                                                                              |                                                                                   | 0.70                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1298                                                                              | 1502                                                                              |                                                                                   | 1298                                                                              | 1501                                                                              |                                                                                   | 1656                                                                                | 4870                                                                                |                                                                                     | 1787                                                                                | 4893                                                                                | 1482                                                                                |
| 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)                   | 28                                                                                | 8                                                                                 | 73                                                                                | 158                                                                               | 7                                                                                 | 63                                                                                | 62                                                                                  | 1864                                                                                | 77                                                                                  | 102                                                                                 | 1542                                                                                | 186                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 61                                                                                | 0                                                                                 | 0                                                                                 | 53                                                                                | 0                                                                                 | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 34                                                                                  |
| Lane Group Flow (vph)             | 28                                                                                | 20                                                                                | 0                                                                                 | 158                                                                               | 17                                                                                | 0                                                                                 | 62                                                                                  | 1937                                                                                | 0                                                                                   | 102                                                                                 | 1542                                                                                | 152                                                                                 |
| Confl. Peds. (#/hr)               | 3                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Heavy Vehicles (%)                | 4%                                                                                | 0%                                                                                | 9%                                                                                | 3%                                                                                | 0%                                                                                | 9%                                                                                | 9%                                                                                  | 6%                                                                                  | 3%                                                                                  | 1%                                                                                  | 6%                                                                                  | 9%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 14.4                                                                              | 14.4                                                                              |                                                                                   | 14.4                                                                              | 14.4                                                                              |                                                                                   | 7.5                                                                                 | 54.2                                                                                |                                                                                     | 8.6                                                                                 | 55.3                                                                                | 55.3                                                                                |
| Effective Green, g (s)            | 14.4                                                                              | 14.4                                                                              |                                                                                   | 14.4                                                                              | 14.4                                                                              |                                                                                   | 7.5                                                                                 | 54.2                                                                                |                                                                                     | 8.6                                                                                 | 55.3                                                                                | 55.3                                                                                |
| Actuated g/C Ratio                | 0.16                                                                              | 0.16                                                                              |                                                                                   | 0.16                                                                              | 0.16                                                                              |                                                                                   | 0.08                                                                                | 0.60                                                                                |                                                                                     | 0.10                                                                                | 0.61                                                                                | 0.61                                                                                |
| Clearance Time (s)                | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.3                                                                                 | 4.8                                                                                 |                                                                                     | 2.3                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                | 207                                                                               | 240                                                                               |                                                                                   | 207                                                                               | 240                                                                               |                                                                                   | 138                                                                                 | 2932                                                                                |                                                                                     | 170                                                                                 | 3006                                                                                | 910                                                                                 |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | 0.04                                                                                | c0.40                                                                               |                                                                                     | 0.06                                                                                | c0.32                                                                               |                                                                                     |
| v/s Ratio Perm                    | 0.02                                                                              |                                                                                   |                                                                                   | c0.12                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.10                                                                                |
| v/c Ratio                         | 0.14                                                                              | 0.08                                                                              |                                                                                   | 0.76                                                                              | 0.07                                                                              |                                                                                   | 0.45                                                                                | 0.66                                                                                |                                                                                     | 0.60                                                                                | 0.51                                                                                | 0.17                                                                                |
| Uniform Delay, d1                 | 32.5                                                                              | 32.2                                                                              |                                                                                   | 36.2                                                                              | 32.1                                                                              |                                                                                   | 39.3                                                                                | 11.8                                                                                |                                                                                     | 39.0                                                                                | 9.8                                                                                 | 7.5                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.68                                                                                | 0.37                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.2                                                                               | 0.1                                                                               |                                                                                   | 14.7                                                                              | 0.1                                                                               |                                                                                   | 0.5                                                                                 | 0.5                                                                                 |                                                                                     | 4.3                                                                                 | 0.6                                                                                 | 0.4                                                                                 |
| Delay (s)                         | 32.7                                                                              | 32.3                                                                              |                                                                                   | 50.9                                                                              | 32.2                                                                              |                                                                                   | 27.0                                                                                | 4.8                                                                                 |                                                                                     | 43.4                                                                                | 10.4                                                                                | 7.9                                                                                 |
| Level of Service                  | C                                                                                 | C                                                                                 |                                                                                   | D                                                                                 | C                                                                                 |                                                                                   | C                                                                                   | A                                                                                   |                                                                                     | D                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 32.4                                                                              |                                                                                   |                                                                                   | 45.1                                                                              |                                                                                   |                                                                                     | 5.5                                                                                 |                                                                                     |                                                                                     | 12.0                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.67                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 12.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Total Traffic AM Peak Hour  
7/27/2015

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 341                                                                               | 424                                                                               | 1502                                                                              | 304                                                                               | 546                                                                               | 1046                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.0                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 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                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3155                                                                              | 1538                                                                              | 4940                                                                              | 1451                                                                              | 1752                                                                              | 4940                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3155                                                                              | 1538                                                                              | 4940                                                                              | 1451                                                                              | 1752                                                                              | 4940                                                                              |
| Peak-hour factor, PHF             | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              |
| Adj. Flow (vph)                   | 375                                                                               | 466                                                                               | 1651                                                                              | 334                                                                               | 600                                                                               | 1149                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 375                                                                               | 466                                                                               | 1651                                                                              | 334                                                                               | 600                                                                               | 1149                                                                              |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |
| Heavy Vehicles (%)                | 11%                                                                               | 5%                                                                                | 5%                                                                                | 9%                                                                                | 3%                                                                                | 5%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 14.5                                                                              | 46.5                                                                              | 29.2                                                                              | 90.0                                                                              | 32.0                                                                              | 65.2                                                                              |
| Effective Green, g (s)            | 14.5                                                                              | 46.5                                                                              | 29.2                                                                              | 90.0                                                                              | 32.0                                                                              | 65.2                                                                              |
| Actuated g/C Ratio                | 0.16                                                                              | 0.52                                                                              | 0.32                                                                              | 1.00                                                                              | 0.36                                                                              | 0.72                                                                              |
| Clearance Time (s)                | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               |                                                                                   | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               |                                                                                   | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 508                                                                               | 862                                                                               | 1602                                                                              | 1451                                                                              | 622                                                                               | 3578                                                                              |
| v/s Ratio Prot                    | c0.12                                                                             | 0.19                                                                              | c0.33                                                                             |                                                                                   | c0.34                                                                             | 0.23                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.11                                                                              |                                                                                   | 0.23                                                                              |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.74                                                                              | 0.54                                                                              | 1.03                                                                              | 0.23                                                                              | 0.96                                                                              | 0.32                                                                              |
| Uniform Delay, d1                 | 35.9                                                                              | 14.6                                                                              | 30.4                                                                              | 0.0                                                                               | 28.4                                                                              | 4.5                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 0.70                                                                              | 1.00                                                                              | 1.23                                                                              | 0.69                                                                              |
| Incremental Delay, d2             | 5.1                                                                               | 0.5                                                                               | 29.9                                                                              | 0.3                                                                               | 25.0                                                                              | 0.2                                                                               |
| Delay (s)                         | 41.0                                                                              | 15.1                                                                              | 51.2                                                                              | 0.3                                                                               | 60.0                                                                              | 3.3                                                                               |
| Level of Service                  | D                                                                                 | B                                                                                 | D                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 |
| Approach Delay (s)                | 26.6                                                                              |                                                                                   | 42.6                                                                              |                                                                                   |                                                                                   | 22.7                                                                              |
| Approach LOS                      | C                                                                                 |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | C                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 32.1                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | C                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                              |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 80.9%                                                                             |                                                                                   | ICU Level of Service                                                              | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

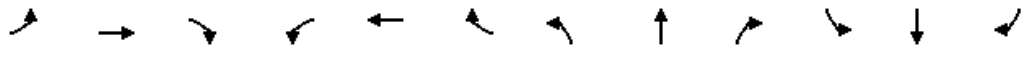
Total Traffic AM Peak Hour  
7/27/2015

|                                   |  |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                                                                                                   | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                                                                                                   |
| Lane Configurations               |  |  |    |  |  |    |
| Volume (vph)                      | 139                                                                               | 465                                                                               | 1234                                                                                                                                                                                                                                                  | 849                                                                               | 201                                                                               | 1151                                                                                                                                                                                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 0.91                                                                                                                                                                                                                                                  |
| Frpb, ped/bikes                   | 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                                                                                                                                                                                                                                                  |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.85                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (prot)                 | 1597                                                                              | 1495                                                                              | 4803                                                                                                                                                                                                                                                  | 1478                                                                              | 1671                                                                              | 4893                                                                                                                                                                                                                                                  |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.95                                                                              | 1.00                                                                                                                                                                                                                                                  |
| Satd. Flow (perm)                 | 1597                                                                              | 1495                                                                              | 4803                                                                                                                                                                                                                                                  | 1478                                                                              | 1671                                                                              | 4893                                                                                                                                                                                                                                                  |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  |
| Adj. Flow (vph)                   | 149                                                                               | 500                                                                               | 1327                                                                                                                                                                                                                                                  | 913                                                                               | 216                                                                               | 1238                                                                                                                                                                                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 322                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     |
| Lane Group Flow (vph)             | 149                                                                               | 500                                                                               | 1327                                                                                                                                                                                                                                                  | 591                                                                               | 216                                                                               | 1238                                                                                                                                                                                                                                                  |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       | 1                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |
| Heavy Vehicles (%)                | 13%                                                                               | 8%                                                                                | 8%                                                                                                                                                                                                                                                    | 7%                                                                                | 8%                                                                                | 6%                                                                                                                                                                                                                                                    |
| Turn Type                         | Prot                                                                              | Free                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                              | NA                                                                                                                                                                                                                                                    |
| Protected Phases                  | 4                                                                                 |                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                   | 5                                                                                 | 2                                                                                                                                                                                                                                                     |
| Permitted Phases                  |                                                                                   | Free                                                                              |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Green, G (s)             | 13.0                                                                              | 90.0                                                                              | 49.2                                                                                                                                                                                                                                                  | 49.2                                                                              | 13.5                                                                              | 66.7                                                                                                                                                                                                                                                  |
| Effective Green, g (s)            | 13.0                                                                              | 90.0                                                                              | 49.2                                                                                                                                                                                                                                                  | 49.2                                                                              | 13.5                                                                              | 66.7                                                                                                                                                                                                                                                  |
| Actuated g/C Ratio                | 0.14                                                                              | 1.00                                                                              | 0.55                                                                                                                                                                                                                                                  | 0.55                                                                              | 0.15                                                                              | 0.74                                                                                                                                                                                                                                                  |
| Clearance Time (s)                | 5.5                                                                               |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 4.0                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Vehicle Extension (s)             | 2.3                                                                               |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 4.8                                                                               | 2.3                                                                               | 4.8                                                                                                                                                                                                                                                   |
| Lane Grp Cap (vph)                | 230                                                                               | 1495                                                                              | 2625                                                                                                                                                                                                                                                  | 807                                                                               | 250                                                                               | 3626                                                                                                                                                                                                                                                  |
| v/s Ratio Prot                    | c0.09                                                                             |                                                                                   | 0.28                                                                                                                                                                                                                                                  |                                                                                   | c0.13                                                                             | 0.25                                                                                                                                                                                                                                                  |
| v/s Ratio Perm                    |                                                                                   | 0.33                                                                              |                                                                                                                                                                                                                                                       | c0.40                                                                             |                                                                                   |                                                                                                                                                                                                                                                       |
| v/c Ratio                         | 0.65                                                                              | 0.33                                                                              | 0.51                                                                                                                                                                                                                                                  | 0.73                                                                              | 0.86                                                                              | 0.34                                                                                                                                                                                                                                                  |
| Uniform Delay, d1                 | 36.3                                                                              | 0.0                                                                               | 12.8                                                                                                                                                                                                                                                  | 15.4                                                                              | 37.4                                                                              | 4.0                                                                                                                                                                                                                                                   |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.70                                                                              | 0.73                                                                                                                                                                                                                                                  |
| Incremental Delay, d2             | 5.1                                                                               | 0.6                                                                               | 0.7                                                                                                                                                                                                                                                   | 5.8                                                                               | 23.4                                                                              | 0.2                                                                                                                                                                                                                                                   |
| Delay (s)                         | 41.5                                                                              | 0.6                                                                               | 13.5                                                                                                                                                                                                                                                  | 21.3                                                                              | 49.5                                                                              | 3.2                                                                                                                                                                                                                                                   |
| Level of Service                  | D                                                                                 | A                                                                                 | B                                                                                                                                                                                                                                                     | C                                                                                 | D                                                                                 | A                                                                                                                                                                                                                                                     |
| Approach Delay (s)                | 10.0                                                                              |                                                                                   | 16.6                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 10.1                                                                                                                                                                                                                                                  |
| Approach LOS                      | A                                                                                 |                                                                                   | B                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | B                                                                                                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 13.4                                                                                                                                                                                                                                                  |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                                                                                                                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.74                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 90.0                                                                                                                                                                                                                                                  |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                                                                                                                                                                                                  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 71.0%                                                                                                                                                                                                                                                 |                                                                                   | ICU Level of Service                                                              | C                                                                                                                                                                                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |

The Cove  
4: OR 213 & Washington St/Clackamas River Dr

Total Traffic AM Peak Hour

7/27/2015

|                                   |  |      |       |      |      |                           |      |       |      |      |       |       |
|-----------------------------------|------------------------------------------------------------------------------------|------|-------|------|------|---------------------------|------|-------|------|------|-------|-------|
| Movement                          | EBL                                                                                | EBT  | EBR   | WBL  | WBT  | WBR                       | NBL  | NBT   | NBR  | SBL  | SBT   | SBR   |
| Lane Configurations               |                                                                                    |      | ↗↘    |      |      | ↗↘                        |      | ↗↗↘   | ↗    |      | ↗↗↘   | ↗     |
| Volume (vph)                      | 0                                                                                  | 0    | 60    | 0    | 0    | 380                       | 0    | 2316  | 134  | 0    | 1500  | 433   |
| Ideal Flow (vphpl)                | 1900                                                                               | 1900 | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  |
| Total Lost time (s)               |                                                                                    |      | 4.0   |      |      | 4.0                       |      | 6.0   | 6.0  |      | 6.0   | 6.0   |
| Lane Util. Factor                 |                                                                                    |      | 0.88  |      |      | 0.88                      |      | 0.91  | 1.00 |      | 0.91  | 1.00  |
| Flt                               |                                                                                    |      | 0.85  |      |      | 0.85                      |      | 1.00  | 0.85 |      | 1.00  | 0.85  |
| Flt Protected                     |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.00  | 1.00 |      | 1.00  | 1.00  |
| Satd. Flow (prot)                 |                                                                                    |      | 2632  |      |      | 2493                      |      | 4893  | 1357 |      | 4893  | 1404  |
| Flt Permitted                     |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.00  | 1.00 |      | 1.00  | 1.00  |
| Satd. Flow (perm)                 |                                                                                    |      | 2632  |      |      | 2493                      |      | 4893  | 1357 |      | 4893  | 1404  |
| Peak-hour factor, PHF             | 0.92                                                                               | 0.92 | 0.92  | 0.92 | 0.92 | 0.92                      | 0.92 | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  |
| Adj. Flow (vph)                   | 0                                                                                  | 0    | 65    | 0    | 0    | 413                       | 0    | 2517  | 146  | 0    | 1630  | 471   |
| RTOR Reduction (vph)              | 0                                                                                  | 0    | 55    | 0    | 0    | 63                        | 0    | 0     | 36   | 0    | 0     | 107   |
| Lane Group Flow (vph)             | 0                                                                                  | 0    | 10    | 0    | 0    | 350                       | 0    | 2517  | 110  | 0    | 1630  | 364   |
| Heavy Vehicles (%)                | 0%                                                                                 | 0%   | 8%    | 0%   | 0%   | 14%                       | 0%   | 6%    | 19%  | 0%   | 6%    | 15%   |
| Turn Type                         |                                                                                    |      | Perm  |      |      | Perm                      |      | NA    | Perm |      | NA    | Perm  |
| Protected Phases                  |                                                                                    |      |       |      |      |                           |      | 6     |      |      | 2     |       |
| Permitted Phases                  |                                                                                    |      | 1     |      |      | 5                         |      |       | 6    |      |       | 2     |
| Actuated Green, G (s)             |                                                                                    |      | 19.4  |      |      | 21.9                      |      | 98.1  | 98.1 |      | 100.6 | 100.6 |
| Effective Green, g (s)            |                                                                                    |      | 19.4  |      |      | 21.9                      |      | 98.1  | 98.1 |      | 100.6 | 100.6 |
| Actuated g/C Ratio                |                                                                                    |      | 0.15  |      |      | 0.17                      |      | 0.75  | 0.75 |      | 0.77  | 0.77  |
| Clearance Time (s)                |                                                                                    |      | 4.0   |      |      | 4.0                       |      | 6.0   | 6.0  |      | 6.0   | 6.0   |
| Vehicle Extension (s)             |                                                                                    |      | 2.3   |      |      | 2.3                       |      | 4.8   | 4.8  |      | 4.8   | 4.8   |
| Lane Grp Cap (vph)                |                                                                                    |      | 392   |      |      | 419                       |      | 3692  | 1024 |      | 3786  | 1086  |
| v/s Ratio Prot                    |                                                                                    |      |       |      |      |                           |      | c0.51 |      |      | 0.33  |       |
| v/s Ratio Perm                    |                                                                                    |      | 0.00  |      |      | c0.14                     |      |       | 0.08 |      |       | 0.26  |
| v/c Ratio                         |                                                                                    |      | 0.02  |      |      | 0.83                      |      | 0.68  | 0.11 |      | 0.43  | 0.34  |
| Uniform Delay, d1                 |                                                                                    |      | 47.2  |      |      | 52.3                      |      | 8.1   | 4.3  |      | 5.0   | 4.5   |
| Progression Factor                |                                                                                    |      | 1.00  |      |      | 1.00                      |      | 1.24  | 1.71 |      | 1.00  | 1.00  |
| Incremental Delay, d2             |                                                                                    |      | 0.0   |      |      | 13.0                      |      | 0.4   | 0.1  |      | 0.4   | 0.8   |
| Delay (s)                         |                                                                                    |      | 47.2  |      |      | 65.3                      |      | 10.5  | 7.4  |      | 5.3   | 5.3   |
| Level of Service                  |                                                                                    |      | D     |      |      | E                         |      | B     | A    |      | A     | A     |
| Approach Delay (s)                |                                                                                    | 47.2 |       |      | 65.3 |                           |      | 10.3  |      |      | 5.3   |       |
| Approach LOS                      |                                                                                    | D    |       |      | E    |                           |      | B     |      |      | A     |       |
| <b>Intersection Summary</b>       |                                                                                    |      |       |      |      |                           |      |       |      |      |       |       |
| HCM 2000 Control Delay            |                                                                                    |      | 13.1  |      |      | HCM 2000 Level of Service |      |       | B    |      |       |       |
| HCM 2000 Volume to Capacity ratio |                                                                                    |      | 0.71  |      |      |                           |      |       |      |      |       |       |
| Actuated Cycle Length (s)         |                                                                                    |      | 130.0 |      |      | Sum of lost time (s)      |      |       | 10.0 |      |       |       |
| Intersection Capacity Utilization |                                                                                    |      | 66.4% |      |      | ICU Level of Service      |      |       | C    |      |       |       |
| Analysis Period (min)             |                                                                                    |      | 15    |      |      |                           |      |       |      |      |       |       |
| c Critical Lane Group             |                                                                                    |      |       |      |      |                           |      |       |      |      |       |       |

The Cove  
5: OR 213 & Redland Rd

Total Traffic AM Peak Hour  
7/27/2015

|                                   |                                                                                    |                                                                                    |                                                                                    |                                                                                    |                                                                                    |                                                                                    |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                                                                                                                 | EBR                                                                                                                                                                 | NBL                                                                                                                                                                 | NBT                                                                                                                                                                 | SBT                                                                                                                                                                 | SBR                                                                                                                                                                 |
| Lane Configurations               |   |   |   |   |   |   |
| Volume (vph)                      | 579                                                                                                                                                                 | 142                                                                                                                                                                 | 95                                                                                                                                                                  | 1972                                                                                                                                                                | 1242                                                                                                                                                                | 302                                                                                                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                |
| Total Lost time (s)               | 5.4                                                                                                                                                                 | 4.0                                                                                                                                                                 | 4.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 5.4                                                                                                                                                                 |
| Lane Util. Factor                 | 0.97                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                |
| Frt                               | 1.00                                                                                                                                                                | 0.85                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.85                                                                                                                                                                |
| Flt Protected                     | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Satd. Flow (prot)                 | 3273                                                                                                                                                                | 1495                                                                                                                                                                | 1703                                                                                                                                                                | 3374                                                                                                                                                                | 3406                                                                                                                                                                | 1524                                                                                                                                                                |
| Flt Permitted                     | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Satd. Flow (perm)                 | 3273                                                                                                                                                                | 1495                                                                                                                                                                | 1703                                                                                                                                                                | 3374                                                                                                                                                                | 3406                                                                                                                                                                | 1524                                                                                                                                                                |
| Peak-hour factor, PHF             | 0.93                                                                                                                                                                | 0.93                                                                                                                                                                | 0.93                                                                                                                                                                | 0.93                                                                                                                                                                | 0.93                                                                                                                                                                | 0.93                                                                                                                                                                |
| Adj. Flow (vph)                   | 623                                                                                                                                                                 | 153                                                                                                                                                                 | 102                                                                                                                                                                 | 2120                                                                                                                                                                | 1335                                                                                                                                                                | 325                                                                                                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                                                                                                   | 29                                                                                                                                                                  | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 79                                                                                                                                                                  |
| Lane Group Flow (vph)             | 623                                                                                                                                                                 | 124                                                                                                                                                                 | 102                                                                                                                                                                 | 2120                                                                                                                                                                | 1335                                                                                                                                                                | 247                                                                                                                                                                 |
| Heavy Vehicles (%)                | 7%                                                                                                                                                                  | 8%                                                                                                                                                                  | 6%                                                                                                                                                                  | 7%                                                                                                                                                                  | 6%                                                                                                                                                                  | 6%                                                                                                                                                                  |
| Turn Type                         | Prot                                                                                                                                                                | pm+ov                                                                                                                                                               | Prot                                                                                                                                                                | NA                                                                                                                                                                  | NA                                                                                                                                                                  | pm+ov                                                                                                                                                               |
| Protected Phases                  | 8                                                                                                                                                                   | 1                                                                                                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                   | 2                                                                                                                                                                   | 8                                                                                                                                                                   |
| Permitted Phases                  |                                                                                                                                                                     | 8                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 2                                                                                                                                                                   |
| Actuated Green, G (s)             | 26.2                                                                                                                                                                | 42.2                                                                                                                                                                | 16.0                                                                                                                                                                | 92.4                                                                                                                                                                | 72.4                                                                                                                                                                | 98.6                                                                                                                                                                |
| Effective Green, g (s)            | 26.2                                                                                                                                                                | 42.2                                                                                                                                                                | 16.0                                                                                                                                                                | 92.4                                                                                                                                                                | 72.4                                                                                                                                                                | 98.6                                                                                                                                                                |
| Actuated g/C Ratio                | 0.20                                                                                                                                                                | 0.32                                                                                                                                                                | 0.12                                                                                                                                                                | 0.71                                                                                                                                                                | 0.56                                                                                                                                                                | 0.76                                                                                                                                                                |
| Clearance Time (s)                | 5.4                                                                                                                                                                 | 4.0                                                                                                                                                                 | 4.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 5.4                                                                                                                                                                 |
| Vehicle Extension (s)             | 2.3                                                                                                                                                                 | 2.3                                                                                                                                                                 | 2.3                                                                                                                                                                 | 4.8                                                                                                                                                                 | 4.8                                                                                                                                                                 | 2.3                                                                                                                                                                 |
| Lane Grp Cap (vph)                | 659                                                                                                                                                                 | 531                                                                                                                                                                 | 209                                                                                                                                                                 | 2398                                                                                                                                                                | 1896                                                                                                                                                                | 1219                                                                                                                                                                |
| v/s Ratio Prot                    | c0.19                                                                                                                                                               | 0.03                                                                                                                                                                | 0.06                                                                                                                                                                | c0.63                                                                                                                                                               | 0.39                                                                                                                                                                | 0.04                                                                                                                                                                |
| v/s Ratio Perm                    |                                                                                                                                                                     | 0.05                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 0.12                                                                                                                                                                |
| v/c Ratio                         | 0.95                                                                                                                                                                | 0.23                                                                                                                                                                | 0.49                                                                                                                                                                | 0.88                                                                                                                                                                | 0.70                                                                                                                                                                | 0.20                                                                                                                                                                |
| Uniform Delay, d1                 | 51.2                                                                                                                                                                | 32.1                                                                                                                                                                | 53.2                                                                                                                                                                | 14.6                                                                                                                                                                | 21.0                                                                                                                                                                | 4.5                                                                                                                                                                 |
| Progression Factor                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.74                                                                                                                                                                | 0.14                                                                                                                                                                |
| Incremental Delay, d2             | 22.3                                                                                                                                                                | 0.1                                                                                                                                                                 | 1.0                                                                                                                                                                 | 5.2                                                                                                                                                                 | 2.1                                                                                                                                                                 | 0.0                                                                                                                                                                 |
| Delay (s)                         | 73.5                                                                                                                                                                | 32.2                                                                                                                                                                | 54.2                                                                                                                                                                | 19.8                                                                                                                                                                | 17.5                                                                                                                                                                | 0.7                                                                                                                                                                 |
| Level of Service                  | E                                                                                                                                                                   | C                                                                                                                                                                   | D                                                                                                                                                                   | B                                                                                                                                                                   | B                                                                                                                                                                   | A                                                                                                                                                                   |
| Approach Delay (s)                | 65.3                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     | 21.4                                                                                                                                                                | 14.2                                                                                                                                                                |                                                                                                                                                                     |
| Approach LOS                      | E                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     | C                                                                                                                                                                   | B                                                                                                                                                                   |                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| HCM 2000 Control Delay            |                                                                                                                                                                     |                                                                                                                                                                     | 26.2                                                                                                                                                                |                                                                                                                                                                     | HCM 2000 Level of Service                                                                                                                                           | C                                                                                                                                                                   |
| HCM 2000 Volume to Capacity ratio |                                                                                                                                                                     |                                                                                                                                                                     | 0.93                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| Actuated Cycle Length (s)         |                                                                                                                                                                     |                                                                                                                                                                     | 130.0                                                                                                                                                               |                                                                                                                                                                     | Sum of lost time (s)                                                                                                                                                | 15.4                                                                                                                                                                |
| Intersection Capacity Utilization |                                                                                                                                                                     |                                                                                                                                                                     | 80.5%                                                                                                                                                               |                                                                                                                                                                     | ICU Level of Service                                                                                                                                                | D                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                                                                                                     |                                                                                                                                                                     | 15                                                                                                                                                                  |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| c Critical Lane Group             |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |

The Cove  
1: McLoughlin Blvd & Dunes Dr

Total Traffic PM Peak Hour  
7/27/2015

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |                                                                                   |  |  |  |  |  |  |
| Volume (vph)                      | 21                                                                                | 3                                                                                 | 55                                                                                | 258                                                                               | 8                                                                                 | 79                                                                                | 53                                                                                  | 1307                                                                                | 146                                                                                 | 142                                                                                 | 1564                                                                                | 271                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.91                                                                                |                                                                                     | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                              | 0.86                                                                              |                                                                                   | 1.00                                                                                | 0.98                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1712                                                                              | 1545                                                                              |                                                                                   | 1780                                                                              | 1599                                                                              |                                                                                   | 1770                                                                                | 4958                                                                                |                                                                                     | 1787                                                                                | 5036                                                                                | 1562                                                                                |
| Flt Permitted                     | 0.69                                                                              | 1.00                                                                              |                                                                                   | 0.72                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1240                                                                              | 1545                                                                              |                                                                                   | 1345                                                                              | 1599                                                                              |                                                                                   | 1770                                                                                | 4958                                                                                |                                                                                     | 1787                                                                                | 5036                                                                                | 1562                                                                                |
| 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)                   | 22                                                                                | 3                                                                                 | 57                                                                                | 269                                                                               | 8                                                                                 | 82                                                                                | 55                                                                                  | 1361                                                                                | 152                                                                                 | 148                                                                                 | 1629                                                                                | 282                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 43                                                                                | 0                                                                                 | 0                                                                                 | 62                                                                                | 0                                                                                 | 0                                                                                   | 10                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 37                                                                                  |
| Lane Group Flow (vph)             | 22                                                                                | 17                                                                                | 0                                                                                 | 269                                                                               | 28                                                                                | 0                                                                                 | 55                                                                                  | 1503                                                                                | 0                                                                                   | 148                                                                                 | 1629                                                                                | 245                                                                                 |
| Confl. Peds. (#/hr)               | 6                                                                                 |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   | 6                                                                                 | 1                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Heavy Vehicles (%)                | 5%                                                                                | 0%                                                                                | 4%                                                                                | 1%                                                                                | 12%                                                                               | 0%                                                                                | 2%                                                                                  | 3%                                                                                  | 1%                                                                                  | 1%                                                                                  | 3%                                                                                  | 1%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 26.3                                                                              | 26.3                                                                              |                                                                                   | 26.3                                                                              | 26.3                                                                              |                                                                                   | 7.3                                                                                 | 57.4                                                                                |                                                                                     | 13.5                                                                                | 63.6                                                                                | 63.6                                                                                |
| Effective Green, g (s)            | 26.3                                                                              | 26.3                                                                              |                                                                                   | 26.3                                                                              | 26.3                                                                              |                                                                                   | 7.3                                                                                 | 57.4                                                                                |                                                                                     | 13.5                                                                                | 63.6                                                                                | 63.6                                                                                |
| Actuated g/C Ratio                | 0.24                                                                              | 0.24                                                                              |                                                                                   | 0.24                                                                              | 0.24                                                                              |                                                                                   | 0.07                                                                                | 0.52                                                                                |                                                                                     | 0.12                                                                                | 0.58                                                                                | 0.58                                                                                |
| Clearance Time (s)                | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.8                                                                                 |                                                                                     | 4.0                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.3                                                                                 | 4.8                                                                                 |                                                                                     | 2.3                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                | 296                                                                               | 369                                                                               |                                                                                   | 321                                                                               | 382                                                                               |                                                                                   | 117                                                                                 | 2587                                                                                |                                                                                     | 219                                                                                 | 2911                                                                                | 903                                                                                 |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | 0.03                                                                                | c0.30                                                                               |                                                                                     | c0.08                                                                               | 0.32                                                                                |                                                                                     |
| v/s Ratio Perm                    | 0.02                                                                              |                                                                                   |                                                                                   | c0.20                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.16                                                                                |
| v/c Ratio                         | 0.07                                                                              | 0.05                                                                              |                                                                                   | 0.84                                                                              | 0.07                                                                              |                                                                                   | 0.47                                                                                | 0.58                                                                                |                                                                                     | 0.68                                                                                | 0.56                                                                                | 0.27                                                                                |
| Uniform Delay, d1                 | 32.4                                                                              | 32.2                                                                              |                                                                                   | 39.8                                                                              | 32.4                                                                              |                                                                                   | 49.5                                                                                | 18.0                                                                                |                                                                                     | 46.2                                                                                | 14.5                                                                                | 11.6                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.48                                                                                | 0.49                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.1                                                                               | 0.0                                                                               |                                                                                   | 16.8                                                                              | 0.1                                                                               |                                                                                   | 0.2                                                                                 | 0.1                                                                                 |                                                                                     | 6.9                                                                                 | 0.8                                                                                 | 0.7                                                                                 |
| Delay (s)                         | 32.5                                                                              | 32.2                                                                              |                                                                                   | 56.7                                                                              | 32.5                                                                              |                                                                                   | 24.0                                                                                | 8.9                                                                                 |                                                                                     | 53.1                                                                                | 15.2                                                                                | 12.4                                                                                |
| Level of Service                  | C                                                                                 | C                                                                                 |                                                                                   | E                                                                                 | C                                                                                 |                                                                                   | C                                                                                   | A                                                                                   |                                                                                     | D                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 32.3                                                                              |                                                                                   |                                                                                   | 50.6                                                                              |                                                                                   |                                                                                     | 9.5                                                                                 |                                                                                     |                                                                                     | 17.6                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 17.7                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.66                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 12.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 70.9%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Total Traffic PM Peak Hour  
7/27/2015

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 812                                                                               | 352                                                                               | 1269                                                                              | 303                                                                               | 507                                                                               | 1386                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.0                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 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                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 3400                                                                              | 1583                                                                              | 5085                                                                              | 1518                                                                              | 1770                                                                              | 5085                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 3400                                                                              | 1583                                                                              | 5085                                                                              | 1518                                                                              | 1770                                                                              | 5085                                                                              |
| Peak-hour factor, PHF             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Adj. Flow (vph)                   | 837                                                                               | 363                                                                               | 1308                                                                              | 312                                                                               | 523                                                                               | 1429                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 837                                                                               | 363                                                                               | 1308                                                                              | 312                                                                               | 523                                                                               | 1429                                                                              |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 2%                                                                                |
| Turn Type                         | Prot                                                                              | pm+ov                                                                             | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 30.9                                                                              | 72.9                                                                              | 22.8                                                                              | 110.0                                                                             | 42.0                                                                              | 68.8                                                                              |
| Effective Green, g (s)            | 30.9                                                                              | 72.9                                                                              | 22.8                                                                              | 110.0                                                                             | 42.0                                                                              | 68.8                                                                              |
| Actuated g/C Ratio                | 0.28                                                                              | 0.66                                                                              | 0.21                                                                              | 1.00                                                                              | 0.38                                                                              | 0.63                                                                              |
| Clearance Time (s)                | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               |                                                                                   | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               | 2.3                                                                               | 4.8                                                                               |                                                                                   | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 955                                                                               | 1106                                                                              | 1053                                                                              | 1518                                                                              | 675                                                                               | 3180                                                                              |
| v/s Ratio Prot                    | c0.25                                                                             | 0.13                                                                              | c0.26                                                                             |                                                                                   | c0.30                                                                             | 0.28                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.10                                                                              |                                                                                   | 0.21                                                                              |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.88                                                                              | 0.33                                                                              | 1.24                                                                              | 0.21                                                                              | 0.77                                                                              | 0.45                                                                              |
| Uniform Delay, d1                 | 37.7                                                                              | 8.0                                                                               | 43.6                                                                              | 0.0                                                                               | 29.8                                                                              | 10.7                                                                              |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 0.73                                                                              | 1.00                                                                              | 1.27                                                                              | 1.30                                                                              |
| Incremental Delay, d2             | 9.0                                                                               | 0.1                                                                               | 116.6                                                                             | 0.3                                                                               | 4.4                                                                               | 0.4                                                                               |
| Delay (s)                         | 46.7                                                                              | 8.1                                                                               | 148.2                                                                             | 0.3                                                                               | 42.2                                                                              | 14.3                                                                              |
| Level of Service                  | D                                                                                 | A                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | B                                                                                 |
| Approach Delay (s)                | 35.0                                                                              |                                                                                   | 119.8                                                                             |                                                                                   |                                                                                   | 21.8                                                                              |
| Approach LOS                      | D                                                                                 |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | C                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 58.4                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | E                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.92                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 94.0%                                                                             |                                                                                   | ICU Level of Service                                                              | F                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

c Critical Lane Group

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Total Traffic PM Peak Hour

7/27/2015

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |  |  |  |  |  |
| Volume (vph)                      | 121                                                                               | 523                                                                               | 1119                                                                              | 894                                                                               | 322                                                                               | 1825                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 5.5                                                                               | 4.0                                                                               | 4.8                                                                               | 4.8                                                                               | 4.0                                                                               | 4.8                                                                               |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 1656                                                                              | 1583                                                                              | 4988                                                                              | 1482                                                                              | 1752                                                                              | 5036                                                                              |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 | 1656                                                                              | 1583                                                                              | 4988                                                                              | 1482                                                                              | 1752                                                                              | 5036                                                                              |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |
| Adj. Flow (vph)                   | 126                                                                               | 545                                                                               | 1166                                                                              | 931                                                                               | 335                                                                               | 1901                                                                              |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 262                                                                               | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 126                                                                               | 545                                                                               | 1166                                                                              | 669                                                                               | 335                                                                               | 1901                                                                              |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   | 11                                                                                | 11                                                                                |                                                                                   |
| Heavy Vehicles (%)                | 9%                                                                                | 2%                                                                                | 4%                                                                                | 4%                                                                                | 3%                                                                                | 3%                                                                                |
| Turn Type                         | Prot                                                                              | Free                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |
| Protected Phases                  | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |
| Permitted Phases                  |                                                                                   | Free                                                                              |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 13.0                                                                              | 110.0                                                                             | 56.6                                                                              | 56.6                                                                              | 26.1                                                                              | 86.7                                                                              |
| Effective Green, g (s)            | 13.0                                                                              | 110.0                                                                             | 56.6                                                                              | 56.6                                                                              | 26.1                                                                              | 86.7                                                                              |
| Actuated g/C Ratio                | 0.12                                                                              | 1.00                                                                              | 0.51                                                                              | 0.51                                                                              | 0.24                                                                              | 0.79                                                                              |
| Clearance Time (s)                | 5.5                                                                               |                                                                                   | 4.8                                                                               | 4.8                                                                               | 4.0                                                                               | 4.8                                                                               |
| Vehicle Extension (s)             | 2.3                                                                               |                                                                                   | 4.8                                                                               | 4.8                                                                               | 2.3                                                                               | 4.8                                                                               |
| Lane Grp Cap (vph)                | 195                                                                               | 1583                                                                              | 2566                                                                              | 762                                                                               | 415                                                                               | 3969                                                                              |
| v/s Ratio Prot                    | c0.08                                                                             |                                                                                   | 0.23                                                                              |                                                                                   | c0.19                                                                             | 0.38                                                                              |
| v/s Ratio Perm                    |                                                                                   | 0.34                                                                              |                                                                                   | c0.45                                                                             |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.65                                                                              | 0.34                                                                              | 0.45                                                                              | 0.88                                                                              | 0.81                                                                              | 0.48                                                                              |
| Uniform Delay, d1                 | 46.3                                                                              | 0.0                                                                               | 16.9                                                                              | 23.7                                                                              | 39.6                                                                              | 4.0                                                                               |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.61                                                                              | 0.64                                                                              |
| Incremental Delay, d2             | 6.0                                                                               | 0.6                                                                               | 0.6                                                                               | 13.7                                                                              | 8.9                                                                               | 0.3                                                                               |
| Delay (s)                         | 52.3                                                                              | 0.6                                                                               | 17.5                                                                              | 37.3                                                                              | 33.1                                                                              | 2.9                                                                               |
| Level of Service                  | D                                                                                 | A                                                                                 | B                                                                                 | D                                                                                 | C                                                                                 | A                                                                                 |
| Approach Delay (s)                | 10.3                                                                              |                                                                                   | 26.3                                                                              |                                                                                   |                                                                                   | 7.4                                                                               |
| Approach LOS                      | B                                                                                 |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | A                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 15.7                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.83                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 14.3                                                                              |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 81.7%                                                                             |                                                                                   | ICU Level of Service                                                              | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

The Cove  
4: OR 213 & Redland Rd

Total Traffic PM Peak Hour

7/27/2015

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |
| Volume (vph)                      | 0                                                                                 | 0                                                                                 | 188                                                                               | 0                                                                                 | 0                                                                                 | 419                                                                               | 0                                                                                 | 1741                                                                                | 186                                                                                 | 0                                                                                   | 2822                                                                                | 472                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   | 0.91                                                                                | 1.00                                                                                |                                                                                     | 0.91                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.98                                                                                |                                                                                     | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   | 1.00                                                                                | 0.85                                                                                |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   |                                                                                   | 2814                                                                              |                                                                                   |                                                                                   | 2842                                                                              |                                                                                   | 5036                                                                                | 1582                                                                                |                                                                                     | 4988                                                                                | 1521                                                                                |
| Flt Permitted                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   |                                                                                   | 2814                                                                              |                                                                                   |                                                                                   | 2842                                                                              |                                                                                   | 5036                                                                                | 1582                                                                                |                                                                                     | 4988                                                                                | 1521                                                                                |
| 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)                   | 0                                                                                 | 0                                                                                 | 196                                                                               | 0                                                                                 | 0                                                                                 | 436                                                                               | 0                                                                                 | 1814                                                                                | 194                                                                                 | 0                                                                                   | 2940                                                                                | 492                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 53                                                                                | 0                                                                                 | 0                                                                                 | 63                                                                                | 0                                                                                 | 0                                                                                   | 47                                                                                  | 0                                                                                   | 0                                                                                   | 84                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 143                                                                               | 0                                                                                 | 0                                                                                 | 373                                                                               | 0                                                                                 | 1814                                                                                | 147                                                                                 | 0                                                                                   | 2940                                                                                | 408                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                | 0%                                                                                | 1%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 4%                                                                                | 3%                                                                                  | 0%                                                                                  | 0%                                                                                  | 4%                                                                                  | 4%                                                                                  |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   | NA                                                                                  | Perm                                                                                |                                                                                     | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 5                                                                                 |                                                                                   |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             |                                                                                   |                                                                                   | 12.2                                                                              |                                                                                   |                                                                                   | 21.7                                                                              |                                                                                   | 98.3                                                                                | 98.3                                                                                |                                                                                     | 107.8                                                                               | 107.8                                                                               |
| Effective Green, g (s)            |                                                                                   |                                                                                   | 12.2                                                                              |                                                                                   |                                                                                   | 21.7                                                                              |                                                                                   | 98.3                                                                                | 98.3                                                                                |                                                                                     | 107.8                                                                               | 107.8                                                                               |
| Actuated g/C Ratio                |                                                                                   |                                                                                   | 0.09                                                                              |                                                                                   |                                                                                   | 0.17                                                                              |                                                                                   | 0.76                                                                                | 0.76                                                                                |                                                                                     | 0.83                                                                                | 0.83                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   | 4.8                                                                                 | 4.8                                                                                 |                                                                                     | 4.8                                                                                 | 4.8                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   |                                                                                   | 264                                                                               |                                                                                   |                                                                                   | 474                                                                               |                                                                                   | 3807                                                                                | 1196                                                                                |                                                                                     | 4136                                                                                | 1261                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.36                                                                                |                                                                                     |                                                                                     | c0.59                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | c0.05                                                                             |                                                                                   |                                                                                   | c0.13                                                                             |                                                                                   |                                                                                     | 0.09                                                                                |                                                                                     |                                                                                     | 0.27                                                                                |
| v/c Ratio                         |                                                                                   |                                                                                   | 0.54                                                                              |                                                                                   |                                                                                   | 0.79                                                                              |                                                                                   | 0.48                                                                                | 0.12                                                                                |                                                                                     | 0.71                                                                                | 0.32                                                                                |
| Uniform Delay, d1                 |                                                                                   |                                                                                   | 56.2                                                                              |                                                                                   |                                                                                   | 51.9                                                                              |                                                                                   | 6.0                                                                                 | 4.3                                                                                 |                                                                                     | 4.6                                                                                 | 2.6                                                                                 |
| Progression Factor                |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.42                                                                                | 3.14                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   |                                                                                   | 1.4                                                                               |                                                                                   |                                                                                   | 8.0                                                                               |                                                                                   | 0.3                                                                                 | 0.2                                                                                 |                                                                                     | 1.1                                                                                 | 0.7                                                                                 |
| Delay (s)                         |                                                                                   |                                                                                   | 57.6                                                                              |                                                                                   |                                                                                   | 59.9                                                                              |                                                                                   | 8.9                                                                                 | 13.5                                                                                |                                                                                     | 5.7                                                                                 | 3.3                                                                                 |
| Level of Service                  |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   | A                                                                                   | B                                                                                   |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 57.6                                                                              |                                                                                   |                                                                                   | 59.9                                                                              |                                                                                   |                                                                                   | 9.3                                                                                 |                                                                                     |                                                                                     | 5.3                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 12.3                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.70                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     | 10.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 69.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

The Cove  
5: OR 213 & Redland Rd

Total Traffic PM Peak Hour  
7/27/2015

|                                   |                                                                                    |                                                                                    |                                                                                    |                                                                                    |                                                                                    |                                                                                    |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                                                                                                                 | EBR                                                                                                                                                                 | NBL                                                                                                                                                                 | NBT                                                                                                                                                                 | SBT                                                                                                                                                                 | SBR                                                                                                                                                                 |
| Lane Configurations               |   |   |   |   |   |   |
| Volume (vph)                      | 399                                                                                                                                                                 | 167                                                                                                                                                                 | 72                                                                                                                                                                  | 1537                                                                                                                                                                | 2303                                                                                                                                                                | 667                                                                                                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                | 1900                                                                                                                                                                |
| Total Lost time (s)               | 5.4                                                                                                                                                                 | 4.0                                                                                                                                                                 | 4.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 5.4                                                                                                                                                                 |
| Lane Util. Factor                 | 0.97                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.98                                                                                                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Frt                               | 1.00                                                                                                                                                                | 0.85                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 0.85                                                                                                                                                                |
| Flt Protected                     | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Satd. Flow (prot)                 | 3400                                                                                                                                                                | 1599                                                                                                                                                                | 1736                                                                                                                                                                | 3505                                                                                                                                                                | 3471                                                                                                                                                                | 1527                                                                                                                                                                |
| Flt Permitted                     | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 0.95                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                |
| Satd. Flow (perm)                 | 3400                                                                                                                                                                | 1599                                                                                                                                                                | 1736                                                                                                                                                                | 3505                                                                                                                                                                | 3471                                                                                                                                                                | 1527                                                                                                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                |
| Adj. Flow (vph)                   | 416                                                                                                                                                                 | 174                                                                                                                                                                 | 75                                                                                                                                                                  | 1601                                                                                                                                                                | 2399                                                                                                                                                                | 695                                                                                                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                                                                                                   | 4                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 120                                                                                                                                                                 |
| Lane Group Flow (vph)             | 416                                                                                                                                                                 | 170                                                                                                                                                                 | 75                                                                                                                                                                  | 1601                                                                                                                                                                | 2399                                                                                                                                                                | 575                                                                                                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 1                                                                                                                                                                   |
| Heavy Vehicles (%)                | 3%                                                                                                                                                                  | 1%                                                                                                                                                                  | 4%                                                                                                                                                                  | 3%                                                                                                                                                                  | 4%                                                                                                                                                                  | 4%                                                                                                                                                                  |
| Turn Type                         | Prot                                                                                                                                                                | pm+ov                                                                                                                                                               | Prot                                                                                                                                                                | NA                                                                                                                                                                  | NA                                                                                                                                                                  | pm+ov                                                                                                                                                               |
| Protected Phases                  | 8                                                                                                                                                                   | 1                                                                                                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                   | 2                                                                                                                                                                   | 8                                                                                                                                                                   |
| Permitted Phases                  |                                                                                                                                                                     | 8                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 2                                                                                                                                                                   |
| Actuated Green, G (s)             | 18.1                                                                                                                                                                | 34.1                                                                                                                                                                | 16.0                                                                                                                                                                | 100.5                                                                                                                                                               | 80.5                                                                                                                                                                | 98.6                                                                                                                                                                |
| Effective Green, g (s)            | 18.1                                                                                                                                                                | 34.1                                                                                                                                                                | 16.0                                                                                                                                                                | 100.5                                                                                                                                                               | 80.5                                                                                                                                                                | 98.6                                                                                                                                                                |
| Actuated g/C Ratio                | 0.14                                                                                                                                                                | 0.26                                                                                                                                                                | 0.12                                                                                                                                                                | 0.77                                                                                                                                                                | 0.62                                                                                                                                                                | 0.76                                                                                                                                                                |
| Clearance Time (s)                | 5.4                                                                                                                                                                 | 4.0                                                                                                                                                                 | 4.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 6.0                                                                                                                                                                 | 5.4                                                                                                                                                                 |
| Vehicle Extension (s)             | 2.3                                                                                                                                                                 | 2.3                                                                                                                                                                 | 2.3                                                                                                                                                                 | 4.8                                                                                                                                                                 | 4.8                                                                                                                                                                 | 2.3                                                                                                                                                                 |
| Lane Grp Cap (vph)                | 473                                                                                                                                                                 | 468                                                                                                                                                                 | 213                                                                                                                                                                 | 2709                                                                                                                                                                | 2149                                                                                                                                                                | 1221                                                                                                                                                                |
| v/s Ratio Prot                    | c0.12                                                                                                                                                               | 0.04                                                                                                                                                                | 0.04                                                                                                                                                                | c0.46                                                                                                                                                               | c0.69                                                                                                                                                               | 0.07                                                                                                                                                                |
| v/s Ratio Perm                    |                                                                                                                                                                     | 0.06                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     | 0.31                                                                                                                                                                |
| v/c Ratio                         | 0.88                                                                                                                                                                | 0.36                                                                                                                                                                | 0.35                                                                                                                                                                | 0.59                                                                                                                                                                | 1.12                                                                                                                                                                | 0.47                                                                                                                                                                |
| Uniform Delay, d1                 | 54.9                                                                                                                                                                | 39.1                                                                                                                                                                | 52.2                                                                                                                                                                | 6.2                                                                                                                                                                 | 24.8                                                                                                                                                                | 5.9                                                                                                                                                                 |
| Progression Factor                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                | 1.45                                                                                                                                                                | 3.99                                                                                                                                                                |
| Incremental Delay, d2             | 16.6                                                                                                                                                                | 0.3                                                                                                                                                                 | 0.6                                                                                                                                                                 | 1.0                                                                                                                                                                 | 57.6                                                                                                                                                                | 0.1                                                                                                                                                                 |
| Delay (s)                         | 71.4                                                                                                                                                                | 39.4                                                                                                                                                                | 52.8                                                                                                                                                                | 7.1                                                                                                                                                                 | 93.4                                                                                                                                                                | 23.7                                                                                                                                                                |
| Level of Service                  | E                                                                                                                                                                   | D                                                                                                                                                                   | D                                                                                                                                                                   | A                                                                                                                                                                   | F                                                                                                                                                                   | C                                                                                                                                                                   |
| Approach Delay (s)                | 62.0                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     | 9.2                                                                                                                                                                 | 77.7                                                                                                                                                                |                                                                                                                                                                     |
| Approach LOS                      | E                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     | A                                                                                                                                                                   | E                                                                                                                                                                   |                                                                                                                                                                     |
| <b>Intersection Summary</b>       |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| HCM 2000 Control Delay            |                                                                                                                                                                     |                                                                                                                                                                     | 54.5                                                                                                                                                                |                                                                                                                                                                     | HCM 2000 Level of Service                                                                                                                                           | D                                                                                                                                                                   |
| HCM 2000 Volume to Capacity ratio |                                                                                                                                                                     |                                                                                                                                                                     | 1.01                                                                                                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| Actuated Cycle Length (s)         |                                                                                                                                                                     |                                                                                                                                                                     | 130.0                                                                                                                                                               |                                                                                                                                                                     | Sum of lost time (s)                                                                                                                                                | 15.4                                                                                                                                                                |
| Intersection Capacity Utilization |                                                                                                                                                                     |                                                                                                                                                                     | 84.5%                                                                                                                                                               |                                                                                                                                                                     | ICU Level of Service                                                                                                                                                | E                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                                                                                                     |                                                                                                                                                                     | 15                                                                                                                                                                  |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |
| c Critical Lane Group             |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |

**Appendix I**  
95<sup>th</sup> Percentile Queuing  
Output Worksheets

The Cove  
1: McLoughlin Blvd & Dunes Dr

Existing AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 27                                                                                | 79                                                                                | 154                                                                               | 69                                                                                | 61                                                                                | 1663                                                                              | 100                                                                                 | 1402                                                                                | 117                                                                                 |
| v/c Ratio               | 0.13                                                                              | 0.26                                                                              | 0.74                                                                              | 0.23                                                                              | 0.41                                                                              | 0.56                                                                              | 0.52                                                                                | 0.46                                                                                | 0.12                                                                                |
| Control Delay           | 32.2                                                                              | 11.9                                                                              | 56.3                                                                              | 12.2                                                                              | 31.1                                                                              | 4.8                                                                               | 46.9                                                                                | 10.7                                                                                | 4.7                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 32.2                                                                              | 11.9                                                                              | 56.3                                                                              | 12.2                                                                              | 31.1                                                                              | 4.8                                                                               | 46.9                                                                                | 10.7                                                                                | 4.7                                                                                 |
| Queue Length 50th (ft)  | 13                                                                                | 4                                                                                 | 83                                                                                | 3                                                                                 | 36                                                                                | 61                                                                                | 55                                                                                  | 152                                                                                 | 10                                                                                  |
| Queue Length 95th (ft)  | 36                                                                                | 41                                                                                | #160                                                                              | 38                                                                                | m48                                                                               | 72                                                                                | 100                                                                                 | 213                                                                                 | 37                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 225                                                                               |                                                                                   | 221                                                                               |                                                                                   | 468                                                                               |                                                                                     | 538                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                                 |                                                                                     | 50                                                                                  |
| Base Capacity (vph)     | 239                                                                               | 335                                                                               | 240                                                                               | 328                                                                               | 220                                                                               | 2971                                                                              | 317                                                                                 | 3066                                                                                | 954                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.11                                                                              | 0.24                                                                              | 0.64                                                                              | 0.21                                                                              | 0.28                                                                              | 0.56                                                                              | 0.32                                                                                | 0.46                                                                                | 0.12                                                                                |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Existing AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 366                                                                               | 422                                                                               | 1425                                                                              | 278                                                                               | 586                                                                               | 1045 |
| v/c Ratio               | 0.73                                                                              | 0.48                                                                              | 0.89                                                                              | 0.19                                                                              | 0.94                                                                              | 0.29 |
| Control Delay           | 44.7                                                                              | 12.9                                                                              | 29.1                                                                              | 0.3                                                                               | 59.0                                                                              | 3.6  |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Total Delay             | 44.7                                                                              | 12.9                                                                              | 29.1                                                                              | 0.3                                                                               | 59.0                                                                              | 3.6  |
| Queue Length 50th (ft)  | 102                                                                               | 127                                                                               | 282                                                                               | 0                                                                                 | 365                                                                               | 26   |
| Queue Length 95th (ft)  | 146                                                                               | 189                                                                               | #390                                                                              | 0                                                                                 | #554                                                                              | 35   |
| Internal Link Dist (ft) | 531                                                                               |                                                                                   | 831                                                                               |                                                                                   |                                                                                   | 468  |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                               |      |
| Base Capacity (vph)     | 578                                                                               | 886                                                                               | 1610                                                                              | 1451                                                                              | 622                                                                               | 3586 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.63                                                                              | 0.48                                                                              | 0.89                                                                              | 0.19                                                                              | 0.94                                                                              | 0.29 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Existing AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 146                                                                               | 432                                                                               | 1141                                                                              | 838                                                                               | 211                                                                               | 1125 |
| v/c Ratio               | 0.64                                                                              | 0.29                                                                              | 0.43                                                                              | 0.74                                                                              | 0.85                                                                              | 0.31 |
| Control Delay           | 48.8                                                                              | 0.5                                                                               | 13.3                                                                              | 7.5                                                                               | 55.6                                                                              | 2.9  |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Total Delay             | 48.8                                                                              | 0.5                                                                               | 13.3                                                                              | 7.5                                                                               | 55.6                                                                              | 2.9  |
| Queue Length 50th (ft)  | 79                                                                                | 0                                                                                 | 134                                                                               | 33                                                                                | 123                                                                               | 38   |
| Queue Length 95th (ft)  | 132                                                                               | 0                                                                                 | 192                                                                               | 191                                                                               | #229                                                                              | 69   |
| Internal Link Dist (ft) | 398                                                                               |                                                                                   | 467                                                                               |                                                                                   |                                                                                   | 831  |
| Turn Bay Length (ft)    |                                                                                   | 200                                                                               |                                                                                   | 225                                                                               | 600                                                                               |      |
| Base Capacity (vph)     | 328                                                                               | 1495                                                                              | 2642                                                                              | 1133                                                                              | 259                                                                               | 3637 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.45                                                                              | 0.29                                                                              | 0.43                                                                              | 0.74                                                                              | 0.81                                                                              | 0.31 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBR                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 64                                                                                | 403                                                                               | 2428                                                                              | 142                                                                               | 1590                                                                              | 459                                                                               |
| v/c Ratio               | 0.14                                                                              | 0.85                                                                              | 0.65                                                                              | 0.13                                                                              | 0.40                                                                              | 0.38                                                                              |
| Control Delay           | 2.8                                                                               | 59.3                                                                              | 10.8                                                                              | 1.6                                                                               | 5.7                                                                               | 1.4                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 2.8                                                                               | 59.3                                                                              | 10.8                                                                              | 1.6                                                                               | 5.7                                                                               | 1.4                                                                               |
| Queue Length 50th (ft)  | 0                                                                                 | 154                                                                               | 334                                                                               | 6                                                                                 | 179                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 7                                                                                 | 214                                                                               | 421                                                                               | m9                                                                                | 206                                                                               | 28                                                                                |
| Internal Link Dist (ft) |                                                                                   |                                                                                   | 1644                                                                              |                                                                                   | 882                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 500                                                                               |                                                                                   | 475                                                                               |
| Base Capacity (vph)     | 607                                                                               | 559                                                                               | 3708                                                                              | 1062                                                                              | 3926                                                                              | 1217                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.11                                                                              | 0.72                                                                              | 0.65                                                                              | 0.13                                                                              | 0.40                                                                              | 0.38                                                                              |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 596                                                                               | 135                                                                               | 100                                                                               | 2053                                                                              | 1303                                                                              | 317                                                                               |
| v/c Ratio               | 0.92                                                                              | 0.24                                                                              | 0.48                                                                              | 0.85                                                                              | 0.68                                                                              | 0.25                                                                              |
| Control Delay           | 71.1                                                                              | 19.6                                                                              | 61.5                                                                              | 18.5                                                                              | 17.6                                                                              | 0.5                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 71.1                                                                              | 19.6                                                                              | 61.5                                                                              | 18.5                                                                              | 17.6                                                                              | 0.5                                                                               |
| Queue Length 50th (ft)  | 254                                                                               | 50                                                                                | 80                                                                                | 614                                                                               | 401                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | #353                                                                              | 100                                                                               | 140                                                                               | 742                                                                               | 484                                                                               | 2                                                                                 |
| Internal Link Dist (ft) | 764                                                                               |                                                                                   |                                                                                   | 753                                                                               | 1644                                                                              |                                                                                   |
| Turn Bay Length (ft)    | 400                                                                               |                                                                                   | 415                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Base Capacity (vph)     | 669                                                                               | 572                                                                               | 209                                                                               | 2407                                                                              | 1906                                                                              | 1275                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.89                                                                              | 0.24                                                                              | 0.48                                                                              | 0.85                                                                              | 0.68                                                                              | 0.25                                                                              |

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
1: McLoughlin Blvd & Dunes Dr

Existing PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 21                                                                                | 59                                                                                | 262                                                                               | 88                                                                                | 54                                                                                | 1341                                                                              | 145                                                                                 | 1590                                                                                | 198                                                                                 |
| v/c Ratio               | 0.07                                                                              | 0.14                                                                              | 0.82                                                                              | 0.20                                                                              | 0.42                                                                              | 0.51                                                                              | 0.67                                                                                | 0.54                                                                                | 0.21                                                                                |
| Control Delay           | 29.7                                                                              | 9.0                                                                               | 59.7                                                                              | 8.8                                                                               | 26.3                                                                              | 7.1                                                                               | 60.9                                                                                | 16.4                                                                                | 10.0                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 29.7                                                                              | 9.0                                                                               | 59.7                                                                              | 8.8                                                                               | 26.3                                                                              | 7.1                                                                               | 60.9                                                                                | 16.4                                                                                | 10.0                                                                                |
| Queue Length 50th (ft)  | 12                                                                                | 2                                                                                 | 176                                                                               | 4                                                                                 | 35                                                                                | 50                                                                                | 99                                                                                  | 243                                                                                 | 42                                                                                  |
| Queue Length 95th (ft)  | 29                                                                                | 31                                                                                | 248                                                                               | 39                                                                                | m39                                                                               | m50                                                                               | 159                                                                                 | 366                                                                                 | 103                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 225                                                                               |                                                                                   | 221                                                                               |                                                                                   | 468                                                                               |                                                                                     | 538                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                                 |                                                                                     | 50                                                                                  |
| Base Capacity (vph)     | 386                                                                               | 518                                                                               | 418                                                                               | 551                                                                               | 193                                                                               | 2618                                                                              | 292                                                                                 | 2970                                                                                | 946                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 4                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 54                                                                                  | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.05                                                                              | 0.11                                                                              | 0.63                                                                              | 0.16                                                                              | 0.28                                                                              | 0.51                                                                              | 0.50                                                                                | 0.55                                                                                | 0.21                                                                                |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Existing PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 816                                                                               | 315                                                                               | 1180                                                                              | 226                                                                               | 510                                                                               | 1394 |
| v/c Ratio               | 0.87                                                                              | 0.28                                                                              | 1.09                                                                              | 0.15                                                                              | 0.76                                                                              | 0.43 |
| Control Delay           | 48.5                                                                              | 6.2                                                                               | 89.2                                                                              | 0.2                                                                               | 45.0                                                                              | 14.4 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.8                                                                               | 0.0  |
| Total Delay             | 48.5                                                                              | 6.2                                                                               | 89.2                                                                              | 0.2                                                                               | 46.8                                                                              | 14.4 |
| Queue Length 50th (ft)  | 280                                                                               | 70                                                                                | ~355                                                                              | 0                                                                                 | 361                                                                               | 282  |
| Queue Length 95th (ft)  | 341                                                                               | 92                                                                                | #495                                                                              | 0                                                                                 | 475                                                                               | 361  |
| Internal Link Dist (ft) | 531                                                                               |                                                                                   | 831                                                                               |                                                                                   |                                                                                   | 468  |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                               |      |
| Base Capacity (vph)     | 1066                                                                              | 1120                                                                              | 1078                                                                              | 1518                                                                              | 675                                                                               | 3205 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 64                                                                                | 0    |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.77                                                                              | 0.28                                                                              | 1.09                                                                              | 0.15                                                                              | 0.83                                                                              | 0.43 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Existing PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Group Flow (vph)   | 123                                                                               | 464                                                                               | 1028                                                                              | 818                                                                               | 327                                                                               | 1854                                                                              |
| v/c Ratio               | 0.64                                                                              | 0.29                                                                              | 0.40                                                                              | 0.79                                                                              | 0.80                                                                              | 0.47                                                                              |
| Control Delay           | 61.1                                                                              | 0.5                                                                               | 18.1                                                                              | 14.9                                                                              | 36.3                                                                              | 2.9                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 61.1                                                                              | 0.5                                                                               | 18.1                                                                              | 14.9                                                                              | 36.3                                                                              | 2.9                                                                               |
| Queue Length 50th (ft)  | 84                                                                                | 0                                                                                 | 154                                                                               | 146                                                                               | 148                                                                               | 69                                                                                |
| Queue Length 95th (ft)  | 139                                                                               | 0                                                                                 | 241                                                                               | #514                                                                              | m195                                                                              | 79                                                                                |
| Internal Link Dist (ft) | 398                                                                               |                                                                                   | 467                                                                               |                                                                                   |                                                                                   | 831                                                                               |
| Turn Bay Length (ft)    |                                                                                   | 200                                                                               |                                                                                   | 225                                                                               | 600                                                                               |                                                                                   |
| Base Capacity (vph)     | 230                                                                               | 1583                                                                              | 2597                                                                              | 1033                                                                              | 653                                                                               | 4016                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.53                                                                              | 0.29                                                                              | 0.40                                                                              | 0.79                                                                              | 0.50                                                                              | 0.46                                                                              |

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBR                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 191                                                                               | 426                                                                               | 1734                                                                              | 189                                                                               | 2868                                                                              | 479                                                                               |
| v/c Ratio               | 0.67                                                                              | 0.82                                                                              | 0.46                                                                              | 0.15                                                                              | 0.69                                                                              | 0.36                                                                              |
| Control Delay           | 51.0                                                                              | 55.1                                                                              | 9.8                                                                               | 2.9                                                                               | 5.3                                                                               | 1.0                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 51.0                                                                              | 55.1                                                                              | 9.8                                                                               | 2.9                                                                               | 5.3                                                                               | 1.0                                                                               |
| Queue Length 50th (ft)  | 61                                                                                | 164                                                                               | 223                                                                               | 11                                                                                | 259                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 103                                                                               | 218                                                                               | 283                                                                               | m34                                                                               | 366                                                                               | 18                                                                                |
| Internal Link Dist (ft) |                                                                                   |                                                                                   | 1644                                                                              |                                                                                   | 882                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 500                                                                               |                                                                                   | 475                                                                               |
| Base Capacity (vph)     | 593                                                                               | 797                                                                               | 3787                                                                              | 1237                                                                              | 4182                                                                              | 1340                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.32                                                                              | 0.53                                                                              | 0.46                                                                              | 0.15                                                                              | 0.69                                                                              | 0.36                                                                              |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 392                                                                               | 146                                                                               | 73                                                                                | 1542                                                                              | 2341                                                                              | 678                                                                               |
| v/c Ratio               | 0.84                                                                              | 0.30                                                                              | 0.34                                                                              | 0.57                                                                              | 1.09                                                                              | 0.53                                                                              |
| Control Delay           | 71.2                                                                              | 35.1                                                                              | 57.2                                                                              | 7.0                                                                               | 80.3                                                                              | 5.4                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 71.2                                                                              | 35.1                                                                              | 57.2                                                                              | 7.0                                                                               | 80.3                                                                              | 5.4                                                                               |
| Queue Length 50th (ft)  | 167                                                                               | 90                                                                                | 57                                                                                | 241                                                                               | ~1198                                                                             | 149                                                                               |
| Queue Length 95th (ft)  | #238                                                                              | 149                                                                               | 107                                                                               | 288                                                                               | #1344                                                                             | 250                                                                               |
| Internal Link Dist (ft) | 764                                                                               |                                                                                   |                                                                                   | 753                                                                               | 1644                                                                              |                                                                                   |
| Turn Bay Length (ft)    | 400                                                                               |                                                                                   | 415                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Base Capacity (vph)     | 486                                                                               | 487                                                                               | 213                                                                               | 2716                                                                              | 2156                                                                              | 1291                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.81                                                                              | 0.30                                                                              | 0.34                                                                              | 0.57                                                                              | 1.09                                                                              | 0.53                                                                              |

#### Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

|                         |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 28                                                                                | 81                                                                                | 158                                                                               | 70                                                                                | 62                                                                                | 1825                                                                              | 102                                                                                 | 1542                                                                                | 120                                                                                 |
| v/c Ratio               | 0.13                                                                              | 0.27                                                                              | 0.75                                                                              | 0.24                                                                              | 0.41                                                                              | 0.62                                                                              | 0.53                                                                                | 0.51                                                                                | 0.13                                                                                |
| Control Delay           | 32.5                                                                              | 11.9                                                                              | 57.8                                                                              | 12.2                                                                              | 29.2                                                                              | 5.0                                                                               | 47.0                                                                                | 11.4                                                                                | 4.9                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 32.5                                                                              | 11.9                                                                              | 57.8                                                                              | 12.2                                                                              | 29.2                                                                              | 5.2                                                                               | 47.0                                                                                | 11.4                                                                                | 4.9                                                                                 |
| Queue Length 50th (ft)  | 14                                                                                | 4                                                                                 | 85                                                                                | 3                                                                                 | 35                                                                                | 65                                                                                | 56                                                                                  | 177                                                                                 | 11                                                                                  |
| Queue Length 95th (ft)  | 38                                                                                | 43                                                                                | #173                                                                              | 39                                                                                | m45                                                                               | m68                                                                               | 101                                                                                 | 242                                                                                 | 38                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 225                                                                               |                                                                                   | 221                                                                               |                                                                                   | 468                                                                               |                                                                                     | 538                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                                 |                                                                                     | 50                                                                                  |
| Base Capacity (vph)     | 238                                                                               | 335                                                                               | 238                                                                               | 327                                                                               | 220                                                                               | 2963                                                                              | 317                                                                                 | 3050                                                                                | 950                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 381                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.12                                                                              | 0.24                                                                              | 0.66                                                                              | 0.21                                                                              | 0.28                                                                              | 0.71                                                                              | 0.32                                                                                | 0.51                                                                                | 0.13                                                                                |

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Background AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 375                                                                               | 433                                                                               | 1568                                                                              | 285                                                                               | 600                                                                               | 1149 |
| v/c Ratio               | 0.74                                                                              | 0.49                                                                              | 0.98                                                                              | 0.20                                                                              | 0.96                                                                              | 0.32 |
| Control Delay           | 45.1                                                                              | 13.1                                                                              | 40.7                                                                              | 0.3                                                                               | 62.2                                                                              | 3.4  |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Total Delay             | 45.1                                                                              | 13.1                                                                              | 40.7                                                                              | 0.3                                                                               | 62.2                                                                              | 3.4  |
| Queue Length 50th (ft)  | 104                                                                               | 131                                                                               | ~326                                                                              | 0                                                                                 | 374                                                                               | 27   |
| Queue Length 95th (ft)  | 149                                                                               | 196                                                                               | #456                                                                              | 0                                                                                 | #574                                                                              | 35   |
| Internal Link Dist (ft) | 531                                                                               |                                                                                   | 831                                                                               |                                                                                   |                                                                                   | 468  |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                               |      |
| Base Capacity (vph)     | 578                                                                               | 888                                                                               | 1603                                                                              | 1451                                                                              | 622                                                                               | 3579 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.65                                                                              | 0.49                                                                              | 0.98                                                                              | 0.20                                                                              | 0.96                                                                              | 0.32 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Background AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Group Flow (vph)   | 149                                                                               | 443                                                                               | 1255                                                                              | 858                                                                               | 216                                                                               | 1238                                                                              |
| v/c Ratio               | 0.65                                                                              | 0.30                                                                              | 0.48                                                                              | 0.76                                                                              | 0.87                                                                              | 0.34                                                                              |
| Control Delay           | 48.8                                                                              | 0.5                                                                               | 14.0                                                                              | 8.4                                                                               | 58.1                                                                              | 3.5                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 48.8                                                                              | 0.5                                                                               | 14.0                                                                              | 8.4                                                                               | 58.1                                                                              | 3.5                                                                               |
| Queue Length 50th (ft)  | 81                                                                                | 0                                                                                 | 152                                                                               | 40                                                                                | 122                                                                               | 45                                                                                |
| Queue Length 95th (ft)  | 134                                                                               | 0                                                                                 | 217                                                                               | 226                                                                               | #237                                                                              | 91                                                                                |
| Internal Link Dist (ft) | 398                                                                               |                                                                                   | 467                                                                               |                                                                                   |                                                                                   | 831                                                                               |
| Turn Bay Length (ft)    |                                                                                   | 200                                                                               |                                                                                   | 225                                                                               | 600                                                                               |                                                                                   |
| Base Capacity (vph)     | 328                                                                               | 1495                                                                              | 2628                                                                              | 1130                                                                              | 259                                                                               | 3627                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.45                                                                              | 0.30                                                                              | 0.48                                                                              | 0.76                                                                              | 0.83                                                                              | 0.34                                                                              |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBR                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 65                                                                                | 413                                                                               | 2489                                                                              | 146                                                                               | 1630                                                                              | 471                                                                               |
| v/c Ratio               | 0.13                                                                              | 0.86                                                                              | 0.67                                                                              | 0.14                                                                              | 0.42                                                                              | 0.39                                                                              |
| Control Delay           | 3.8                                                                               | 59.9                                                                              | 11.2                                                                              | 1.6                                                                               | 6.2                                                                               | 1.4                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 3.8                                                                               | 59.9                                                                              | 11.2                                                                              | 1.6                                                                               | 6.2                                                                               | 1.4                                                                               |
| Queue Length 50th (ft)  | 0                                                                                 | 159                                                                               | 363                                                                               | 6                                                                                 | 186                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 10                                                                                | 220                                                                               | 433                                                                               | m8                                                                                | 213                                                                               | 28                                                                                |
| Internal Link Dist (ft) |                                                                                   |                                                                                   | 1644                                                                              |                                                                                   | 882                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 500                                                                               |                                                                                   | 475                                                                               |
| Base Capacity (vph)     | 601                                                                               | 559                                                                               | 3693                                                                              | 1060                                                                              | 3875                                                                              | 1209                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.11                                                                              | 0.74                                                                              | 0.67                                                                              | 0.14                                                                              | 0.42                                                                              | 0.39                                                                              |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 611                                                                               | 139                                                                               | 102                                                                               | 2104                                                                              | 1335                                                                              | 325                                                                               |
| v/c Ratio               | 0.93                                                                              | 0.24                                                                              | 0.49                                                                              | 0.88                                                                              | 0.70                                                                              | 0.25                                                                              |
| Control Delay           | 73.3                                                                              | 20.6                                                                              | 61.8                                                                              | 20.0                                                                              | 17.8                                                                              | 0.5                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 73.3                                                                              | 20.6                                                                              | 61.8                                                                              | 20.0                                                                              | 17.8                                                                              | 0.5                                                                               |
| Queue Length 50th (ft)  | 261                                                                               | 54                                                                                | 81                                                                                | 654                                                                               | 417                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | #368                                                                              | 105                                                                               | 142                                                                               | 792                                                                               | 504                                                                               | 2                                                                                 |
| Internal Link Dist (ft) | 764                                                                               |                                                                                   |                                                                                   | 753                                                                               | 1644                                                                              |                                                                                   |
| Turn Bay Length (ft)    | 400                                                                               |                                                                                   | 415                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Base Capacity (vph)     | 669                                                                               | 572                                                                               | 209                                                                               | 2402                                                                              | 1901                                                                              | 1284                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.91                                                                              | 0.24                                                                              | 0.49                                                                              | 0.88                                                                              | 0.70                                                                              | 0.25                                                                              |

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
1: McLoughlin Blvd & Dunes Dr

Background PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 22                                                                                | 60                                                                                | 269                                                                               | 90                                                                                | 55                                                                                | 1375                                                                              | 148                                                                                 | 1629                                                                                | 203                                                                                 |
| v/c Ratio               | 0.07                                                                              | 0.14                                                                              | 0.83                                                                              | 0.20                                                                              | 0.42                                                                              | 0.53                                                                              | 0.68                                                                                | 0.55                                                                                | 0.22                                                                                |
| Control Delay           | 29.6                                                                              | 8.9                                                                               | 60.3                                                                              | 8.6                                                                               | 25.4                                                                              | 7.6                                                                               | 61.2                                                                                | 16.9                                                                                | 10.2                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 29.6                                                                              | 8.9                                                                               | 60.4                                                                              | 8.6                                                                               | 25.4                                                                              | 7.6                                                                               | 61.2                                                                                | 16.9                                                                                | 10.2                                                                                |
| Queue Length 50th (ft)  | 12                                                                                | 2                                                                                 | 180                                                                               | 4                                                                                 | 35                                                                                | 52                                                                                | 101                                                                                 | 256                                                                                 | 45                                                                                  |
| Queue Length 95th (ft)  | 30                                                                                | 32                                                                                | 256                                                                               | 40                                                                                | m38                                                                               | m50                                                                               | 162                                                                                 | 379                                                                                 | 107                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 225                                                                               |                                                                                   | 221                                                                               |                                                                                   | 468                                                                               |                                                                                     | 538                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                                 |                                                                                     | 50                                                                                  |
| Base Capacity (vph)     | 384                                                                               | 518                                                                               | 417                                                                               | 552                                                                               | 193                                                                               | 2592                                                                              | 292                                                                                 | 2948                                                                                | 939                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 4                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 67                                                                                  | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.06                                                                              | 0.12                                                                              | 0.65                                                                              | 0.16                                                                              | 0.28                                                                              | 0.53                                                                              | 0.51                                                                                | 0.57                                                                                | 0.22                                                                                |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Background PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 837                                                                               | 324                                                                               | 1210                                                                              | 231                                                                               | 523                                                                               | 1429 |
| v/c Ratio               | 0.88                                                                              | 0.29                                                                              | 1.15                                                                              | 0.15                                                                              | 0.77                                                                              | 0.45 |
| Control Delay           | 48.8                                                                              | 6.1                                                                               | 108.8                                                                             | 0.2                                                                               | 45.9                                                                              | 14.9 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 2.2                                                                               | 0.5  |
| Total Delay             | 48.8                                                                              | 6.1                                                                               | 108.8                                                                             | 0.2                                                                               | 48.1                                                                              | 15.4 |
| Queue Length 50th (ft)  | 288                                                                               | 71                                                                                | ~379                                                                              | 0                                                                                 | 372                                                                               | 295  |
| Queue Length 95th (ft)  | 351                                                                               | 95                                                                                | #512                                                                              | 0                                                                                 | 485                                                                               | 367  |
| Internal Link Dist (ft) | 531                                                                               |                                                                                   | 831                                                                               |                                                                                   |                                                                                   | 468  |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                               |      |
| Base Capacity (vph)     | 1066                                                                              | 1127                                                                              | 1055                                                                              | 1518                                                                              | 675                                                                               | 3182 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 64                                                                                | 1161 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.79                                                                              | 0.29                                                                              | 1.15                                                                              | 0.15                                                                              | 0.86                                                                              | 0.71 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Group Flow (vph)   | 126                                                                               | 475                                                                               | 1054                                                                              | 839                                                                               | 335                                                                               | 1901                                                                              |
| v/c Ratio               | 0.65                                                                              | 0.30                                                                              | 0.41                                                                              | 0.82                                                                              | 0.81                                                                              | 0.48                                                                              |
| Control Delay           | 61.0                                                                              | 0.5                                                                               | 18.7                                                                              | 17.0                                                                              | 36.6                                                                              | 3.1                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 61.0                                                                              | 0.5                                                                               | 18.7                                                                              | 17.0                                                                              | 36.6                                                                              | 3.1                                                                               |
| Queue Length 50th (ft)  | 86                                                                                | 0                                                                                 | 161                                                                               | 176                                                                               | 154                                                                               | 78                                                                                |
| Queue Length 95th (ft)  | 142                                                                               | 0                                                                                 | 252                                                                               | #558                                                                              | m200                                                                              | 82                                                                                |
| Internal Link Dist (ft) | 398                                                                               |                                                                                   | 467                                                                               |                                                                                   |                                                                                   | 831                                                                               |
| Turn Bay Length (ft)    |                                                                                   | 200                                                                               |                                                                                   | 225                                                                               | 600                                                                               |                                                                                   |
| Base Capacity (vph)     | 231                                                                               | 1583                                                                              | 2567                                                                              | 1024                                                                              | 653                                                                               | 4011                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.55                                                                              | 0.30                                                                              | 0.41                                                                              | 0.82                                                                              | 0.51                                                                              | 0.47                                                                              |

#### Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBR                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 196                                                                               | 436                                                                               | 1778                                                                              | 194                                                                               | 2940                                                                              | 492                                                                               |
| v/c Ratio               | 0.65                                                                              | 0.81                                                                              | 0.47                                                                              | 0.16                                                                              | 0.71                                                                              | 0.36                                                                              |
| Control Delay           | 49.6                                                                              | 54.9                                                                              | 9.7                                                                               | 2.8                                                                               | 5.9                                                                               | 1.0                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 49.6                                                                              | 54.9                                                                              | 9.7                                                                               | 2.8                                                                               | 5.9                                                                               | 1.0                                                                               |
| Queue Length 50th (ft)  | 64                                                                                | 169                                                                               | 231                                                                               | 12                                                                                | 276                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 104                                                                               | 222                                                                               | 281                                                                               | m33                                                                               | 426                                                                               | 20                                                                                |
| Internal Link Dist (ft) |                                                                                   |                                                                                   | 1644                                                                              |                                                                                   | 882                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 500                                                                               |                                                                                   | 475                                                                               |
| Base Capacity (vph)     | 610                                                                               | 841                                                                               | 3808                                                                              | 1243                                                                              | 4166                                                                              | 1351                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.32                                                                              | 0.52                                                                              | 0.47                                                                              | 0.16                                                                              | 0.71                                                                              | 0.36                                                                              |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 401                                                                               | 150                                                                               | 75                                                                                | 1580                                                                              | 2399                                                                              | 695                                                                               |
| v/c Ratio               | 0.86                                                                              | 0.31                                                                              | 0.35                                                                              | 0.58                                                                              | 1.11                                                                              | 0.54                                                                              |
| Control Delay           | 72.7                                                                              | 35.5                                                                              | 57.4                                                                              | 7.1                                                                               | 90.9                                                                              | 5.5                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 72.7                                                                              | 35.5                                                                              | 57.4                                                                              | 7.1                                                                               | 90.9                                                                              | 5.5                                                                               |
| Queue Length 50th (ft)  | 171                                                                               | 93                                                                                | 59                                                                                | 253                                                                               | ~1253                                                                             | 163                                                                               |
| Queue Length 95th (ft)  | #246                                                                              | 153                                                                               | 110                                                                               | 301                                                                               | #1397                                                                             | 217                                                                               |
| Internal Link Dist (ft) | 764                                                                               |                                                                                   |                                                                                   | 753                                                                               | 1644                                                                              |                                                                                   |
| Turn Bay Length (ft)    | 400                                                                               |                                                                                   | 415                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Base Capacity (vph)     | 486                                                                               | 487                                                                               | 213                                                                               | 2714                                                                              | 2154                                                                              | 1287                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.83                                                                              | 0.31                                                                              | 0.35                                                                              | 0.58                                                                              | 1.11                                                                              | 0.54                                                                              |

#### Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
1: McLoughlin Blvd & Dunes Dr

Total Traffic AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 28                                                                                | 81                                                                                | 158                                                                               | 70                                                                                | 62                                                                                | 1941                                                                              | 102                                                                                 | 1542                                                                                | 186                                                                                 |
| v/c Ratio               | 0.14                                                                              | 0.27                                                                              | 0.76                                                                              | 0.24                                                                              | 0.40                                                                              | 0.65                                                                              | 0.53                                                                                | 0.51                                                                                | 0.19                                                                                |
| Control Delay           | 32.8                                                                              | 12.1                                                                              | 59.6                                                                              | 12.4                                                                              | 28.2                                                                              | 5.3                                                                               | 47.0                                                                                | 11.4                                                                                | 5.7                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 32.8                                                                              | 12.1                                                                              | 59.6                                                                              | 12.4                                                                              | 28.2                                                                              | 5.6                                                                               | 47.0                                                                                | 11.4                                                                                | 5.7                                                                                 |
| Queue Length 50th (ft)  | 14                                                                                | 4                                                                                 | 85                                                                                | 3                                                                                 | 36                                                                                | 72                                                                                | 56                                                                                  | 177                                                                                 | 23                                                                                  |
| Queue Length 95th (ft)  | 38                                                                                | 43                                                                                | #173                                                                              | 39                                                                                | m42                                                                               | m72                                                                               | 101                                                                                 | 242                                                                                 | 59                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 225                                                                               |                                                                                   | 221                                                                               |                                                                                   | 468                                                                               |                                                                                     | 538                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                                 |                                                                                     | 50                                                                                  |
| Base Capacity (vph)     | 234                                                                               | 331                                                                               | 234                                                                               | 323                                                                               | 220                                                                               | 2977                                                                              | 317                                                                                 | 3050                                                                                | 956                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 377                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.12                                                                              | 0.24                                                                              | 0.68                                                                              | 0.22                                                                              | 0.28                                                                              | 0.75                                                                              | 0.32                                                                                | 0.51                                                                                | 0.19                                                                                |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Total Traffic AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 375                                                                               | 466                                                                               | 1651                                                                              | 334                                                                               | 600                                                                               | 1149 |
| v/c Ratio               | 0.74                                                                              | 0.52                                                                              | 1.03                                                                              | 0.23                                                                              | 0.96                                                                              | 0.32 |
| Control Delay           | 45.1                                                                              | 13.8                                                                              | 53.7                                                                              | 0.3                                                                               | 62.2                                                                              | 3.4  |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Total Delay             | 45.1                                                                              | 13.8                                                                              | 53.7                                                                              | 0.3                                                                               | 62.2                                                                              | 3.4  |
| Queue Length 50th (ft)  | 104                                                                               | 145                                                                               | ~381                                                                              | 0                                                                                 | 374                                                                               | 27   |
| Queue Length 95th (ft)  | 149                                                                               | 218                                                                               | #493                                                                              | 0                                                                                 | #574                                                                              | 35   |
| Internal Link Dist (ft) | 531                                                                               |                                                                                   | 831                                                                               |                                                                                   |                                                                                   | 468  |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                               |      |
| Base Capacity (vph)     | 578                                                                               | 888                                                                               | 1603                                                                              | 1451                                                                              | 622                                                                               | 3579 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.65                                                                              | 0.52                                                                              | 1.03                                                                              | 0.23                                                                              | 0.96                                                                              | 0.32 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Total Traffic AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |      |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT  |
| Lane Group Flow (vph)   | 149                                                                               | 500                                                                               | 1327                                                                              | 913                                                                               | 216                                                                               | 1238 |
| v/c Ratio               | 0.65                                                                              | 0.33                                                                              | 0.50                                                                              | 0.81                                                                              | 0.87                                                                              | 0.34 |
| Control Delay           | 48.8                                                                              | 0.6                                                                               | 14.3                                                                              | 11.1                                                                              | 58.1                                                                              | 3.5  |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Total Delay             | 48.8                                                                              | 0.6                                                                               | 14.3                                                                              | 11.1                                                                              | 58.1                                                                              | 3.5  |
| Queue Length 50th (ft)  | 81                                                                                | 0                                                                                 | 164                                                                               | 58                                                                                | 122                                                                               | 45   |
| Queue Length 95th (ft)  | 134                                                                               | 0                                                                                 | 233                                                                               | #445                                                                              | #237                                                                              | 91   |
| Internal Link Dist (ft) | 398                                                                               |                                                                                   | 467                                                                               |                                                                                   |                                                                                   | 831  |
| Turn Bay Length (ft)    |                                                                                   | 200                                                                               |                                                                                   | 225                                                                               | 600                                                                               |      |
| Base Capacity (vph)     | 328                                                                               | 1495                                                                              | 2628                                                                              | 1130                                                                              | 259                                                                               | 3627 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Reduced v/c Ratio       | 0.45                                                                              | 0.33                                                                              | 0.50                                                                              | 0.81                                                                              | 0.83                                                                              | 0.34 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
4: OR 213 & Washington St/Clackamas River Dr

Total Traffic AM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBR                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 65                                                                                | 413                                                                               | 2517                                                                              | 146                                                                               | 1630                                                                              | 471                                                                               |
| v/c Ratio               | 0.13                                                                              | 0.86                                                                              | 0.68                                                                              | 0.14                                                                              | 0.42                                                                              | 0.39                                                                              |
| Control Delay           | 3.8                                                                               | 59.9                                                                              | 11.2                                                                              | 1.5                                                                               | 6.2                                                                               | 1.5                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 3.8                                                                               | 59.9                                                                              | 11.2                                                                              | 1.5                                                                               | 6.2                                                                               | 1.5                                                                               |
| Queue Length 50th (ft)  | 0                                                                                 | 159                                                                               | 372                                                                               | 6                                                                                 | 186                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 10                                                                                | 220                                                                               | 436                                                                               | m7                                                                                | 213                                                                               | 28                                                                                |
| Internal Link Dist (ft) |                                                                                   |                                                                                   | 1644                                                                              |                                                                                   | 882                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 500                                                                               |                                                                                   | 475                                                                               |
| Base Capacity (vph)     | 601                                                                               | 559                                                                               | 3693                                                                              | 1060                                                                              | 3863                                                                              | 1207                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.11                                                                              | 0.74                                                                              | 0.68                                                                              | 0.14                                                                              | 0.42                                                                              | 0.39                                                                              |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 623                                                                               | 153                                                                               | 102                                                                               | 2120                                                                              | 1335                                                                              | 325                                                                               |
| v/c Ratio               | 0.95                                                                              | 0.27                                                                              | 0.49                                                                              | 0.88                                                                              | 0.70                                                                              | 0.25                                                                              |
| Control Delay           | 75.3                                                                              | 21.8                                                                              | 61.8                                                                              | 20.6                                                                              | 17.8                                                                              | 0.5                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 75.3                                                                              | 21.8                                                                              | 61.8                                                                              | 20.6                                                                              | 17.8                                                                              | 0.5                                                                               |
| Queue Length 50th (ft)  | 268                                                                               | 63                                                                                | 81                                                                                | 667                                                                               | 417                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | #379                                                                              | 118                                                                               | 142                                                                               | 808                                                                               | 504                                                                               | 2                                                                                 |
| Internal Link Dist (ft) | 764                                                                               |                                                                                   |                                                                                   | 753                                                                               | 1644                                                                              |                                                                                   |
| Turn Bay Length (ft)    | 400                                                                               |                                                                                   | 415                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Base Capacity (vph)     | 669                                                                               | 574                                                                               | 209                                                                               | 2398                                                                              | 1897                                                                              | 1283                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.93                                                                              | 0.27                                                                              | 0.49                                                                              | 0.88                                                                              | 0.70                                                                              | 0.25                                                                              |

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
1: McLoughlin Blvd & Dunes Dr

Total Traffic PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 22                                                                                | 60                                                                                | 269                                                                               | 90                                                                                | 55                                                                                | 1513                                                                              | 148                                                                                 | 1629                                                                                | 282                                                                                 |
| v/c Ratio               | 0.07                                                                              | 0.15                                                                              | 0.84                                                                              | 0.20                                                                              | 0.42                                                                              | 0.58                                                                              | 0.68                                                                                | 0.55                                                                                | 0.30                                                                                |
| Control Delay           | 29.8                                                                              | 9.0                                                                               | 61.0                                                                              | 8.7                                                                               | 23.9                                                                              | 9.7                                                                               | 61.2                                                                                | 16.9                                                                                | 10.7                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 29.8                                                                              | 9.0                                                                               | 61.0                                                                              | 8.7                                                                               | 23.9                                                                              | 9.9                                                                               | 61.2                                                                                | 16.9                                                                                | 10.7                                                                                |
| Queue Length 50th (ft)  | 12                                                                                | 2                                                                                 | 180                                                                               | 4                                                                                 | 35                                                                                | 61                                                                                | 101                                                                                 | 256                                                                                 | 65                                                                                  |
| Queue Length 95th (ft)  | 30                                                                                | 32                                                                                | 259                                                                               | 40                                                                                | m37                                                                               | m54                                                                               | 162                                                                                 | 379                                                                                 | 147                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 225                                                                               |                                                                                   | 221                                                                               |                                                                                   | 468                                                                               |                                                                                     | 538                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                                 |                                                                                     | 50                                                                                  |
| Base Capacity (vph)     | 383                                                                               | 516                                                                               | 415                                                                               | 550                                                                               | 193                                                                               | 2596                                                                              | 292                                                                                 | 2948                                                                                | 950                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 288                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 3                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 69                                                                                  | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.06                                                                              | 0.12                                                                              | 0.65                                                                              | 0.16                                                                              | 0.28                                                                              | 0.66                                                                              | 0.51                                                                                | 0.57                                                                                | 0.30                                                                                |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

The Cove  
2: McLoughlin Blvd & I-205 SB Ramps

Total Traffic PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Group Flow (vph)   | 837                                                                               | 363                                                                               | 1308                                                                              | 312                                                                               | 523                                                                               | 1429                                                                              |
| v/c Ratio               | 0.88                                                                              | 0.32                                                                              | 1.24                                                                              | 0.21                                                                              | 0.77                                                                              | 0.45                                                                              |
| Control Delay           | 48.8                                                                              | 6.5                                                                               | 145.9                                                                             | 0.3                                                                               | 46.0                                                                              | 14.9                                                                              |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 2.2                                                                               | 0.5                                                                               |
| Total Delay             | 48.8                                                                              | 6.5                                                                               | 145.9                                                                             | 0.3                                                                               | 48.2                                                                              | 15.4                                                                              |
| Queue Length 50th (ft)  | 288                                                                               | 81                                                                                | ~433                                                                              | 0                                                                                 | 372                                                                               | 295                                                                               |
| Queue Length 95th (ft)  | 351                                                                               | 108                                                                               | #566                                                                              | 0                                                                                 | 486                                                                               | 369                                                                               |
| Internal Link Dist (ft) | 531                                                                               |                                                                                   | 831                                                                               |                                                                                   |                                                                                   | 468                                                                               |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 425                                                                               |                                                                                   |
| Base Capacity (vph)     | 1066                                                                              | 1127                                                                              | 1055                                                                              | 1518                                                                              | 675                                                                               | 3182                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 64                                                                                | 1162                                                                              |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.79                                                                              | 0.32                                                                              | 1.24                                                                              | 0.21                                                                              | 0.86                                                                              | 0.71                                                                              |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

The Cove  
3: McLoughlin Blvd/OR 99E & I-205 NB Ramps

Total Traffic PM Peak Hour  
7/28/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Group Flow (vph)   | 126                                                                               | 545                                                                               | 1166                                                                              | 931                                                                               | 335                                                                               | 1901                                                                              |
| v/c Ratio               | 0.65                                                                              | 0.34                                                                              | 0.45                                                                              | 0.91                                                                              | 0.81                                                                              | 0.48                                                                              |
| Control Delay           | 61.0                                                                              | 0.6                                                                               | 19.3                                                                              | 25.7                                                                              | 36.6                                                                              | 3.1                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 61.0                                                                              | 0.6                                                                               | 19.3                                                                              | 25.7                                                                              | 36.6                                                                              | 3.1                                                                               |
| Queue Length 50th (ft)  | 86                                                                                | 0                                                                                 | 183                                                                               | 288                                                                               | 154                                                                               | 78                                                                                |
| Queue Length 95th (ft)  | 142                                                                               | 0                                                                                 | 283                                                                               | #701                                                                              | m201                                                                              | 84                                                                                |
| Internal Link Dist (ft) | 398                                                                               |                                                                                   | 467                                                                               |                                                                                   |                                                                                   | 831                                                                               |
| Turn Bay Length (ft)    |                                                                                   | 200                                                                               |                                                                                   | 225                                                                               | 600                                                                               |                                                                                   |
| Base Capacity (vph)     | 231                                                                               | 1583                                                                              | 2567                                                                              | 1024                                                                              | 653                                                                               | 4011                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.55                                                                              | 0.34                                                                              | 0.45                                                                              | 0.91                                                                              | 0.51                                                                              | 0.47                                                                              |

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBR                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 196                                                                               | 436                                                                               | 1814                                                                              | 194                                                                               | 2940                                                                              | 492                                                                               |
| v/c Ratio               | 0.62                                                                              | 0.81                                                                              | 0.48                                                                              | 0.16                                                                              | 0.71                                                                              | 0.37                                                                              |
| Control Delay           | 47.0                                                                              | 54.9                                                                              | 9.6                                                                               | 2.6                                                                               | 6.5                                                                               | 1.1                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 47.0                                                                              | 54.9                                                                              | 9.6                                                                               | 2.6                                                                               | 6.5                                                                               | 1.1                                                                               |
| Queue Length 50th (ft)  | 64                                                                                | 169                                                                               | 237                                                                               | 12                                                                                | 276                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 100                                                                               | 222                                                                               | 269                                                                               | m27                                                                               | 505                                                                               | 23                                                                                |
| Internal Link Dist (ft) |                                                                                   |                                                                                   | 1644                                                                              |                                                                                   | 882                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 500                                                                               |                                                                                   | 475                                                                               |
| Base Capacity (vph)     | 610                                                                               | 841                                                                               | 3808                                                                              | 1243                                                                              | 4136                                                                              | 1345                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.32                                                                              | 0.52                                                                              | 0.48                                                                              | 0.16                                                                              | 0.71                                                                              | 0.37                                                                              |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Group Flow (vph)   | 416                                                                               | 174                                                                               | 75                                                                                | 1601                                                                              | 2399                                                                              | 695                                                                               |
| v/c Ratio               | 0.88                                                                              | 0.36                                                                              | 0.35                                                                              | 0.59                                                                              | 1.12                                                                              | 0.54                                                                              |
| Control Delay           | 75.5                                                                              | 36.6                                                                              | 57.4                                                                              | 7.3                                                                               | 91.3                                                                              | 5.2                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 75.5                                                                              | 36.6                                                                              | 57.4                                                                              | 7.3                                                                               | 91.3                                                                              | 5.2                                                                               |
| Queue Length 50th (ft)  | 178                                                                               | 110                                                                               | 59                                                                                | 258                                                                               | ~1253                                                                             | 163                                                                               |
| Queue Length 95th (ft)  | #262                                                                              | 176                                                                               | 110                                                                               | 307                                                                               | #1398                                                                             | 138                                                                               |
| Internal Link Dist (ft) | 764                                                                               |                                                                                   |                                                                                   | 753                                                                               | 1644                                                                              |                                                                                   |
| Turn Bay Length (ft)    | 400                                                                               |                                                                                   | 415                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Base Capacity (vph)     | 486                                                                               | 488                                                                               | 213                                                                               | 2710                                                                              | 2150                                                                              | 1286                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.86                                                                              | 0.36                                                                              | 0.35                                                                              | 0.59                                                                              | 1.12                                                                              | 0.54                                                                              |

#### Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.