

**ABERNETHY PLACE MIXED-USE DEVELOPMENT
TRAFFIC IMPACT STUDY**

OREGON CITY, OREGON

DATE:

April 18, 2017

PREPARED FOR:

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EXPIRES: 12/31/17



**LANCASTER
ENGINEERING**

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EXECUTIVE SUMMARY

1. The proposed Abernethy Place Mixed-Use Development will include the construction a 99-room hotel, 131 apartment units, 9,500 square-feet of retail space, and a 2,500 square-foot coffee shop located at 1737 Washington Street in Oregon City, Oregon.
2. The trip generation calculations show that the proposed development is projected to generate a net new total of 159 site trips during the morning peak hour and 151 site trips during the evening peak hour.
3. Based on the operational analysis, all study area intersections are projected to operate acceptably per Oregon City code standards through 2022 either with or without the addition of site trips from the proposed development.
4. Based on the crash analysis, the intersection of 14th Street at Main Street was identified as having a high crash rate. It is recommended that the intersection be converted to all-way stop control to address this safety concern. It is recommended that concurrent with conversion to all-way stop control the eastbound and westbound approaches on 14th Street be converted to have a shared left/through lane and a shared through/right lane. Additionally, it is recommended that the westbound approach to Highway 99E be converted to have a shared left/right turn lane and a dedicated right-turn lane. With these improvements in place, it is anticipated that the safety of the intersection will be improved while maintaining acceptable operation of the affected intersections.
5. It should be noted that the city's Transportation System Plan includes an alternative improvement that could address safety concerns at the intersection of 14th Street and Main Street, consisting of conversion of 14th Street to one-way eastbound from OR-99E to John Adams Street and conversion of 15th Street to one-way westbound from Washington Street to OR-99E. This alternative treatment would likely necessitate installation of a new traffic signal for the intersection of Highway 99E at 15th Street.
6. Intersection sight distance is adequate at the site access intersections. No sight distance mitigation is recommended.
7. Based on the left-turn lane warrant analysis, installation of a northbound left-turn lane on Washington Street at the site access is recommended in conjunction with development of Phase 2.
8. Since the westbound 14th Street approach to Main Street currently meets left-turn lane warrants, it is recommended that a northwest-bound left-turn lane be provided even if the intersection is not converted to all-way stop control.
9. Due to insufficient main and side-street traffic volumes, traffic signal warrants are not projected to be met for any of the unsignalized stop-controlled study intersections under any of the analysis scenarios.

10. The proposed site access intersection at Washington Street can be constructed to meet the minimum access spacing standards required by the Oregon City Municipal Code.
11. Based on the proportionality analysis, it was determined that a requirement to construct a left-turn lane serving the site access would be proportionate to the impacts of the proposed development. However, a requirement for construction of safety improvements at the intersection of 14th Street and Main Street would not proportionate to the impacts of the development. If the city desires to require mitigation from the proposed development, it may therefore be appropriate to request a proportionate share payment based on the impacts of the proposed development rather than requesting construction of the recommended improvements.



PROJECT DESCRIPTION & LOCATION

INTRODUCTION

The proposed Abernethy Place Mixed-Use Development will include the construction a 99-room hotel, 131 apartment units, 9,500 square-feet of retail space, and a 2,500 square-foot coffee shop located at 1737 Washington Street in Oregon City, Oregon. The proposed development will take access to the nearby transportation system via three points of access: the intersections of Abernethy Road at Washington Street, a proposed site access driveway onto Washington Street, and a shared access driveway onto Washington Street at the existing Amtrak station entrance.

This report addresses the impacts of the proposed development on the nearby street system. Based on correspondence with City of Oregon City staff, the report conducts safety and capacity/level-of-service analyses at the following intersections:

1. Interstate 205 (I-205) southbound ramps at McLoughlin Boulevard (OR-99E);
2. I-205 northbound ramps at OR-99E;
3. 15th Street at OR-99E;
4. 14th Street at OR-99E;
5. 14th Street at Main Street;
6. 7th Street at Washington Street;
7. 14th Street at Washington Street;
8. 15th Street at Washington Street;
9. Abernethy Road at Washington Street;
10. Proposed site access at Washington Street;
11. Amtrak station access at Washington Street;
12. Prairie Schooner Way at Washington Street;
13. Clackamas River Drive at Washington Street; and
14. Trails End Highway (OR-213) at Clackamas River Drive.

The purpose of this study is to determine whether the transportation system in the vicinity of the site is capable of safely and efficiently supporting the existing and proposed uses and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level-of-service calculations is included in the appendix to this report.

LOCATION DESCRIPTION

The project site is located northwest of Washington Street, north of 17th Street, and southeast of the Amtrak railroad tracks in Oregon City, Oregon. The subject site is located within a mixed-use area with the Oregon City Amtrak Rail Station to the northeast, the End of the Oregon Trail Interpretive Center to the southeast, a power substation and other industrial land-uses to the west, and a mix of smaller residential/commercial/industrial land-uses to the south.

The subject site includes seven tax lots; lots 601, 900, 1000, 1100, 1200, 1300, 1301; which encompass an approximate total of 4.1 acres. All seven lots are zoned as *Mixed Use Downtown*



(MUD) and are currently developed and utilized by several industrial and commercial service land-uses.

VICINITY STREETS

OR-99E is classified by the Oregon Department of Transportation (ODOT) as a Regional Highway south and a District Highway north of I-205 and by the City of Oregon City as a Major Arterial. The roadway has a varying cross-section of four to eight travel lanes and has a posted speed of 40 mph north and 30 mph south of 14th Street. On-street parking is permitted along both sides of the roadway at marked locations south of 14th Street. Curbs, sidewalks, and bicycle lanes are intermittently provided along both sides of the roadway.

Main Street is classified by the City of Oregon City as a Collector. The roadway has a two-lane cross-section with on-street parking permitted along both sides of the roadway south of 15th Street where either adequate roadway width is provided or spaces are marked. Bicycle lanes are provided along both sides of the roadway north while sharrows are marked within vehicle travel lanes south of 15th Street. Curbs and sidewalks are provided along both sides of the roadway south of 15th Street while only partially provided to the north.

Washington Street is classified by the City of Oregon City as a Minor Arterial north and a Local Street south of 5th Street. The roadway has a varying cross-section between two to six travel lanes and has a posted speed which varies between 25 mph and 35 mph within the study area. On-street parking is permitted along both sides of the roadway south of 11th Street while bicycle lanes are provided along both sides to the north. Curbs and sidewalks are provided along both sides of the roadway south and intermittently provided north of Abernethy Road.

OR-213 is classified by ODOT as a District Highway and by the City of Oregon City as an Expressway. The roadway has a varying cross-section between four to seven travel lanes and has a posted speed of 45 mph north and 55 mph south of Prairie Schooner Way. Bicycle lanes or shoulders are provided along both sides of the roadway. Curbs and sidewalks are intermittently provided along both sides of the roadway.

Clackamas River Drive is classified by the City of Oregon City as a Minor Arterial. The roadway has a two-lane cross-section north of the roundabout at Washington Street, and a four-lane cross-section to the south with two southbound travel lanes, a two-way left-turn lane, and a northbound travel lane. It has a posted speed of 40 mph north and 30 mph south of S Melinda Street. Bicycle lanes are provided along both sides of the roadway while curbs and sidewalks are intermittently provided.

Prairie Schooner Way is classified by the City of Oregon City as a Minor Arterial. The roadway has a five-lane cross-section, with two eastbound and three westbound travel lanes. Curbs and bicycle lanes are provided along both sides of the roadway.

Abernethy Road is classified by the City of Oregon City as a Minor Arterial. The roadway has a three-lane cross-section, with one travel lane and a center two-way left-turn lane, and has a posted speed of 35 mph. Bicycle lanes are provided along both sides of the roadway while curbs and sidewalks are intermittently provided along both sides.

15th Street is classified by the City of Oregon City as a Collector. The roadway has a two-lane cross-section and has a posted speed of 25 mph. On-street parking is permitted along both sides of the roadway east of Washington Street where adequate roadway width is available. Curbs and sidewalks are intermittently provided along both sides of the roadway.

14th Street is classified by the City of Oregon City as a Collector west and Local Street east of Washington Street. The roadway has a four-lane cross-section between OR-99E and Main Street, with two travel lanes in each direction, and a two-lane cross-section east of Main Street. On-street parking is permitted along both sides of the roadway east of Washington Street. Curbs and sidewalks are provided along both sides of the roadway.

7th Street is classified by the City of Oregon City as a Major Arterial. The roadway has a three-lane cross-section, with one travel lane in each direction and a center turn lane. On-street parking is permitted along the north side of the roadway between John Adams Street and John Quincy Adams Street. Curbs and sidewalks are provided along both sides of the roadway.

STUDY INTERSECTIONS

The I-205 southbound ramps intersection at OR-99E is a three-legged intersection that is controlled by a traffic signal. The northbound approach has three through lanes and one channelized right-turn lane that operates under yield control. The southbound approach has three through lanes and one left-turn lane served by protected phasing. The westbound approach has two left-turn lanes and one right-turn lane served by permitted/overlapping phasing. One crosswalk is marked across the eastern intersection leg.

The I-205 northbound ramps intersection at OR-99E is a three-legged intersection that is controlled by a traffic signal. The northbound approach has three through lanes and one right-turn lane served by permitted/overlapping phasing. The southbound approach has three through lanes and one left-turn lane served by protected phasing. The westbound approach has one left-turn lane and one channelized right-turn lane that operates under yield control. One crosswalk is marked across the eastern intersection leg.

The intersection of 15th Street at OR-99E is a three-legged intersection that is stop-controlled for the westbound approach of 15th Street. The northeast-bound approach has one through lane and one shared through/right-turn lane. The southwest-bound approach has three through lanes. The northwest-bound approach has one right-turn lane. One crosswalk is marked across the southeastern intersection leg.

The intersection of 14th Street at OR-99E is a three-legged intersection that is controlled by a traffic signal. The northeast-bound approach has one through lane and one shared through/right-turn lane. The southwest-bound approach has two through lanes and a left-turn lane served by flashing-yellow-arrow phasing. The northwest-bound approach of 14th Street has one left-turn lane and one right-turn lane served by permitted/overlapping phasing. Crosswalks are marked across all intersection legs.



The intersection of 14th Street at Main Street is a four-legged intersection that is two-way stop-controlled for the northeast-bound and southwest-bound approaches of Main Street. The northeast-bound approach has one shared left-turn/through lane and one right-turn lane. The southwest-bound and northwest-bound approaches each have one shared lane for all turning movements. The southeast-bound approach has one left-turn lane and one shared through/right-turn lane. Crosswalks are marked across all intersection legs.

The intersection of 7th Street at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound and southwest-bound approaches of Washington Street each have one left-turn lane and one shared through/right-turn lane. The northeast-bound and southwest-bound approaches operate under split phasing. The southeast-bound and northwest-bound approaches of 7th Street each have one through lane and one right-turn lane served by permitted/overlapping phasing. Left-turns from 7th Street onto Washington Street are prohibited. Crosswalks are marked across all intersection legs.

The intersection of 14th Street at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound and southwest-bound approaches of Washington Street each have one left-turn lane served by flashing-yellow-arrow phasing, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound approach has one shared lane for all turning movements. The southeast-bound approach has one shared left-turn/through lane and one right-turn lane. Crosswalks are marked across all intersection legs.

The intersection of 15th Street at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound and southwest-bound approaches of Washington Street each have one left-turn lane served by flashing-yellow-arrow phasing, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound and southeast-bound approaches each have one shared lane for all turning movements. Crosswalks are marked across all intersection legs.

The intersection of Abernethy Road at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound approach has one left-turn lane served by permitted phasing, one through lane, one right-turn lane, and a bicycle lane situated between the through and right-turn lanes. The south-westbound approach has one left-turn turn lane served by permitted phasing, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound approach has one left-turn lane served by permitted phasing and one shared through/right-turn lane. The southeast-bound approach has one shared lane for all turning movements. Crosswalks are marked across all intersection legs.

The Amtrak station/End of the Oregon Trail Interpretive Center access intersection on Washington Street is a four-legged intersection that is two-way stop-controlled for the two driveway approaches. The northeast-bound and southwest-bound approaches of Washington Street each have one left-turn lane, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound and southeast-bound approaches each have one shared lane for all turning movements. A crosswalk is marked across the southwestern intersection leg while sidewalks are in place across the northwestern and southeastern legs.

The intersection of Prairie Schooner Way at Washington Street is a three-legged intersection that is controlled by a traffic signal. The northeast-bound approach has one through lane, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The southwest-bound approach has two through lanes, one left-turn lane served by flashing-yellow-arrow phasing, and a bicycle lane to the right of the outermost standard travel lane. The westbound approach of Prairie Schooner Way has two left-turn lanes, one right-turn lane served by permitted/overlapping phasing, and a bicycle lane to the right of the outermost standard travel lane. Crosswalks are marked across the northeastern and southeastern intersection legs.

The intersection of Clackamas River Drive at Washington Street is a three-legged round-about intersection. The northeast-bound approach of Washington Street has one shared through/U-turn lane and one free-flowing channelized right-turn lane. The southwest-bound approach has one shared left-turn/through/U-turn lane. The northwest-bound approach has one shared left-turn/right-turn/U-turn lane. Crosswalks are marked across all intersection legs.

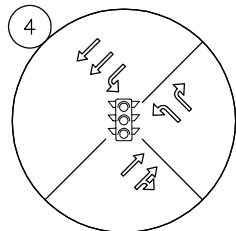
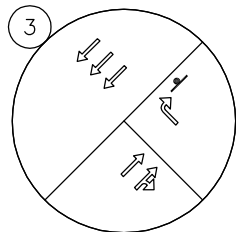
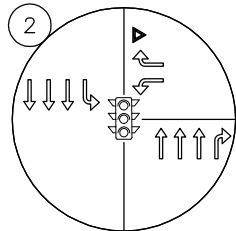
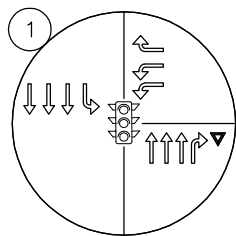
The intersection of OR-213 at Clackamas River Drive is a four-legged intersection that is controlled by a traffic signal. The northbound and southbound approaches of OR-213 each have three through lanes, one channelized right-turn lane that operates without stop/yield/signal controls, and a bicycle lane to the right of the outermost standard travel lane. The eastbound and westbound approaches of Prairie Schooner Way and Clackamas River Drive, respectively, each have two right-turn lanes and a bicycle lane to the right of the outermost standard travel lane. Crosswalks are marked across the eastern and western intersection legs.

A vicinity map displaying the project site, vicinity streets, and the study intersections with their associated lane configurations is shown in Figure 1 on page 10.

TRAFFIC COUNTS

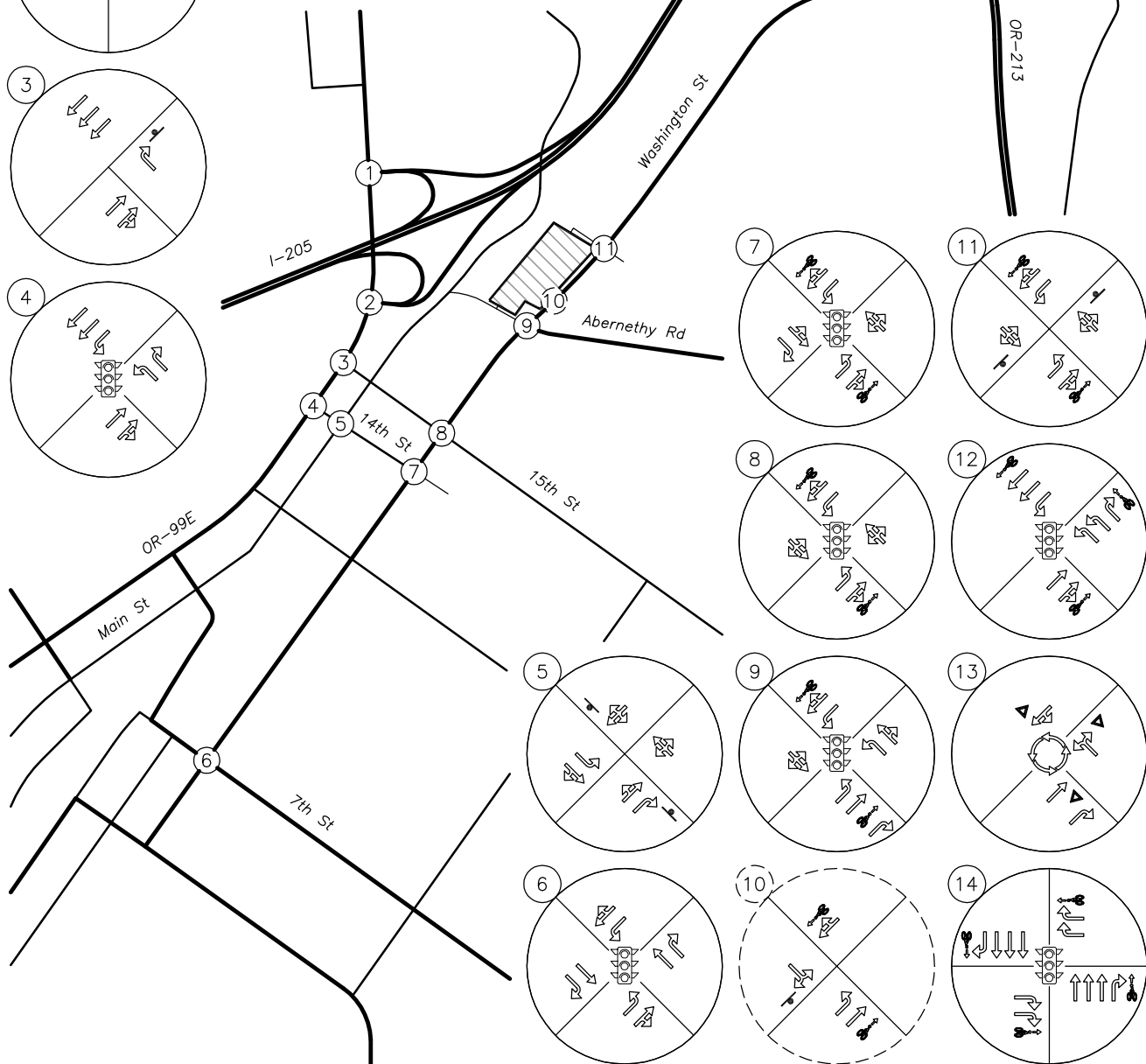
Traffic counts were conducted at the study intersections on Thursday January 26th, 2017 from 7:00 AM to 9:00 AM and on Wednesday, January 25th, 2017 from 4:00 PM to 6:00 PM. Data was used from each intersection's respective morning and evening peak hours.

Figures 2 and 3 on pages 11 and 12 show the existing morning and evening peak hour traffic volumes at the study intersections, respectively.



LEGEND

- STUDY INTERSECTION (EXISTING)
- STUDY INTERSECTION (PROPOSED)
- STOP SIGN
- YIELD SIGN
- ROUNDABOUT
- TRAFFIC SIGNAL
- BIKE LANE
- PROJECT SITE
- ARTERIAL ROADWAY
- COLLECTOR ROADWAY
- LOCAL ROADWAY

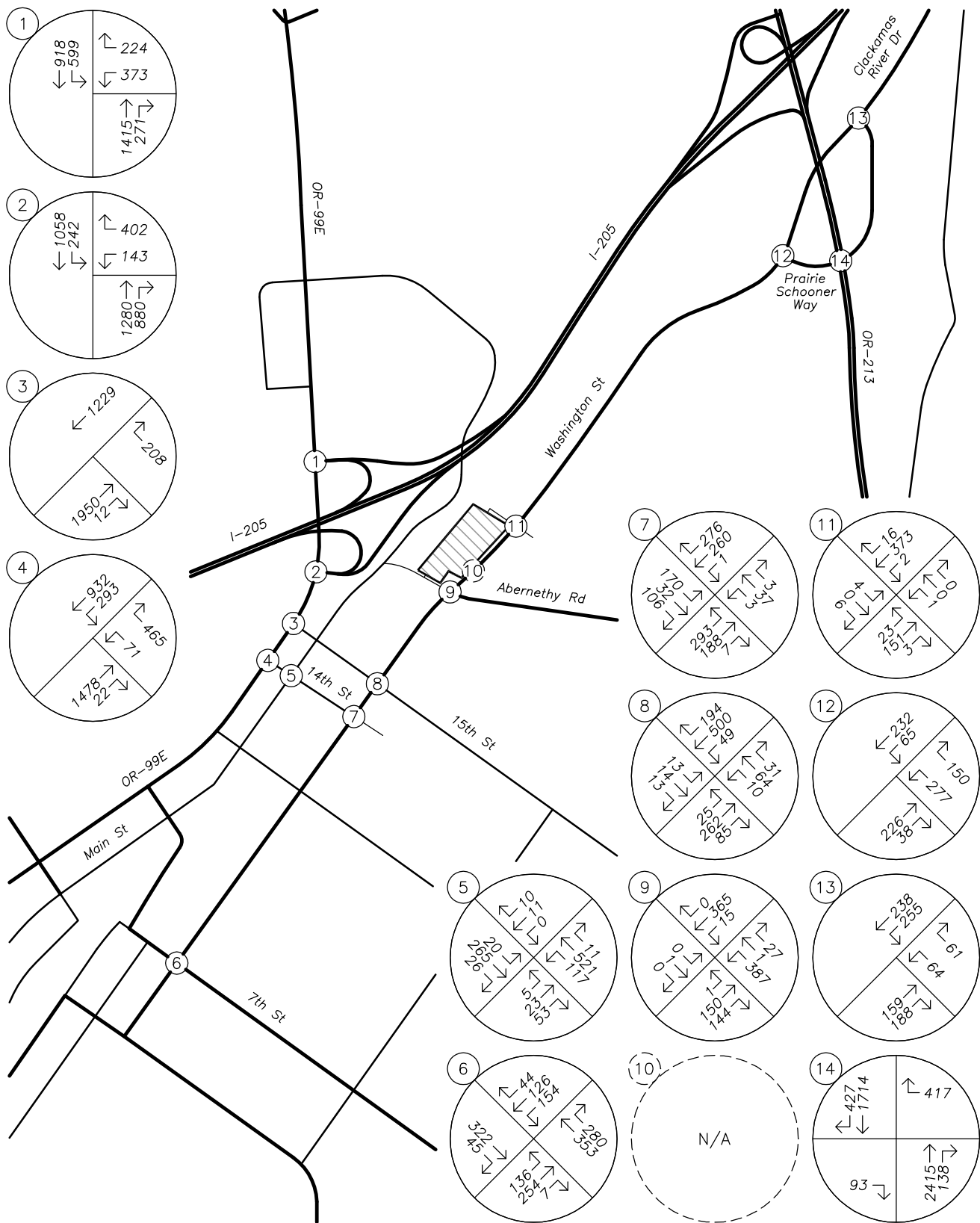


VICINITY MAP



FIGURE 1

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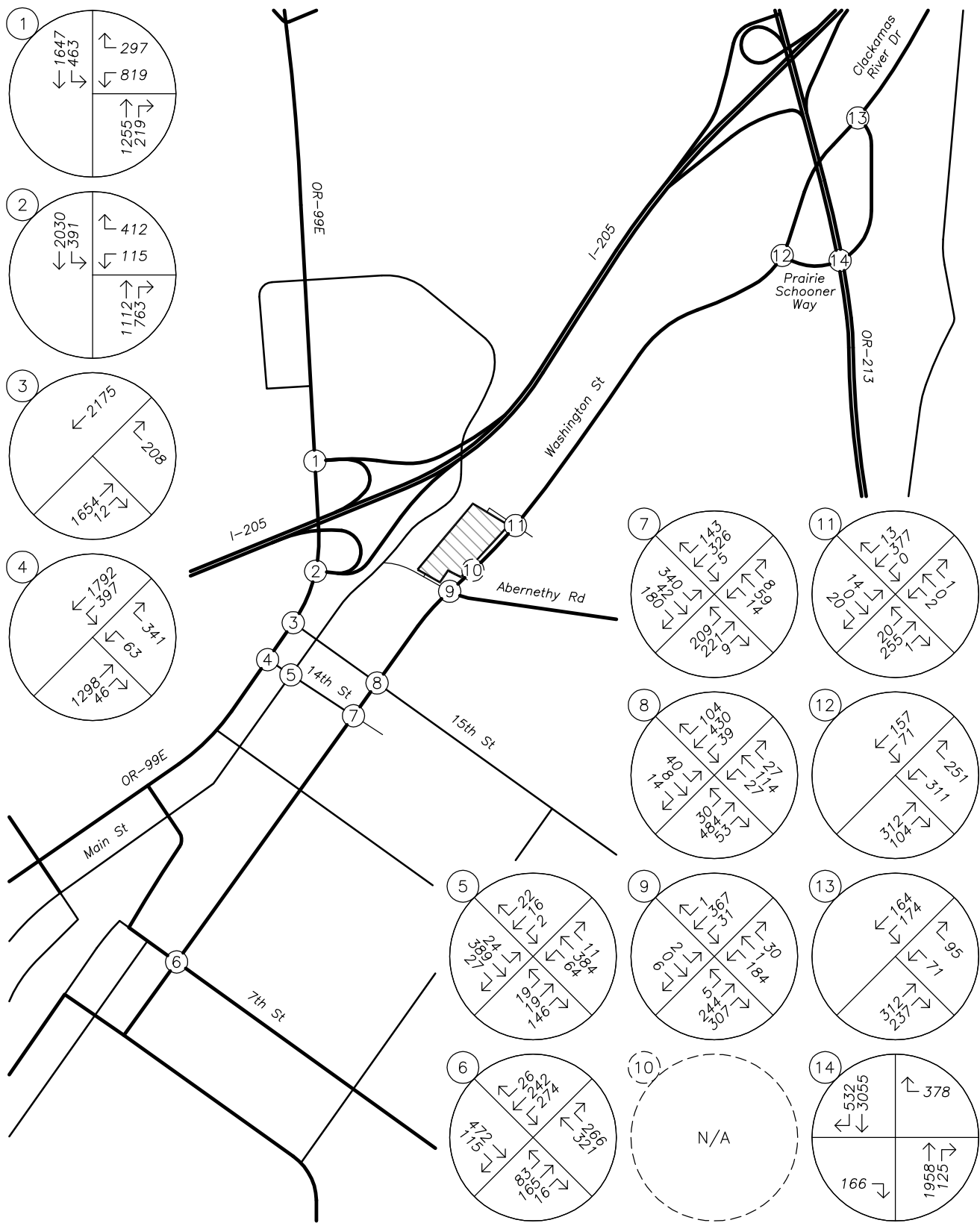


TRAFFIC VOLUMES
Existing Conditions
AM Peak Hour



FIGURE
2

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TRAFFIC VOLUMES
Existing Conditions
PM Peak Hour



FIGURE
3

PAGE
12



SITE TRIPS

TRIP GENERATION

The proposed Abernethy Place Mixed-Use Development will include the construction of a 99-room hotel, 131 apartment units, 9,500 square-feet of retail space, and a 2,500 square-foot coffee shop. To estimate the number of trips that will be generated by the proposed development, trip rates from the *TRIP GENERATION MANUAL* were used. Data from land-use code 220, *Apartments*, land-use code 310, *Hotel*, land-use code 820, *Shopping Center*, and land-use code 936, *Coffee/Donut Shop without Drive-Through Window*, were used to estimate the proposed development's trip generation based on the number of rooms for the hotel, dwelling units for the apartment, and square-footage of gross floor area for the retail space and coffee shop.

Internal Trip Generation

Given the variety of land-uses that are proposed for development within the project site (including hotel, residential, retail, and restaurant land-uses), some trips generated by this development will likely be shared/internally captured by the proposed uses within the site and will not impact the nearby transportation system. Using the National Cooperative Highway Research Programs (NCHRP) Report 684, *Enhancing Internal Trip Capture Estimation for Mixed-Use Development*, internal capture rates for the proposed development were calculated for each land-use during the morning and evening peak hours.

According to Report 684, the proposed development is expected to internally capture approximately 9 percent of site trips during the morning peak hour and 28 percent of site trips during the evening peak hour. Due to the limited variety of on-site retail and restaurant uses, the calculated internal capture rate during the evening peak hour was manually reduced to 20 percent for the evening peak hour in order to maintain a conservative analysis.

Pass-by Trip Generation

Some of the proposed land-uses are expected to attract pass-by/diverted trips to the site. Pass-by trips are trips that leave an adjacent roadway to patronize a land-use and then continue in their original direction of travel. Similar to pass-by trips, diverted trips are trips that divert from a nearby roadway not adjacent to the site to patronize a land-use before continuing to their original destination. Pass-by trips do not add additional trips to the transportation system; however, they do add additional turning movements at site access intersections. Diverted trips may add additional turning movements at other nearby intersections. Pass-by trip rates were determined using data provided in the *TRIP GENERATION HANDBOOK*, 3rd Edition¹. For the purposes of this analysis, pass-by and diverted trips were accounted for as the following:

- The proposed retail space has a pass-by trip rate of 34 percent of external trips generated based on data provided for land-use code 820 of the *TRIP GENERATION HANDBOOK*, 3rd Edition.

¹ Institute of Transportation Engineers (ITE), *TRIP GENERATION HANDBOOK*, 3rd Edition, 2014.

- The proposed coffee shop will utilize a pass-by/diverted trip rate of 82 percent for the morning peak hour and 73 percent for the evening peak hour. The calculated pass-by/diverted trip rates for the coffee shop are based on a trip generation study conducted at Starbucks facilities throughout Washington State in 2002.

Since the total number of pass-by trips which could be generated by the proposed uses exceeds the reasonable number of site trips that would be expected to divert from Washington Street, additional trips were treated as diverted-linked trips and drawn from through traffic traveling along Abernethy Road and the northbound travel lanes along Highway 99E. It is assumed that no more than five percent of the through traffic along Washington Street will enter the site as pass-by trips. An additional five percent of the through traffic along Abernethy road was assumed to divert to the site, and the remaining diverted trips were drawn from the northbound through traffic along OR-99E.

Trip Generation Analysis Results

The trip generation calculations show that the proposed development is projected to generate a net new total of 159 site trips during the morning peak hour and 151 site trips during the evening peak hour. The trip generation estimates of the proposed development are summarized in Table 2 below.

It should be noted that the development is proposed to occur in two phases. Phase 1 will consist of the 99-room hotel, while phase 2 will consist of all other proposed uses. Development of Phase 1 (prior to Phase 2) will result in a net increase of 52 trips during the morning peak hour and 59 trips during the evening peak hour, since the internal capture rates will not apply when only one use is located on the site. Development of Phase 2 will result in a net addition of 107 additional trips during the morning peak hour and 92 trips during the evening peak hour, resulting in the total projected site trips previously described.

Detailed trip generation and internal capture calculations as well as the Starbucks trip generation study are included in the technical appendix to this report.

Table 2 - Proposed Development Trip Generation Summary									
	ITE Code	Size	Morning Peak Hour			Evening Peak Hour			Weekday Total
			In	Out	Total	In	Out	Total	
Phase 1									
Hotel	310	99 units	31	21	52	30	29	59	808
Phase 1 + Phase 2									
Apartments	210	131 units	13	54	67	53	28	81	872
Internal Capture		9% (20%)	1	5	6	11	6	17	174
Net New Trips			12	49	61	42	22	64	698
Hotel	310	99 units	31	21	52	30	29	59	808
Internal Capture		9% (20%)	3	2	5	6	6	12	162
Net New Trips			28	19	47	24	23	47	646
Retail Space		9,500 sq.ft.	6	3	9	17	18	35	406
Internal Capture	820	9% (20%)	1	0	1	3	4	7	81
Pass-by Trips		34% (34%)	1	1	2	5	5	10	110
Net New Trips			4	2	6	9	9	18	215
Coffee Shop		2,500 sq.ft.	138	133	271	51	51	102	165
Internal Capture	936	9% (20%)	12	12	24	10	10	20	33
Pass-by Trips		82% (73%)	101	101	202	30	30	60	96
Net New Trips			25	20	45	11	11	22	36
Total Trip Generation			188	211	399	151	126	277	2,251
Total Internal Capture			17	19	36	30	26	56	450
Total Pass-by Trips			102	102	204	35	35	70	206
Total Net New Trips			69	90	159	86	65	151	1,595

* AM Peak Hour (PM Peak Hour and Weekday)

TRIP DISTRIBUTION

The directional distribution of primary site trips to/from the project site was estimated based on locations of likely trip destinations, locations of major transportation facilities in the site vicinity, and existing travel patterns at study intersections.

The following trip distribution was estimated and used for analysis:

- Approximately 30 percent of primary trips will travel to/from the north along OR-213;
- Approximately 15 percent of primary trips will travel to/from the east along Abernethy Road;
- Approximately 12 percent of primary trips will travel to/from the north along OR-99E;
- Approximately 10 percent of primary trips will travel to/from the southeast along 7th Street;
- Approximately 9 percent of primary trips will travel to/from the southwest along Washington Street;
- Approximately 6 percent of primary trips will travel to/from the northeast along Interstate 205 (I-205);
- Approximately 5 percent of primary trips will travel to/from the northeast along Clackamas River Drive;
- Approximately 5 percent of primary trips will travel to/from the southeast along 15th Street;
- Approximately 4 percent of primary trips will travel to/from the southwest along Main Street;
- Approximately 2 percent of primary trips will travel to/from the southwest along OR-99E; and
- Approximately 2 percent of primary trips will travel to/from the southwest along I-205.

The proposed development is planned to have three points of access to the subject site from Washington Street: the west leg of the intersection of Abernethy Road at Washington Street, a proposed site access on Washington Street approximately 200 feet northeast of Abernethy Road, and at the existing Amtrak Station access driveway. Based on the site layout, primary trips to and from the site are anticipated to utilize site access points as follows:

- Approximately 15 percent of primary trips will utilize the access at the intersection of Abernethy Road at Washington Street;
- Approximately 30 percent of primary trips will utilize the proposed access along Washington Street; and
- Approximately 55 percent of primary trips will utilize the Amtrak access along Washington Street.

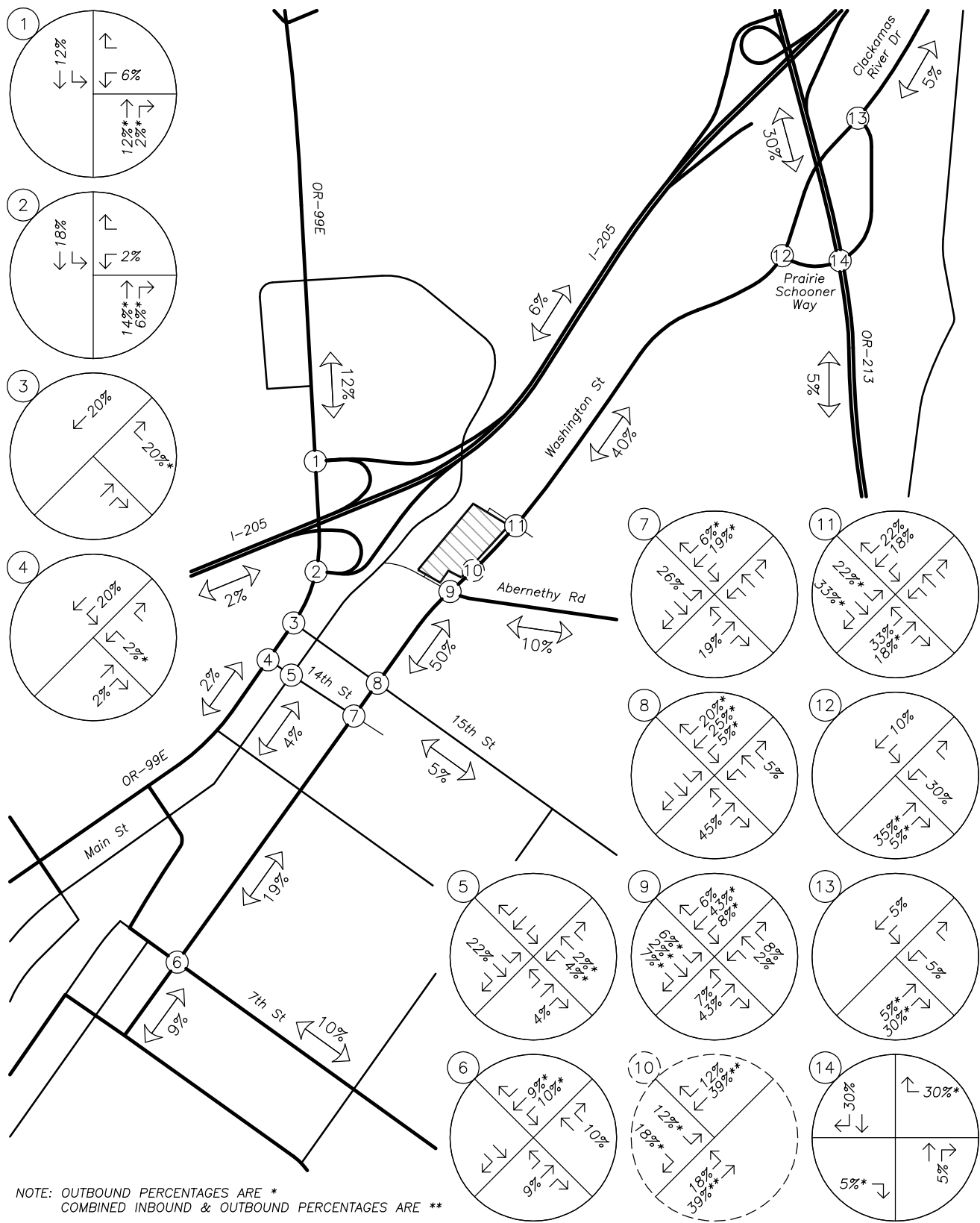
The trip distribution percentages utilized for the primary site trips generated by the proposed development are shown in Figure 4 on page 18.



The proposed mixed-use building, which will include a coffee shop and retail space, is located within the northeastern section of the project site. Since only these two land-uses are expected to generate pass-by trips, it is anticipated that pass-by trips to and from the site will utilize site access points as follows:

- Approximately 50 percent of pass-by trips will utilize the proposed access along Washington Street; and
- Approximately 50 percent of pass-by trips will utilize the Amtrak access along Washington Street.

The trip assignment for primary site trips generated by the proposed development are shown in Figure 5 on page 19 for the morning peak hour and in Figure 6 on page 20 for the evening peak hour. The trip assignment for pass-by site trips generated by the proposed coffee shop and retail space are shown in Figure 7 on page 21 for the morning peak hour and in Figure 8 on page 22 for the evening peak hour. The total site trip assignment of trips generated by the proposed development are shown in Figure 9 on page 23 for the morning peak hour and in Figure 10 on page 24 for the evening peak hour.

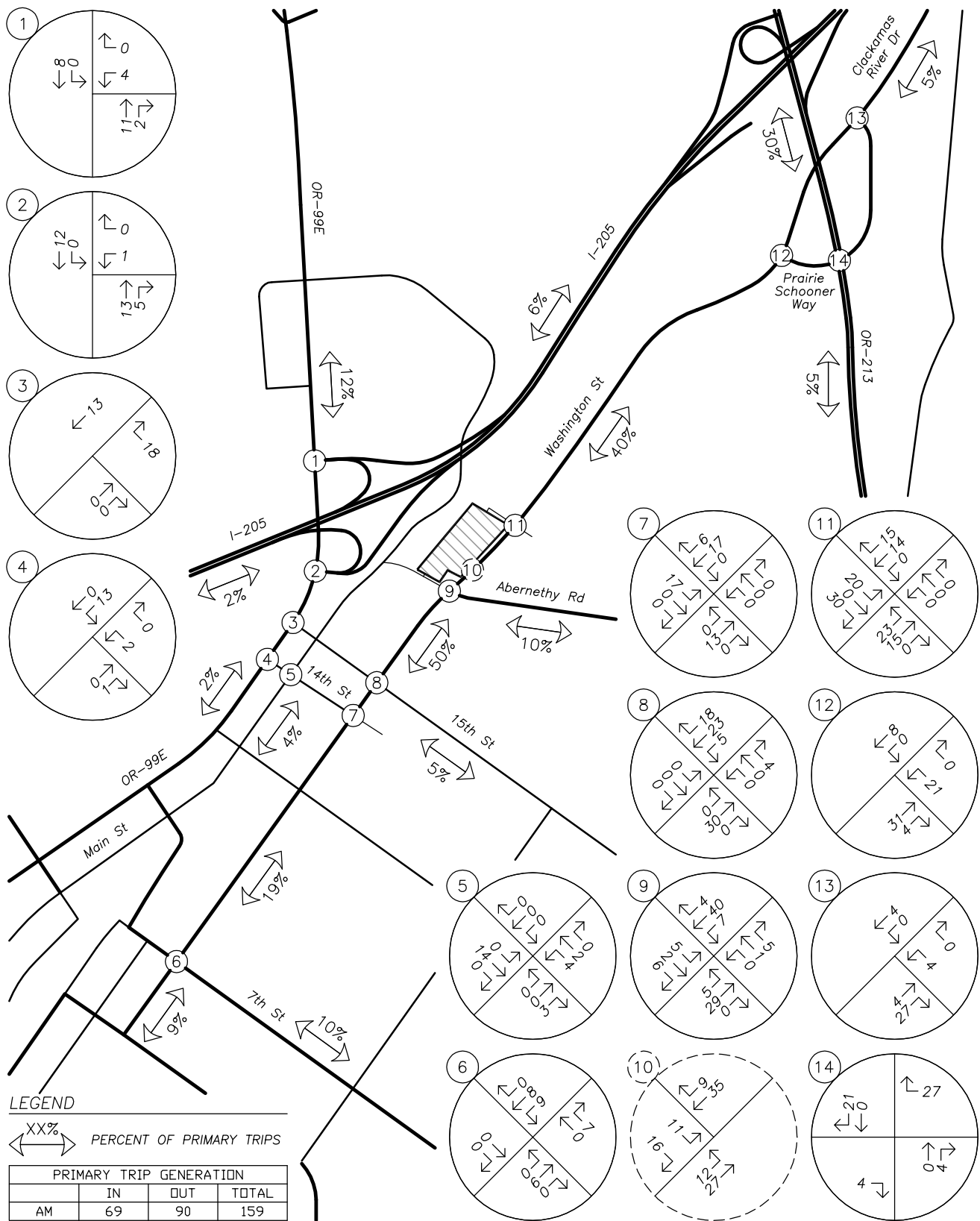


SITE TRIP DISTRIBUTION Inbound & Outbound Percentages – Primary Trips AM & PM Peak Hours



FIGURE
4

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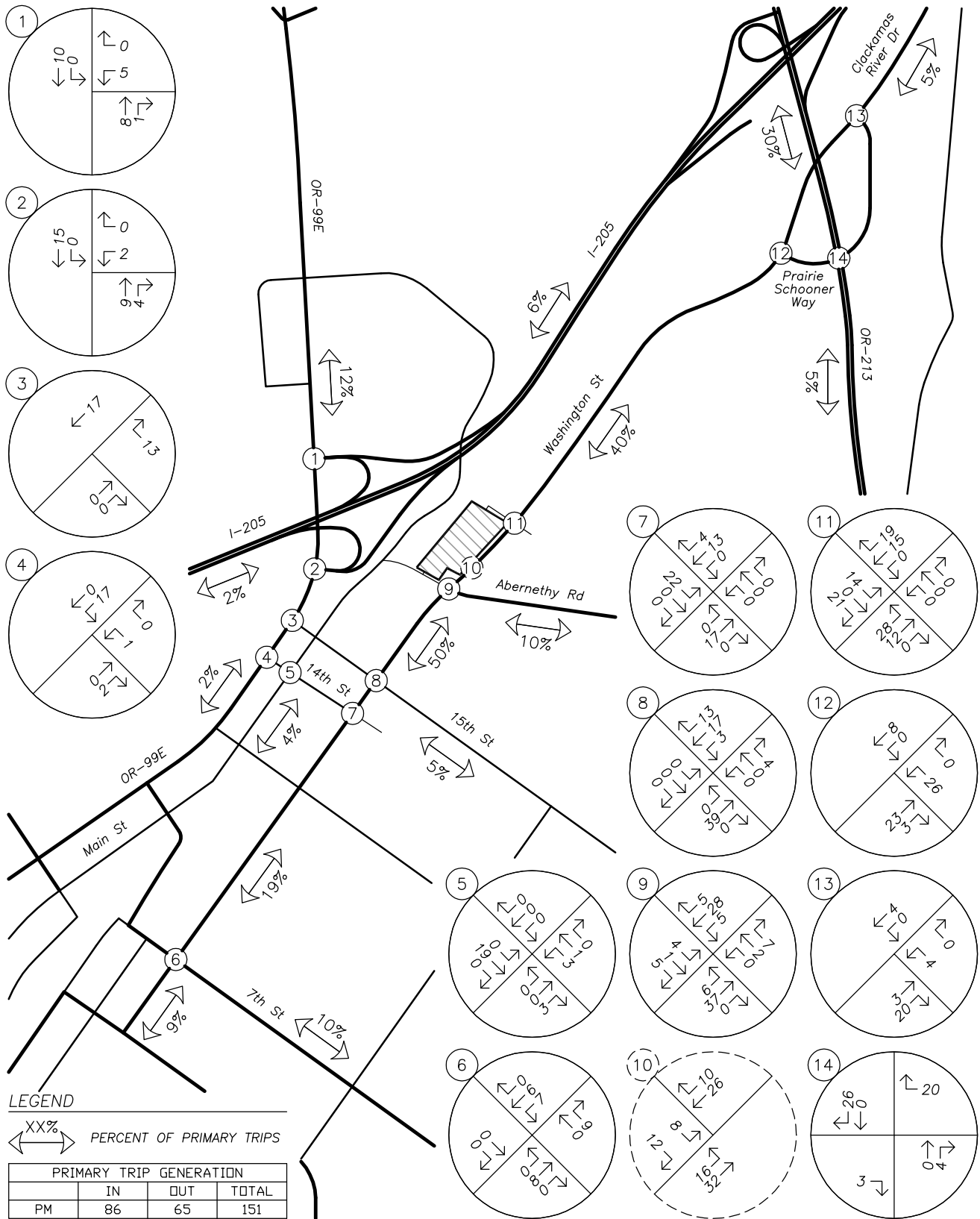


SITE TRIP DISTRIBUTION & ASSIGNMENT
 Proposed Development Plan – Primary Site Trips
 AM Peak Hour



FIGURE 5

PAGE 19

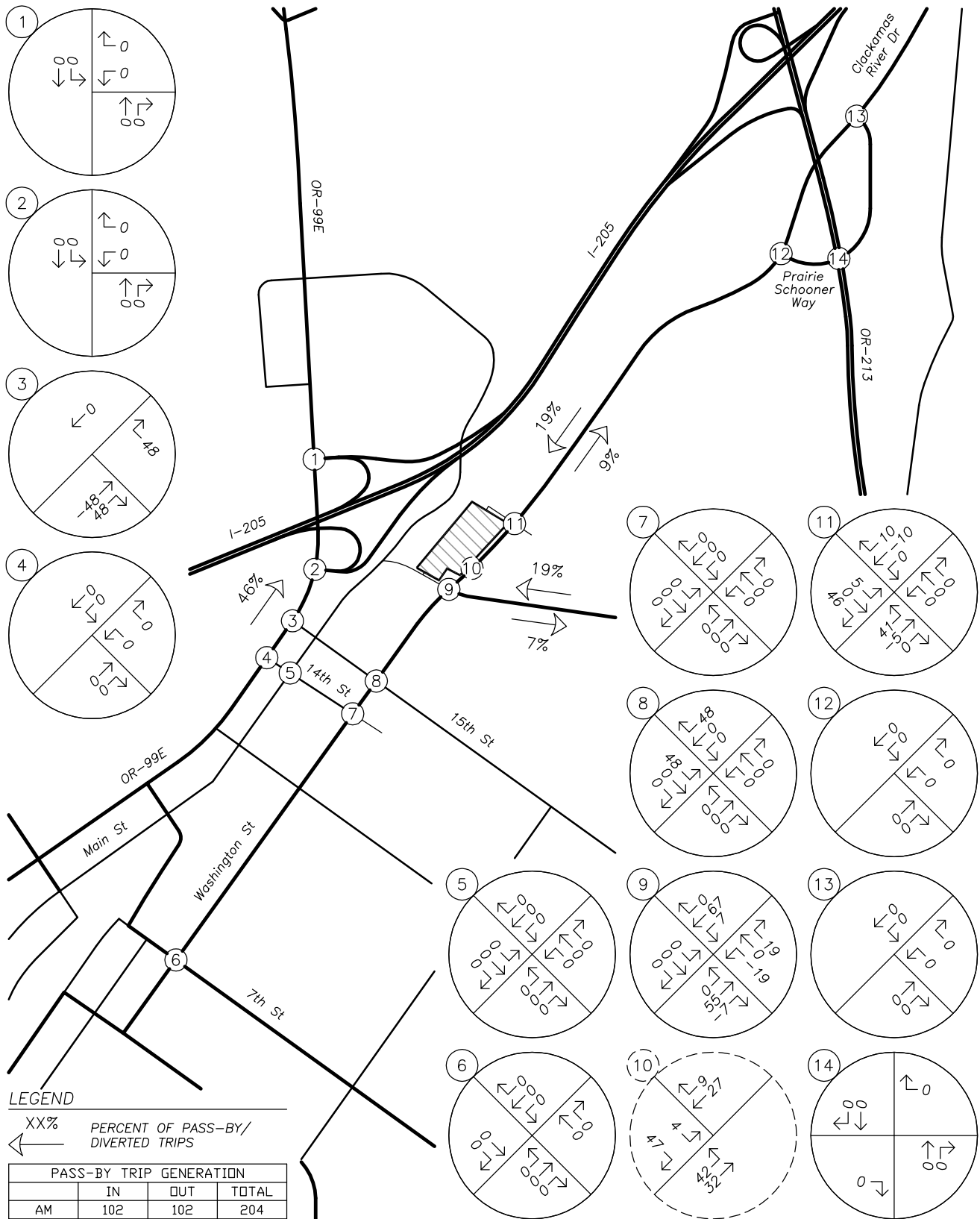


SITE TRIP DISTRIBUTION & ASSIGNMENT
 Proposed Development Plan – Primary Site Trips
 PM Peak Hour



FIGURE
6

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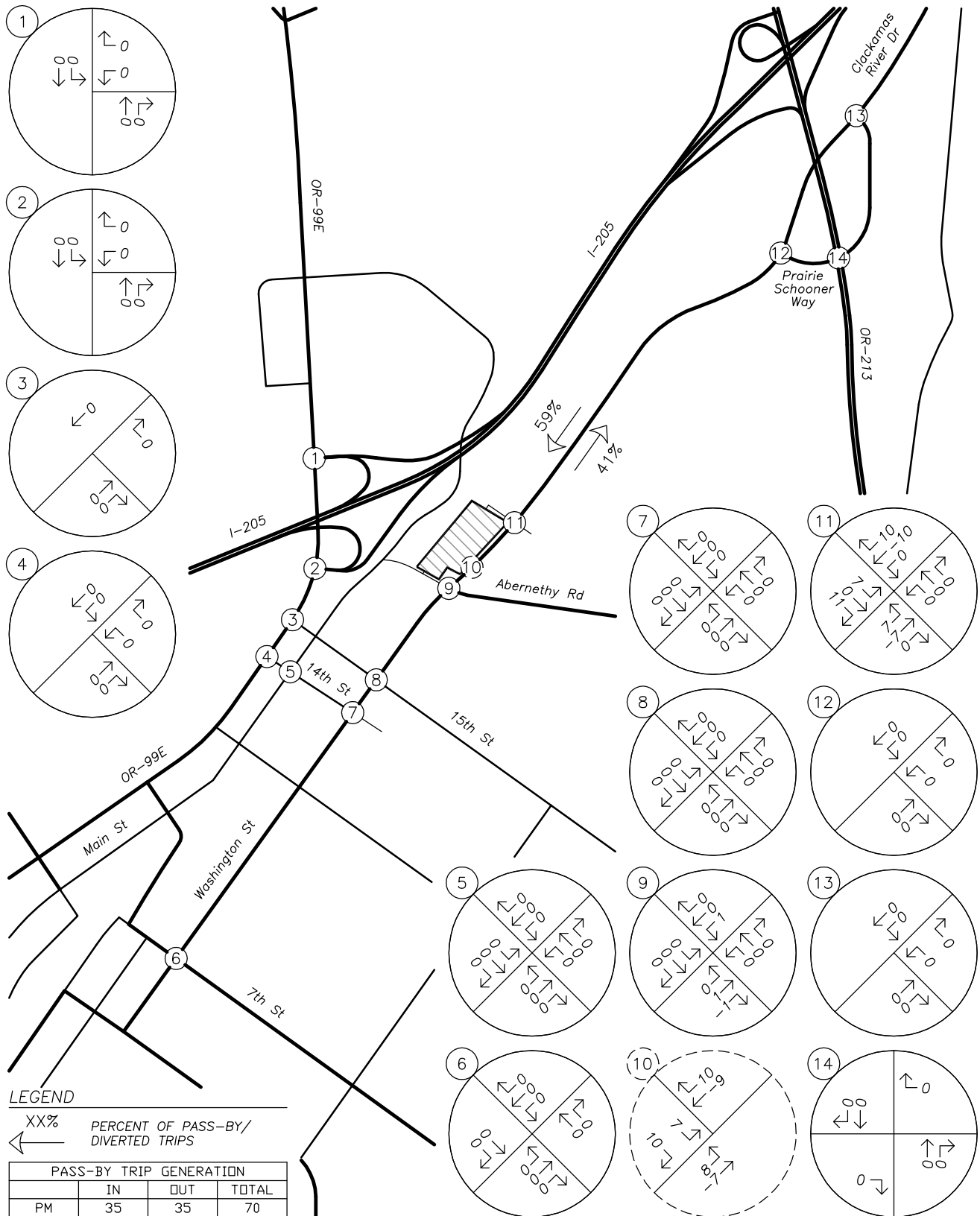


SITE TRIP DISTRIBUTION & ASSIGNMENT
Proposed Development Plan – Pass-by Site Trips
AM Peak Hour



FIGURE
7

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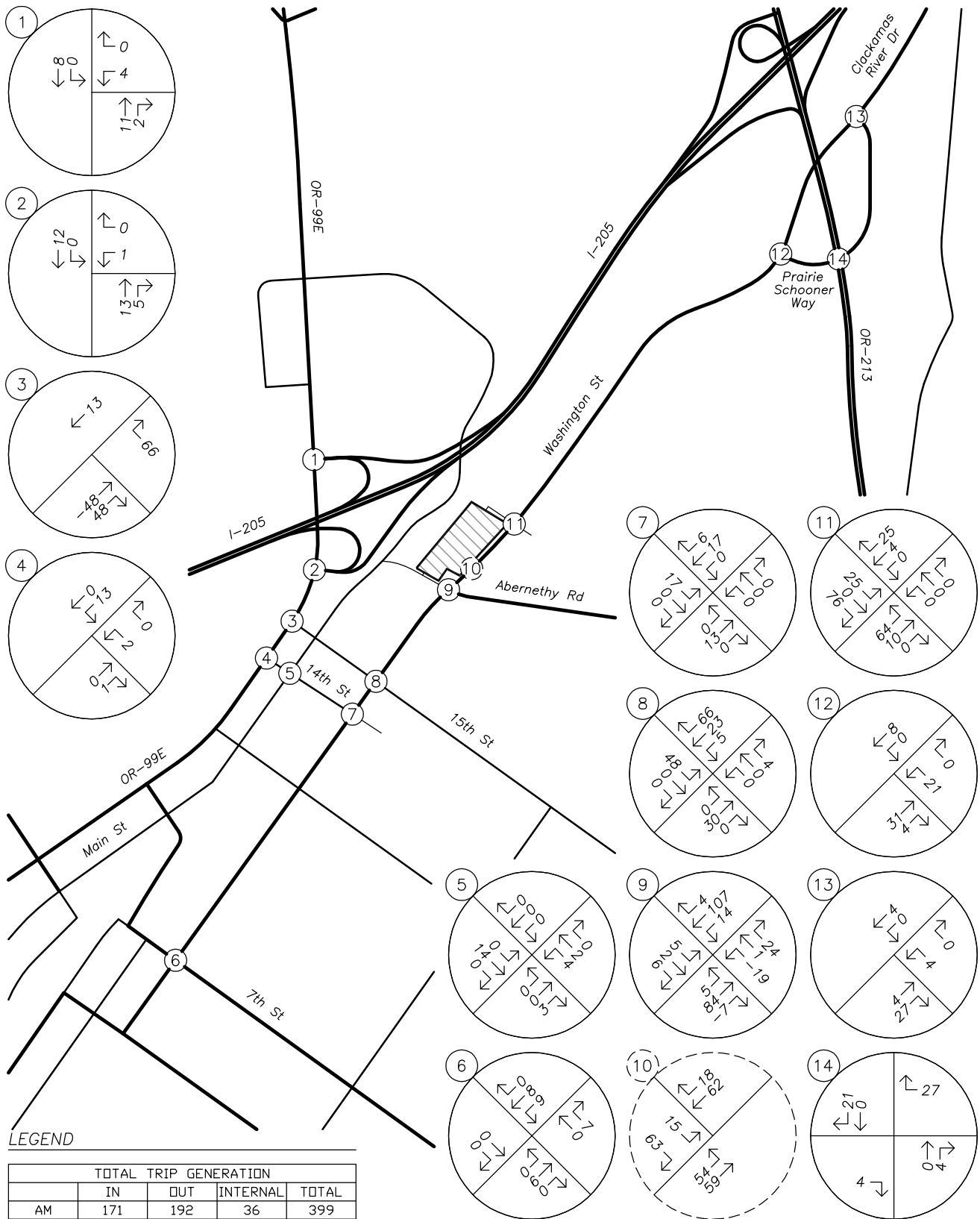


SITE TRIP DISTRIBUTION & ASSIGNMENT
Proposed Development Plan – Pass-by Site Trips
PM Peak Hour



FIGURE
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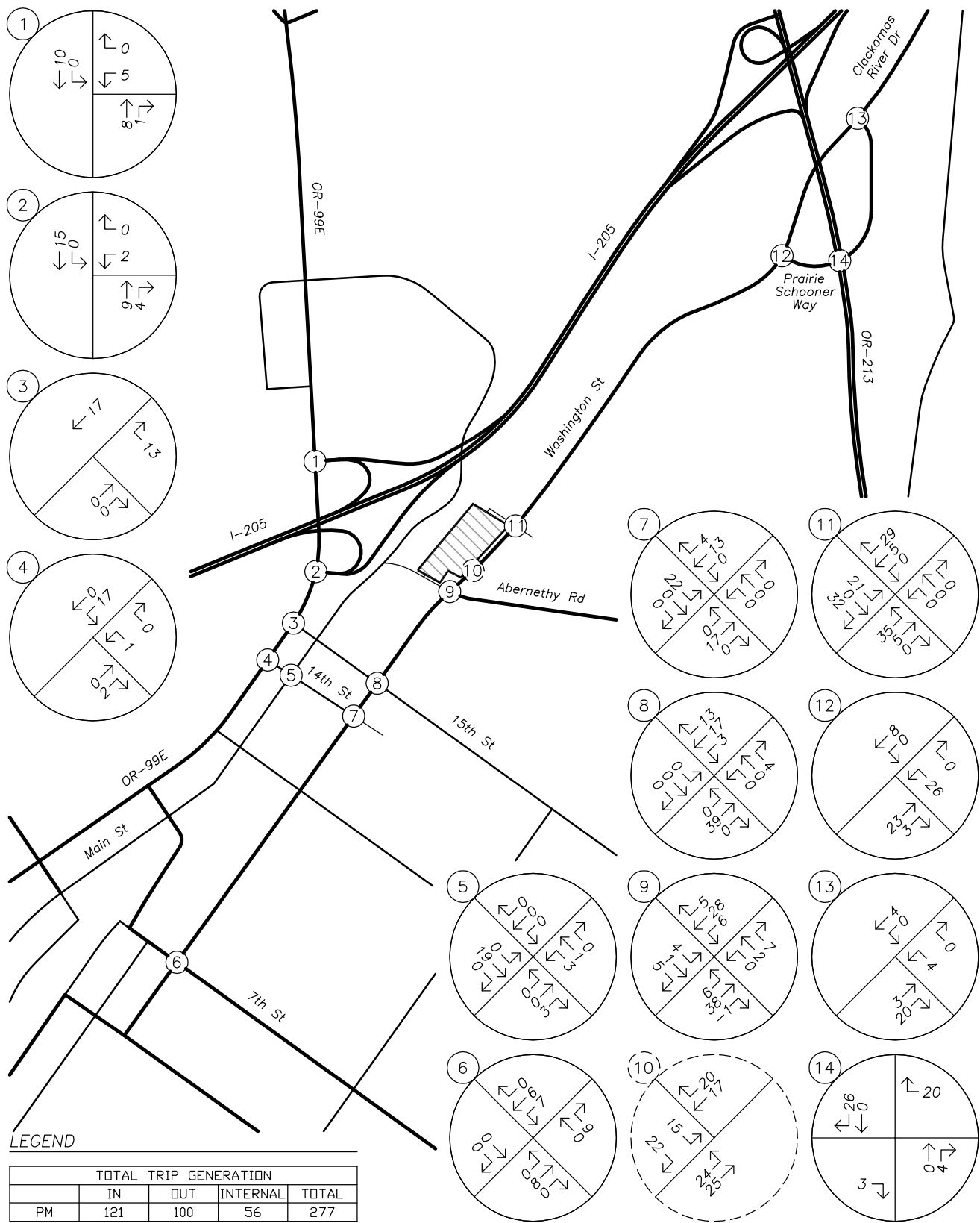


SITE TRIP DISTRIBUTION & ASSIGNMENT
 Proposed Development Plan – Total Site Trips
 AM Peak Hour



FIGURE
9

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SITE TRIP DISTRIBUTION & ASSIGNMENT
 Proposed Development Plan – Total Site Trips
 PM Peak Hour



OPERATIONAL ANALYSIS

BACKGROUND VOLUMES

To provide analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required.

In order to calculate the future traffic volumes for non-ODOT facilities, a compounded growth rate of two percent per year for an assumed build-out condition of five years was applied to the measured existing traffic volumes to approximate year 2022 background conditions.

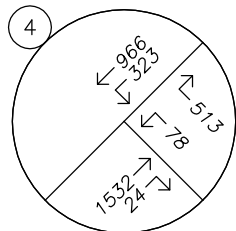
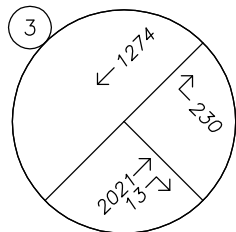
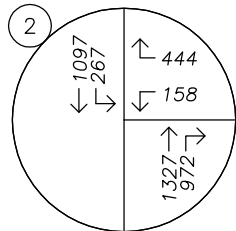
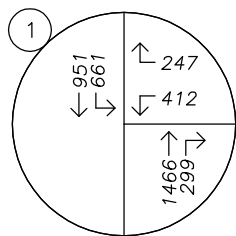
To estimate the future traffic volumes for ODOT facilities, a linear growth rates of 0.7 percent per year and 1.2 percent per year were calculated for the traffic volumes along OR-99E and OR-213, respectively, using ODOT's 2035 Future Volume Tables. This growth rate was applied to the measured existing traffic volumes over a five-year period to determine year 2022 background traffic volumes for the through traffic traveling along both ODOT roadways. A compounded growth rate of two percent per year for an assumed build-out condition of five years was applied to all other turning movement traffic volumes at study intersections along these ODOT roadways.

Figure 11 on page 26 and Figure 12 on page 27 show the projected year 2022 background traffic volumes at the study intersections during the morning and evening peak hours, respectively.

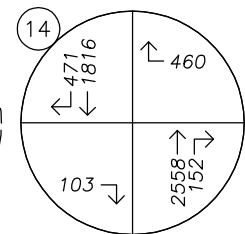
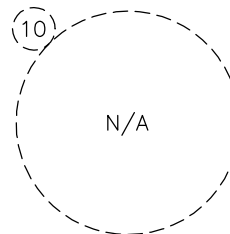
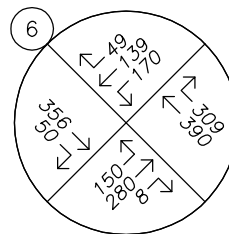
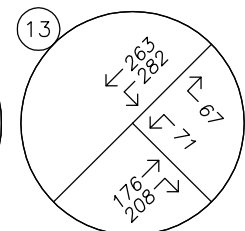
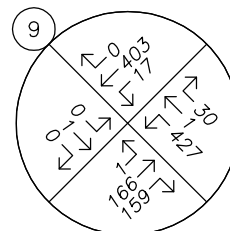
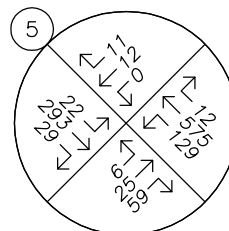
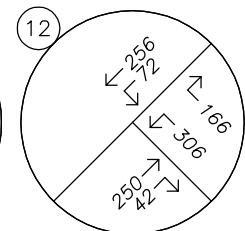
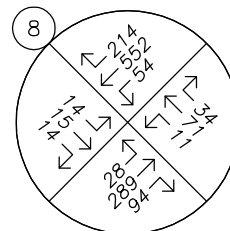
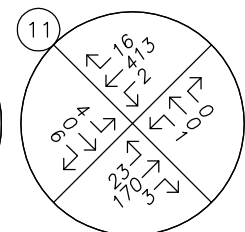
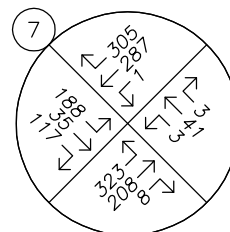
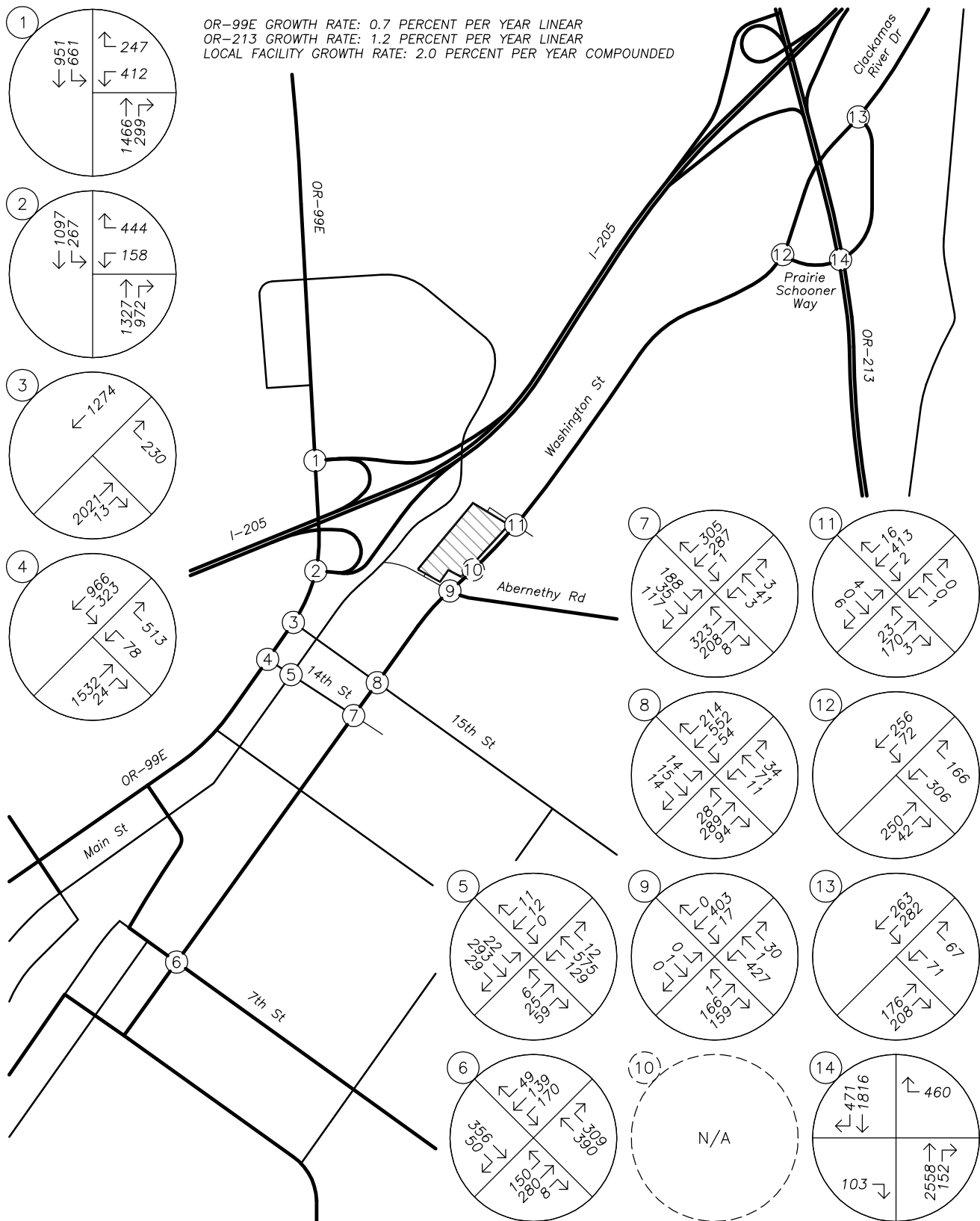
BACKGROUND VOLUMES PLUS SITE TRIPS

Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2022 background traffic volumes to obtain the expected 2022 background volumes plus site trips.

Figure 13 on page 28 and Figure 14 on page 29 show the projected year 2022 peak hour background traffic volumes plus proposed development site trips at the study intersections during the morning and evening peak hours, respectively.



OR-99E GROWTH RATE: 0.7 PERCENT PER YEAR LINEAR
 OR-213 GROWTH RATE: 1.2 PERCENT PER YEAR LINEAR
 LOCAL FACILITY GROWTH RATE: 2.0 PERCENT PER YEAR COMPOUNDED

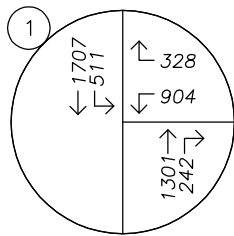


TRAFFIC VOLUMES
 Year 2022 Background Conditions
 AM Peak Hour

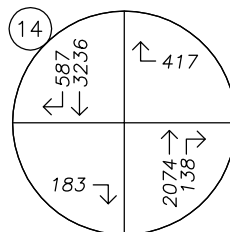
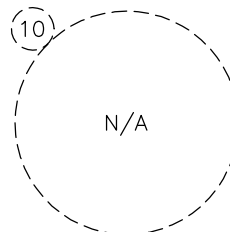
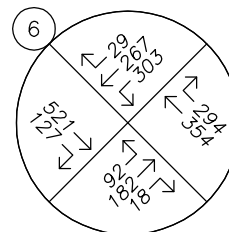
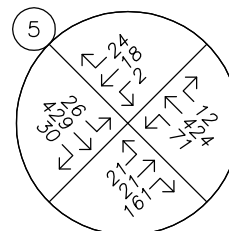
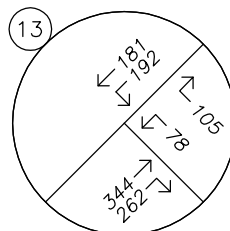
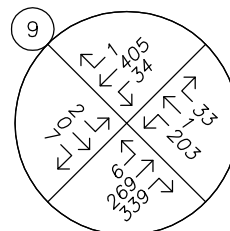
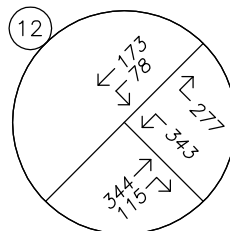
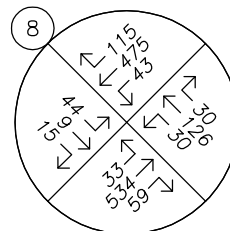
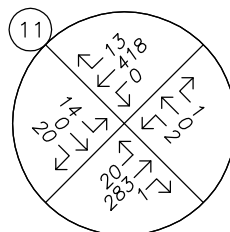
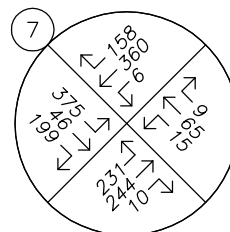
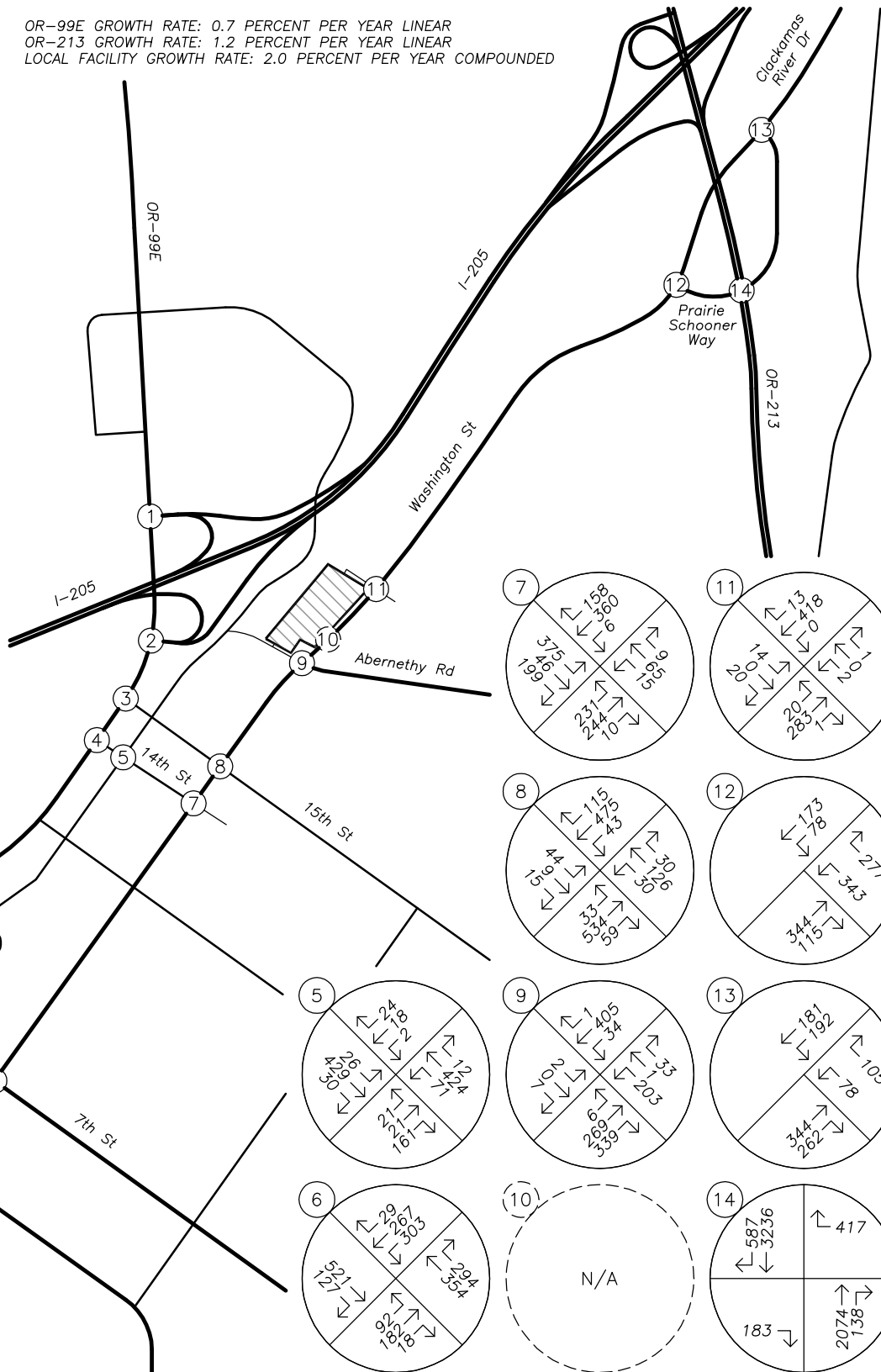
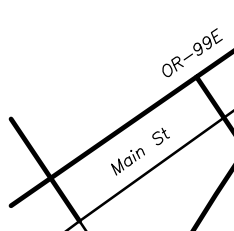
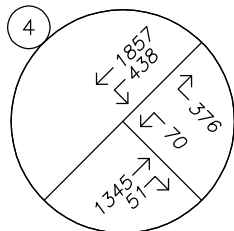
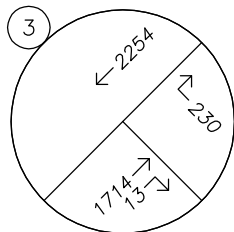
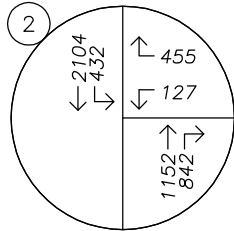


FIGURE
 11

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OR-99E GROWTH RATE: 0.7 PERCENT PER YEAR LINEAR
 OR-213 GROWTH RATE: 1.2 PERCENT PER YEAR LINEAR
 LOCAL FACILITY GROWTH RATE: 2.0 PERCENT PER YEAR COMPOUNDED

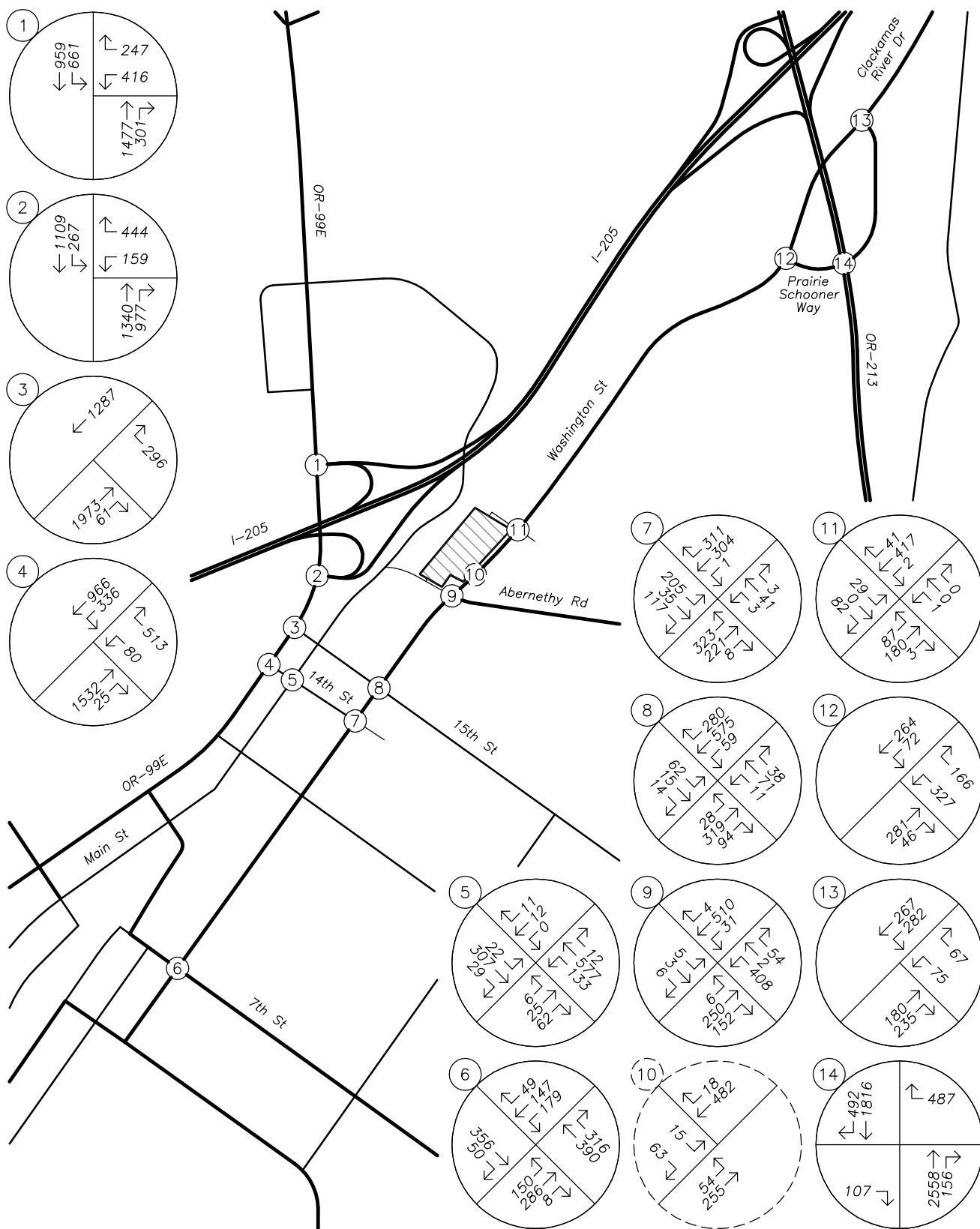


TRAFFIC VOLUMES
 Year 2022 Background Conditions
 PM Peak Hour



FIGURE
 12

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 27

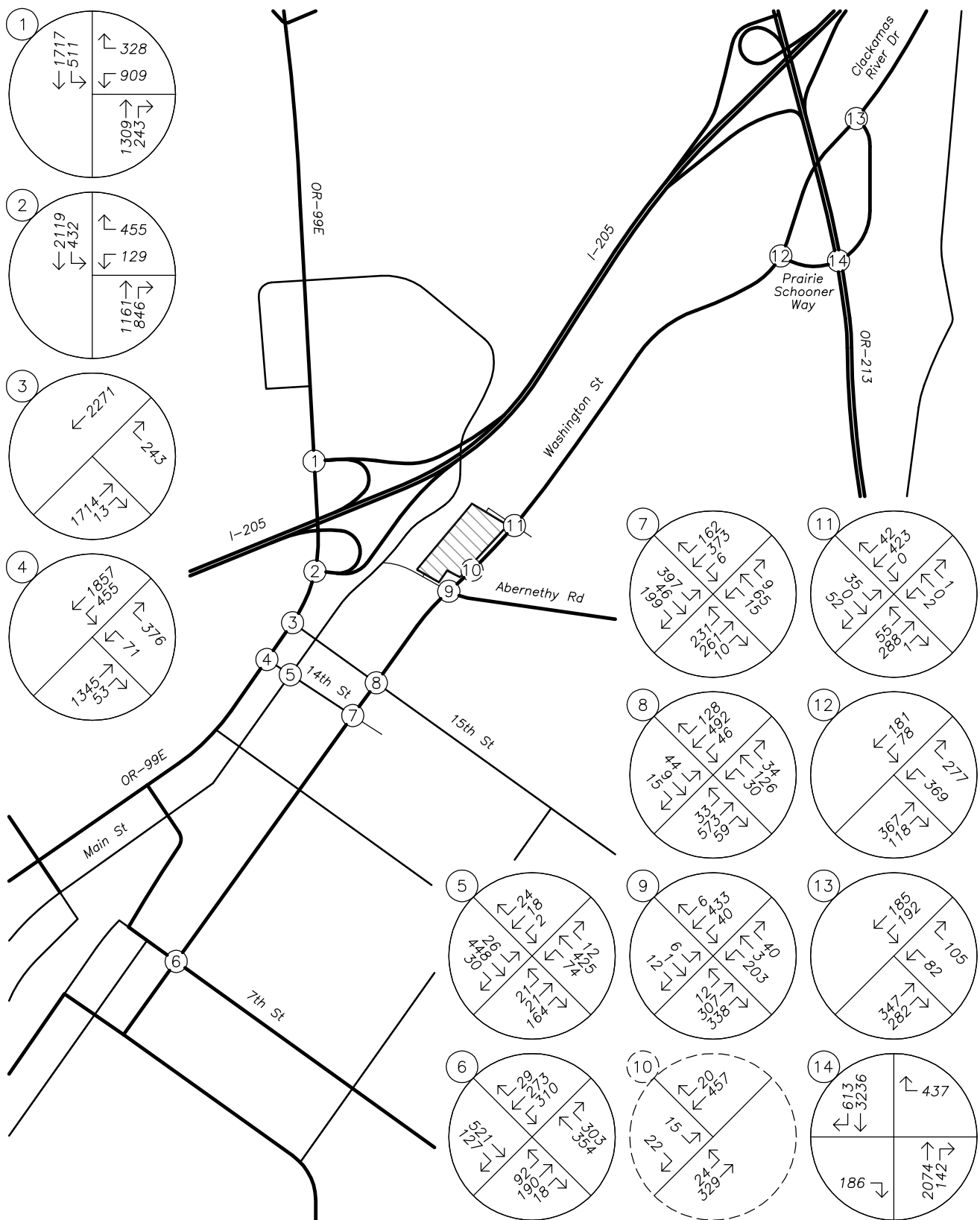


TRAFFIC VOLUMES
Year 2022 Background Conditions plus Site Trips
AM Peak Hour



FIGURE
13

PAGE
28



TRAFFIC VOLUMES
Year 2022 Background Conditions plus Site Trips
PM Peak Hour



FIGURE
14

PAGE
29



CAPACITY ANALYSIS

A capacity and delay analysis was conducted for each of the study intersections. The analysis was conducted according to the signalized and unsignalized intersection analysis methodologies in the *HIGHWAY CAPACITY MANUAL* (HCM). The level-of-service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The v/c ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Per Section 12.04.205 of the *Oregon City Municipal Code*, the following minimum acceptable operation standards apply when evaluating traffic impacts associated with the proposed land uses:

- For intersections within the Regional Center, a maximum v/c ratio of 1.10 is permissible during the peak hour, provided that during the second hour the v/c ratio is 0.99 or less. For signalized intersections, these standards apply to the intersection as a whole. For unsignalized intersections, these standards apply to the major-street approaches only. There is no performance standard for unsignalized minor street approaches.
- For intersections outside the Regional Center but designated on the Arterial and Throughway Network, a maximum v/c ratio of 0.99 shall be maintained. This standard applies to signalized intersections as a whole, and to the major-street approaches at unsignalized intersections. There is no performance standard for unsignalized minor street approaches.
- Signalized intersections located outside the Regional Center (Downtown Community Plan) boundaries and not designated on the Arterial and Throughway Network shall operate at LOS D or better for the intersection as a whole, no approach shall operate worse than LOS E, and the intersection shall operate with a v/c ratio no higher than 1.0 for the sum of critical movements.
- Unsignalized intersections located outside the Regional Center (Downtown Community Plan) boundaries and not designated on the Arterial and Throughway Network shall operate at LOS E or better for all approaches serving more than 20 peak hour vehicles. LOS F will be tolerated at movements serving no more than 20 vehicles during the peak hour.
- Until the City adopts new performance measures that identify alternative mobility targets, the City exempts proposed development that is permitted, either conditionally, outright, or through a detailed development master plan approval from compliance with the above mobility standards for identified intersections, including the intersections of OR-99E at the I-205 eastbound and westbound ramp terminals.

According to the City of Oregon City's Downtown Community Plan, the Regional Center encompasses all of the study intersections operating under City jurisdiction, except for Clackamas River Drive at Washington Street. Clackamas River Drive is, however, designated on the Arterial and Throughway Network.

The I-205 southbound ramps intersection at OR-99E is projected to operate with a v/c ratio of 1.02 during the morning peak hour and a v/c ratio of 0.98 during the evening peak hour under year 2022 background conditions. With the addition of site trips from the proposed development, the



intersection is projected to continue to operate with a v/c ratio of 1.02 during the morning peak and the v/c ratio is projected to increase to 0.99 during the evening peak hour.

The I-205 northbound ramps intersection at OR-99E is projected to operate with a v/c ratio of 0.90 during the morning peak hour and a v/c ratio of 0.81 during the evening peak hour under year 2022 background traffic conditions. With the addition of site trips from the proposed development, the intersection is projected to operate with a v/c ratio of 0.91 during the morning peak hour and 0.81 during the evening peak hour.

Under year 2022 background conditions the intersection of 15th Street at OR-99E is projected to operate with a v/c ratio of 0.85 during the morning peak hour and 0.71 during the evening peak hour. With the addition of site trips from the proposed development the intersection is projected to operate with a v/c ratio of 0.95 during the morning peak hour and 0.71 during the evening peak hour.

The intersection of 14th Street at OR-99E operates with a v/c ratio of 0.96 or less during the morning peak hour and 0.85 or less during the evening peak hour for all analysis scenarios.

The intersection of 14th Street at Main Street currently operates at LOS C with v/c ratios of 0.20 during the morning peak hour and 0.26 during the evening peak hour. Under year 2022 background conditions, the intersection is projected to operate at LOS E with a v/c ratio of 0.29 or less during the morning peak hour and at LOS E with a v/c ratio of 0.32 or less during the evening peak hour, regardless the addition of proposed development trips.

The intersection of 7th Street at Washington Street operates at LOS C with v/c ratios or 0.72 or less during the morning peak hour and 0.75 or less during the evening peak hour for all analysis scenarios.

The intersection of 14th Street at Washington Street is projected to operate at LOS C with v/c ratios of 0.86 or less during the morning peak hour and 0.89 or less during the evening peak hour through year 2022 background conditions. Upon build-out of the proposed development, the intersection is projected to operate at LOS D with v/c ratios of 0.90 during the morning peak hour and 0.95 during the evening peak hour.

The intersection of 15th Street at Washington Street operates at LOS B with v/c ratios of 0.79 or less during the morning peak hour and 0.64 or less during the evening peak hour for all analysis scenarios.

The intersection of Abernethy Road at Washington Street operates at LOS B with a v/c ratio of 0.82 or less during the morning peak hour and at LOS A with a v/c ratio of 0.55 or less during the evening peak hour for all analysis scenarios.

Upon build-out of the proposed development, the proposed site access intersection at Washington Street is projected to operate at LOS B with v/c ratios of 0.32 during the morning peak hour and 0.31 during the evening peak hour.

The Amtrak station access intersection at Washington Street currently operates at LOS B with a v/c ratio of 0.25 during both the morning and evening peak hours. Under year 2022 background



conditions, the intersection is projected to operate at LOS C with v/c ratios of 0.28 or less during the morning peak hour and 0.30 or less during the evening peak hour, regardless the addition of proposed development trips.

The intersection of Prairie Schooner Way at Washington Street operates at LOS A with a v/c ratio of 0.39 or less during the morning peak hour and at LOS B with a v/c ratio of 0.46 or less during the evening peak hour for all analysis scenarios.

The intersection of Clackamas River Drive at Washington Street operates at LOS B with v/c ratios of 0.62 or less during the morning peak hour and at level of service A with v/c ratios of 0.44 or less during the evening peak hour for all analysis scenarios.

The intersection of OR-213 at Clackamas River Drive operates at LOS B with v/c ratios of 0.84 or less during the morning peak hour and 0.90 or less during the evening peak hour for all analysis scenarios.

The v/c, delay, and LOS results of the capacity analysis are shown in Tables 3 and 4 for the morning and evening peak hours. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

Based on the results of the operational analysis, all intersections are projected to operate acceptably per Oregon City standards through year 2022 either with or without the addition of site trips from the proposed development.

The intersections operating under ODOT jurisdiction are also projected to meet ODOT's respective performance standards, with the exception of OR 99-E at the I-205 ramp terminals. However, these intersections are specifically exempted from operational standards pursuant to OCMC 12.04.205(D).

Table 3 - Capacity Analysis Summary

	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay	V/C	In	Out	Total
1. I-205 SB Ramps at OR-99E						
Existing Conditions	D	40	0.95	C	28	0.91
2022 Background Conditions	D	52	1.02	D	36	0.98
2022 Background plus Site Conditions	D	53	1.02	D	37	0.99
2. I-205 NB Ramps at OR-99E						
Existing Conditions	C	21	0.78	B	17	0.71
2022 Background Conditions	C	27	0.90	B	20	0.81
2022 Background plus Site Conditions	C	27	0.91	B	20	0.81
3. 15th St at OR-99E						
Existing Conditions	D	32	0.82	C	21	0.68
2022 Background Conditions	E	42	0.85	C	24	0.71
2022 Background plus Site Conditions	F	76	0.96	D	26	0.71
4. 14th St at OR-99E						
Existing Conditions	C	23	0.90	B	15	0.80
2022 Background Conditions	C	27	0.96	B	17	0.83
2022 Background plus Site Conditions	C	28	0.96	B	18	0.85
5. 14th St at Main St						
Existing Conditions	D	35	0.20	D	30	0.26
2022 Background Conditions	E	46	0.28	E	39	0.30
2022 Background plus Site Conditions	E	49	0.29	E	41	0.32
6. 7th St at Washington St						
Existing Conditions	C	20	0.65	C	21	0.68
2022 Background Conditions	C	22	0.71	C	24	0.74
2022 Background plus Site Conditions	C	23	0.72	C	24	0.75
7. 14th St at Washington St						
Existing Conditions	C	25	0.78	C	26	0.80
2022 Background Conditions	C	31	0.86	C	34	0.89
2022 Background plus Site Conditions	D	36	0.90	D	38	0.95
8. 15th St at Washington St						
Existing Conditions	B	11	0.66	B	11	0.58
2022 Background Conditions	B	11	0.70	B	13	0.62
2022 Background plus Site Conditions	B	17	0.79	B	14	0.64
9. Abernethy Rd at Washington St						
Existing Conditions	B	13	0.70	A	7	0.49
2022 Background Conditions	B	16	0.76	A	8	0.53
2022 Background plus Site Conditions	B	18	0.82	A	8	0.55

Table 4 - Capacity Analysis Summary (Continued)						
	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay	V/C	In	Out	Total
10. Site Access at Washington St						
2022 Background plus Site Conditions	B	15	0.32	B	15	0.31
11. Amtrak Station Access at Washington St						
Existing Conditions	B	15	0.25	B	14	0.25
2022 Background Conditions	C	16	0.27	C	15	0.28
2022 Background plus Site Conditions	C	23	0.29	C	18	0.30
12. Prairie Schooner Way at Washington St						
Existing Conditions	A	9	0.33	B	10	0.38
2022 Background Conditions	A	9	0.36	B	11	0.43
2022 Background plus Site Conditions	A	10	0.39	B	11	0.46
13. Clackamas River Dr at Washington St						
Existing Conditions	B	11	0.55	A	8	0.39
2022 Background Conditions	B	12	0.62	A	9	0.43
2022 Background plus Site Conditions	B	13	0.62	A	9	0.44
14. OR-213 at Clackamas River Dr						
Existing Conditions	B	10	0.77	B	11	0.84
2022 Background Conditions	B	12	0.83	B	14	0.89
2022 Background plus Site Conditions	B	12	0.84	B	14	0.90

Although not recommended in conjunction with the proposed development, it should be noted that according to Oregon City's Transportation System Plan (TSP), there is an identified project which would improve intersection operation at the intersection of OR-99E and the I-205 southbound ramps. The proposed improvement consists of installation of a second southbound left-turn lane, as well as providing a second eastbound receiving lane to accommodate the added turn lane. With installation of the additional turn lane, the intersection would be projected to operate with v/c ratios below 0.85 during the morning and evening peak hours either with or without the addition of site trips from the proposed development.



SAFETY ANALYSIS

CRASH DATA ANALYSIS

Using data obtained from the ODOT's Crash Analysis and Reporting Unit, a review of the most recent available five years of crash history (from January 2011 to December 2015) at the study intersections was performed. The crash data was evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for the intersection. Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak period represents 10 percent of average daily traffic (ADT) at the intersection. Crash rates in excess of one to two crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

I-205 Southbound Ramps Intersection at OR-99E

The I-205 southbound ramps intersection at OR-99E had 47 reported crashes during the analysis period. The crashes consisted of 25 rear-end collisions, 19 turning-movement collisions, one fixed-object collision, one collision involving a pedestrian, and one collision involving a bicyclist. Of the crashes reported, 20 were classified as "Property Damage Only" (*PDO*), 20 were classified as "Possible Injury – Complaint of Pain" (*Injury C*), six were classified as "Non-Incapacitating Injury" (*Injury B*), and one was classified as "Incapacitating Injury – Bleeding, Broken Bones" (*Injury A*). The crash rate at the intersection was calculated to be 0.55 CMEV.

Three of the reported crashes at the intersection involved a pedestrian, bicyclist, or was classified as an *Injury A* collision. The crash involving a pedestrian occurred when the driver of a westbound right-turning passenger car failed to yield right-of-way to a pedestrian who was utilizing some form of conveyance other than walking while in an intersection crosswalk. The driver of the vehicle had conducted a right-turn after coming to a stop at the intersection. The pedestrian sustained injuries consistent with *Injury B* classification while the driver of the vehicles was uninjured. The crash involving a bicyclist occurred when the driver of a westbound right-turning passenger car struck a southbound bicyclist who was traveling on the roadway shoulder against the flow of traffic. The bicyclist had disregarded the traffic signal and had entered the intersection illegally. The bicyclist sustained injuries consistent with *Injury B* classification while the driver of the vehicle was uninjured. The crash which resulted in injuries consistent with *Injury A* classification occurred when the driver of a northbound passenger car disregarded the traffic signal and collided with a westbound left-turning passenger car. The driver of the northbound vehicle sustained injuries while the other driver was uninjured.

I-205 Northbound Ramps Intersection at OR-99E

The I-205 northbound ramps intersection at OR-99E had 42 reported crashes during the analysis period. The crashes consisted of 28 rear-end collisions and 14 turning-movement collisions. Of the crashes reported, 23 were classified as *PDO*, 17 were classified as *Injury C*, one was classified as *Injury B*, and one was classified as *Injury A*. The crash rate at the intersection was calculated to be 0.48 CMEV.

One of the reported crashes at intersection was classified as an *Injury A* collision. The crash occurred when the driver of a westbound right-turning vehicle was following too close and rear-ended another passenger car that had stopped at the intersection. The driver of the vehicle that was rear-ended sustained injuries while the other driver was uninjured.

15th Street at OR-99E

The intersection of 15th Street at OR-99E had 20 reported crashes during the analysis period. The crashes consisted of 14 rear-end collisions, five turning-movement collisions, and one collision involving a bicyclist. Of the crashes reported, six were classified as *PDO*, 12 were classified as *Injury C*, one was classified as *Injury B*, and one was classified as *Injury A*. The crash rate at the intersection was calculated to be 0.27 CMEV.

One of the reported crashes at the intersection was classified as an *Injury A* collision. The crash occurred when the driver of a northwest-bound right-turning passenger car failed to yield right-of-way to a bicyclist crossing through the intersection. The driver of the passenger car had proceeded through the intersection after stopping, however had their vision obscured by some roadside obstruction. The bicyclist sustained injuries while the driver of the vehicle was uninjured.

14th Street at OR-99E

The intersection of 14th Street at OR-99E had 49 reported crashes during the analysis period. The crashes consisted of 24 turning-movement collisions, 23 rear-end collisions, and two collisions involving bicyclists. Of the crashes reported, 15 were classified as *PDO*, 25 were classified as *Injury C*, and nine were classified as *Injury B*. The crash rate at the intersection was calculated to be 0.68 CMEV.

Two of the reported crashes at the intersection involved a bicyclist. One of the bicycle related crashes occurred when the driver of a southwest-bound left-turning passenger car was struck by a bicyclist who disregarded the traffic signal and had entered the intersection illegally. The driver of the vehicle was uninjured while the bicyclist sustained injuries consistent with *Injury B* classification. The second bicycle related crash occurred when the driver of a northeast-bound right-turning passenger car failed to yield right-of-way to a bicyclist. The driver of the vehicle was uninjured while the bicyclist sustained injuries consistent with *Injury B* classification.

14th Street at Main Street

The intersection of 14th Street at Main Street had 30 reported crashes during the analysis period. The crashes consisted of 21 angle-type collisions, six turning-movement collisions, two collisions involving bicyclists, and one collision involving a pedestrian. Of the crashes reported, 15 were



classified as *PDO*, 11 were classified as *Injury C*, and four were classified as *Injury B*. The crash rate at the intersection was calculated to be 1.46 CMEV.

Based on the calculated crash rate being in excess of one crash per million entering vehicles, additional investigation regarding the safety of the intersection is appropriate. It was noted that Oregon City's Transportation System Plan includes a recommendation to convert this intersection to all-way stop control as mitigation for the high incidence of crashes at the intersection. The intersection crash history shows five or more crashes per year that are susceptible to correction by installation of all-way stop control for each of the three most recent years analyzed (2013, 2014 and 2015). Accordingly, all-way stop control is both warranted and recommended based on the crash history. No other specific safety mitigations are recommended based on the crash history. A more detailed discussion of this potential safety mitigation including operational and queuing impacts is provided on page 40.

7th Street at Washington Street

The intersection of 7th Street at Washington Street had nine reported crashes during the analysis period. The crashes consisted of four angle-type collisions, four turning-movement collisions, and one rear-end collision. Of the crashes reported, five were classified as *PDO* and four were classified as *Injury C*. The crash rate at the intersection was calculated to be 0.25 CMEV.

14th Street at Washington Street

The intersection of 14th at Washington Street had nine reported crashes during the analysis period. The crashes consisted of four turning-movement collisions, three rear-end collisions, one fixed-object collision, and one angle-type collision. Of the crashes reported, four were classified as *PDO* and five were classified as *Injury C*. The crash rate at the intersection was calculated to be 0.32 CMEV.

15th Street at Washington Street

The intersection of 15th Street at Washington Street had 20 reported crashes during the analysis period. The crashes consisted of ten turning-movement collisions, six angle-type collisions, three rear-end collisions, and one collision involving a bicyclist. Of the crashes reported, nine were classified as *PDO*, nine were classified as *Injury C*, and two were classified as *Injury B*. The crash rate at the intersection was calculated to be 0.80 CMEV.

One of the reported crashes at the intersection involved a bicyclist. The crash occurred when the driver of a southeast-bound left-turning passenger car failed to yield right-of-way to a bicyclist. The driver of the passenger car had their vision obscured by some roadside obstruction. The bicyclist sustained injuries consistent with *Injury C* classification while the driver of the vehicle was uninjured.

Abernethy Road at Washington Street

The intersection of Abernethy Road at Washington Street had no reported crashes during the analysis period.



Amtrak Station Access at Washington Street

The Amtrak station access intersection at Washington Street had no reported crashes during the analysis period.

Prairie Schooner Way at Washington Street

The intersection of Prairie Schooner Way at Washington Street had three reported crashes during the analysis period. All three crashes were turning-movement collisions, two of which were classified as *PDO* while one was classified as *Injury B*. Since the intersection was recently constructed near the end of year 2012, the crash rate was calculated to be 0.23 CMEV based on three years of complete crash history.

Clackamas River Drive at Washington Street

The intersection of Clackamas River Drive at Washington Street had two reported crashes during the analysis period. One of the crashes was a rear-end collision while the other was a turning-movement collision. Both crashes were classified as *PDO*. Since the intersection was recently constructed near the end of year 2012, the crash rate was calculated to be 0.17 CMEV based on three years of complete crash history.

OR-213 at Clackamas River Drive

The intersection of OR-213 at Clackamas River Drive was recently reconstructed near the end of year 2012. Prior to reconstruction, the intersection allowed full turning-movements for all approaches. Currently, the intersection allows only right-in/right-out movements for the minor-street approaches while bi-directional traffic along the major-street is separated by a raised median.

Since significant changes to traffic controls had occurred at the intersection, it's reasonable to assume that crash patterns have also significantly changed. Prior to reconstruction of the intersection, over a duration of two years (between 2011 and 2012) a total of 19 crashes were reported at the intersection. After construction was completed, over a duration of three years (between 2013 and 2015) a total of 15 crashes were reported. Based on this information, on average 9.5 crashes per year had occurred at the intersection prior to reconstruction while 5.0 crashes per year had occurred after construction had ended. In order to more accurately assess safety at the intersection, only three years of crash data between years 2013 and 2015 was reviewed instead of five years.

Based on the three years of crash history, the intersection had 15 reported crashes during the analysis period. The crashes consisted of eight rear-end collisions, two turning-movement collisions, two overturning collisions, one angle-type collision, one fixed-object collision, and one sideswipe collision. Of the crashes reported, four were classified as *PDO*, eight were classified as *Injury C*, and three were classified as *Injury B*. The crash rate at the intersection was calculated to be 0.22 CMEV.

Based on the detailed crash data for the study intersections, it is recommended that the intersection of 14th Street at Main Street be converted to all-way stop control. No other specific mitigations are recommended for the study area intersections based on the crash history.

SIGHT DISTANCE

Sight distance was examined for the proposed site access intersection along Washington Street. The proposed access will be located at/near the existing driveway access that currently serves tax lot 1300 of the project site. Intersection sight distance was measured and evaluated in accordance with the standards established in *A Policy on Geometric Design of Highways and Streets*². According to AASHTO, the driver's eye is assumed to be 15 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the approach street pavement. The major-street approaching vehicle driver's eye-height is assumed to be 3.5 feet above the cross-street pavement.

The posted speed along Washington Street changes between 25 mph and 35 mph at the proposed access location; 25 mph to the southwest of the proposed access and 35 mph to the northeast. Based on the posted speeds along Washington Street, the minimum required intersection sight distances for maintaining relatively uninterrupted traffic flow along the roadway are 280 feet for northeast-bound approaching vehicles and 390 for southwest-bound approach vehicles. At the proposed site access, intersection sight distance was measured to be in excess of 700 feet to the northeast and 378 feet to the southwest, limited by a crest in the vertical curvature of the roadway.

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

WARRANT ANALYSIS

Left-turn lane and traffic signal warrants were examined for the study intersections where such treatments would be applicable.

A left-turn refuge lane is primarily a safety consideration for the major street, removing left-turning vehicles from the through traffic stream. The left-turn lane warrants used were developed from the National Cooperative Highway Research Project's (NCHRP) Report 457. Turn lane warrants were evaluated based on the number of advancing and opposing vehicles as well as the number of turning vehicles, the travel speed, and the number of through lanes.

Left-turn lane warrants are project to be met for the following two intersection approaches:

- Northeast-bound approach at the intersection of 14th Street at Main Street under existing conditions during the morning and evening peak hours.
- Northwest-bound approach at the site access intersection at Washington Street under year 2022 build-out conditions during the morning peak hour.

The intersection of 14th Street at Main Street is included within Oregon City's TSP and is planned for conversion to all-way stop control in the short-term. Typically, conversion of an intersection to all-way stop control means that the left-turn lane warrants are no longer applicable. However, based on

² American Association of State Highways and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011.

the operational analysis of intersection operation under all-way stop control it is recommended that a northwest-bound left-turn lane be provided at the intersection even under all-way stop control in order to ensure that all approaches will continue to operate within capacity.

Traffic signal warrants were examined for unsignalized stop-controlled study intersections to determine whether the installation of any new traffic signal will be warranted at the intersections upon completion of the proposed development and change in zoning. Due to insufficient main and side-street traffic volumes, traffic signal warrants are not projected to be met for any of the unsignalized stop-controlled study intersections under any of the analysis scenarios.

ACCESS SPACING STANDARDS

The proposed development will either construct a new access near or utilize an existing access driveway, which currently serves tax lot 1300 of the project site, located along Washington Street. In order to assess whether access spacing standards can be met at the proposed access location, code section 12.04.195 – *Spacing Standards* from Oregon City’s municipal code was referenced.

According to Table 12.04.195.B – *Minimum Driveway Spacing Standards*, the “*minimum distance from a street corner to a driveway of all uses and minimum distance between driveways for uses other than single and two-family dwellings*” along Minor Arterial roadways shall be 175 feet. The nearest driveways/public roadways to the project site along northwestern side of Washington Street are the Amtrak station access immediately to the northeast and an automotive repair shop’s driveway approximately 75 feet to the southwest. The project site has approximately 520 feet of frontage along Washington Street, 245 feet of which could have a site access built while satisfying City access spacing standards. Therefore, a proposed site access may be constructed along Washington Street while meeting Oregon City standards.

MITIGATION ANALYSIS

Although the operational analysis did not demonstrate the need for any operational mitigation in order to meet city standards, the high historical crash rate for the intersection of 14th Street at Main Street is indicative of the need for safety mitigation.

In conformance with the city’s Transportation System Plan, the intersection was identified as a candidate location for conversion to all-way stop control. Providing all-way stop control would be expected to reduce the frequency of the reported crash types. However, introduction of stop signs along 14th Street could also result in increased queue lengths. Given the short distance between Main Street and OR-99E along 14th Street, special consideration of the potential capacity and queuing impacts of all-way stop control is appropriate at this location.

Based on the operational analysis, conversion to all-way stop control absent other improvements would be projected to result in eastbound queues on 14th Street backing up onto OR-99E. Installation of eastbound and westbound left-turn lanes along 14th Street at Main Street was also determined to be insufficient to mitigate queueing and capacity concerns along the 14th Street corridor with stop control at Main Street.



In order to improve operation and reduce queue lengths, two additional improvements are recommended in conjunction with conversion to all-way stop control. The first is to convert the eastbound and westbound approaches on 14th Street at Main Street to each have a shared left/through lane and a shared through/right lane. This lane configuration provides two eastbound lanes in which through traffic can queue, significantly increasing the available eastbound queue storage between Main Street and OR-99E. With two receiving lanes, the eastbound storage is sufficient to accommodate platoons of vehicles making southbound left turns from OR-99E onto 14th Street. This improvement thus ensures that acceptable operation can be maintained during the evening peak hour, when eastbound volumes are highest on 14th Street.

The second improvement addresses operation during the morning peak hour. Even with two westbound lanes provided along 14th Street, long queues would be projected to develop in the right lane since most eastbound drivers turn right onto OR-99E. Introduction of all-way stop control would limit the number of vehicles that could enter OR-99E during the green indication, since vehicles that currently could be served may be stuck at the stop sign at Main Street. In order to balance traffic volumes between the two eastbound lanes and maximize the number of vehicles that can enter OR-99E during each green indication, it is recommended that the westbound approach on 14th Street to OR-99E be converted to have a shared left/right turn lane and a dedicated right turn lane.

A Synchro/SimTraffic analysis was conducted for the proposed improvements, including conversion to all-way stop control for safety as well as reconfiguration of the intersection approaches on 14th Street as described.

Based on the operational analysis, the intersection of Highway 99E at 14th Street is projected to operate at level of service C and with a v/c ratio of 0.94 during the morning peak hour under year 2022 traffic conditions with the addition of site trips from the proposed development and the proposed safety, queuing, and capacity improvements in place. During the evening peak hour, the intersection is projected to operate at level of service C with a v/c ratio of 0.91.

Under year 2022 traffic conditions with the addition of site trips from the proposed development and the proposed safety, capacity and queuing improvements in place, the intersection of 14th Street at Main Street is projected to operate at level of service C during the morning peak hour, with a v/c ratio of 0.72 for the critical approach. During the evening peak hour, the intersection is projected to operate at level of service C, with a v/c ratio of 0.54 for the critical movement. Notably, the v/c ratio for the eastbound 14th Street approaches is projected to be less than 0.50 during both the morning and evening peak hours.

Based on the queuing analysis, the average queue length projected on the eastbound 14th Street approach to Main Street was projected to be 70 feet during the morning peak hour and 84 feet during the evening peak hour. Observation of the queueing simulation showed that although the available queue storage eastbound often filled, the queues immediately clear following each cycle of the traffic signal at OR-99E, and the queues of southbound vehicles turning left from OR-99E onto 14th Street also clear regularly. Additionally, although westbound queues develop during the morning peak hour on 14th Street approaching Main Street, the queues do not extend to Washington Street and result in congestion on the local street network.



Based on the analysis, installation of all-way stop control can be recommended as a safety mitigation for the intersection of 14th Street at Main Street provided that the eastbound and westbound approaches on 14th Street approached Main Street are converted to each have a shared left/through lane and a shared through/right lane, and the westbound 14th Street approach to OR-99E is converted to have a shared left/right lane and a dedicated right-turn lane at the signal.

It should also be noted as an alternative to the above-recommended improvements that the city's Transportation System Plan also includes an alternative improvement consisting of conversion of 14th Street to one-way eastbound from OR-99E to John Adams Street and conversion of 15th Street to one-way westbound from Washington Street to OR-99E. This option would result in more significant changes to trip routing within the study area. It would also likely necessitate installation of a new traffic signal at the intersection of Highway 99E and 15th Street, since this would become the intersection that accommodates westbound left-turns onto OR-99E. Although this alternative improvement can be considered by the city and ODOT, the associated impacts and costs are well beyond what can reasonably be expected as mitigation for development of the subject property.

PROPORTIONALITY ANALYSIS

In order to determine the relative impacts of the proposed development at locations requiring mitigation, a proportionality analysis was prepared. Generally, any requested mitigation must have a logical connection or “nexus” to the proposed development, and the requested mitigation must be roughly proportional to the impacts of the proposed development.

For this project, two primary mitigations were recommended based on the safety analysis. These consist of installation of a northbound left-turn lane at the site access and a collection of improvements near the intersection of 14th Street and Main Street to improve safety while maintaining acceptable operation of the impacted intersections.

The northbound left-turn lane recommended at the site access serves site traffic and is located along the site frontage. Accordingly, there is a logical nexus between the proposed development and the safety mitigation. Since the access will serve exclusively site traffic, it is reasonable to request that the improvement be funded by the proposed development. Based on the analysis, this improvement should be constructed prior to occupancy of Phase 2 of the proposed development.

The improvements intended to address existing safety concerns at the intersection of 14th Street and Main Street are not directly contiguous to the site, and the proposed development is not causing the safety problem since it is occurring under existing conditions. However, the site will add trips through the intersection. Accordingly, there is also a logical nexus between this improvement need and the proposed development.

In order to assess the proportionate impacts of the proposed development on the intersection, traffic volumes were considered for existing and year 2022 conditions. These volumes were compared to the projected number of site trips added to the intersection under Phase 1 development of the 99-room hotel as well as at full site build-out. Currently, the intersection accommodates 1,062 entering vehicles during the morning peak hour and 1,123 entering vehicles during the evening peak hour. Under year 2022 background plus site trips conditions, the intersection is projected to accommodate

1,196 entering vehicles during the morning peak hour and 1,265 entering vehicles during the evening peak hour.

Based on the site trip generation and distribution, Phase 1 of the proposed development would be projected to add 8 site trips to the intersection during the morning peak hour and 10 site trips during the evening peak hour. At full site build-out, the development is projected to add 23 trips to the intersection during the morning peak hour and 26 trips during the evening peak hour in total.

Based on the analysis, the added trips from Phase 1 are projected to represent less than one percent of the traffic passing through the intersection under year 2022 conditions, and the total impact from Phases 1 and 2 is projected to represent two percent of the traffic passing through the intersection.

Often, proportionality analysis is conducted not based on the total intersection volumes as compared to the site traffic volumes, but instead on the portion of the projected traffic increase that is attributable to the proposed development. In this case, it is probably not appropriate to assess relative impacts in this manner, since the historical safety problem is entirely attributable to existing traffic rather than the projected traffic increases. Nevertheless, if the proportionality analysis were conducted based on only the projected increase in trips, the proposed development would represent 6% of the increase during the morning peak hour and 7% of the increase during the evening peak hour for Phase 1. The cumulative impact of Phases 1 and 2 would represent 17% of the increased traffic volumes during the morning peak hour and 18% of the increase during the evening peak hour.

Based on this analysis, it is reasonable to conclude that the proposed development should not be solely responsible for the costs associated with the recommended safety improvements for the intersection of 14th Street at Main Street. If the city desires to require mitigation from the proposed development, it may therefore be appropriate to request a proportionate share payment based on the impacts of the proposed development rather than requesting construction of the recommended improvements.



CONCLUSIONS

Based on the operational analysis, all study area intersections are projected to operate acceptably per Oregon City code standards through 2022 either with or without the addition of site trips from the proposed development.

Based on the crash analysis, the intersection of 14th Street at Main Street was identified as having a high crash rate. It is recommended that the intersection be converted to all-way stop control to address this safety concern. It is recommended that concurrent with conversion to all-way stop control the eastbound and westbound approaches on 14th Street be converted to have a shared left/through lane and a shared through/right lane. Additionally, it is recommended that the westbound approach to Highway 99E be converted to have a shared left/right turn lane and a dedicated right-turn lane. With these improvements in place, it is anticipated that the safety of the intersection will be improved while maintaining acceptable operation of the affected intersections.

It should be noted that the city's Transportation System Plan includes an alternative improvement that could address safety concerns at the intersection of 14th Street and Main Street, consisting of conversion of 14th Street to one-way eastbound from OR-99E to John Adams Street and conversion of 15th Street to one-way westbound from Washington Street to OR-99E. This alternative treatment would likely necessitate installation of a new traffic signal for the intersection of Highway 99E at 15th Street.

Intersection sight distance is adequate at the site access intersections. No sight distance mitigation is recommended.

Based on the left-turn lane warrant analysis, installation of a northbound left-turn lane on Washington Street at the site access is recommended in conjunction with development of Phase 2.

Since the westbound 14th Street approach to Main Street currently meets left-turn lane warrants, it is recommended that a northwest-bound left-turn lane be provided even if the intersection is not converted to all-way stop control.

Due to insufficient main and side-street traffic volumes, traffic signal warrants are not projected to be met for any of the unsignalized stop-controlled study intersections under any of the analysis scenarios.

The proposed site access intersection at Washington Street can be constructed to meet the minimum access spacing standards required by the Oregon City Municipal Code.

Based on the proportionality analysis, it was determined that a requirement to construct a left-turn lane serving the site access would be proportionate to the impacts of the proposed development. However, a requirement for construction of safety improvements at the intersection of 14th Street and Main Street would not proportionate to the impacts of the development. If the city desires to require mitigation from the proposed development, it may therefore be appropriate to request a proportionate share payment based on the impacts of the proposed development rather than requesting construction of the recommended improvements.

Le

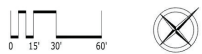
APPENDIX



ABERNETHY PLACE MASTER PLAN
OREGON CITY, OREGON

HILL ARCHITECTS

MIXED USE 1.1
CONCEPTUAL SITE PLAN
NOVEMBER 4, 2016



1 7 5 0 B L A N K E N S H I P R O A D • S U I T E 4 0 0 • W E S T L I N N • O R E G O N 9 7 0 6 8
#13647 ©2016

Total Vehicle Summary

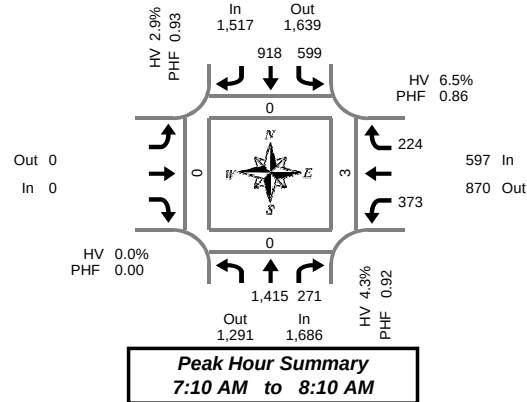


Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	101	36	0	47	56	0			0	37	18	0	295	0	0	2	0
7:05 AM	95	33	0	44	81	0			0	19	19	0	291	0	0	0	0
7:10 AM	89	24	0	55	67	1			0	23	13	0	271	0	0	0	0
7:15 AM	106	28	0	46	63	0			0	37	12	0	292	0	0	1	0
7:20 AM	107	20	0	51	67	0			0	30	21	0	296	0	0	0	0
7:25 AM	92	21	0	61	61	0			0	29	9	0	273	0	0	0	0
7:30 AM	128	27	0	45	66	0			0	34	9	0	309	0	0	0	0
7:35 AM	145	15	0	50	73	0			0	26	23	0	332	0	0	2	0
7:40 AM	112	17	0	56	85	0			0	30	18	0	318	0	0	0	0
7:45 AM	136	25	0	44	86	0			0	43	22	0	356	0	0	0	0
7:50 AM	145	21	0	52	86	0			0	20	25	0	349	0	0	0	0
7:55 AM	115	17	0	48	92	0			0	30	27	0	329	0	0	0	0
8:00 AM	128	27	0	42	87	0			0	47	22	0	353	0	0	0	0
8:05 AM	112	29	0	49	85	0			0	24	23	0	322	0	0	0	0
8:10 AM	88	22	0	46	69	0			0	23	21	0	269	0	0	1	0
8:15 AM	102	18	0	32	74	0			0	33	32	0	291	0	0	0	0
8:20 AM	87	20	0	31	85	0			0	22	27	0	272	0	0	0	0
8:25 AM	76	17	0	35	79	0			0	21	17	0	245	0	0	1	0
8:30 AM	97	17	0	44	81	0			0	45	23	0	307	0	0	0	0
8:35 AM	77	13	0	48	81	0			0	33	30	0	282	0	0	0	0
8:40 AM	79	16	0	44	73	0			0	31	30	0	273	0	0	0	0
8:45 AM	105	22	0	41	74	0			0	46	26	0	314	0	0	0	0
8:50 AM	97	18	0	35	80	0			0	31	31	0	292	0	0	1	0
8:55 AM	79	14	0	36	55	0			0	25	22	0	231	0	0	0	0
Total Survey	2,498	517	0	1,082	1,806	1			0	739	520	0	7,162	0	0	8	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	285	93	0	146	204	1			0	79	50	0	857	0	0	2	0
7:15 AM	305	69	0	158	191	0			0	96	42	0	861	0	0	1	0
7:30 AM	385	59	0	151	224	0			0	90	50	0	959	0	0	2	0
7:45 AM	396	63	0	144	264	0			0	93	74	0	1,034	0	0	0	0
8:00 AM	328	78	0	137	241	0			0	94	66	0	944	0	0	1	0
8:15 AM	265	55	0	98	238	0			0	76	76	0	808	0	0	1	0
8:30 AM	253	46	0	136	235	0			0	109	83	0	862	0	0	0	0
8:45 AM	281	54	0	112	209	0			0	102	79	0	837	0	0	1	0
Total Survey	2,498	517	0	1,082	1,806	1			0	739	520	0	7,162	0	0	8	0

Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,686	1,291	2,977	0	1,517	1,639	3,156	1	0	0	0	0	597	870	1,467	0	3,800	0	0	3	0
%HV	4.3%				2.9%				0.0%				6.5%				4.1%				
PHF	0.92				0.93				0.00				0.86				0.92				

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	T	R	Total	Bikes	L	T	Total	Bikes			Total	Bikes	L		R	Total	
Volume	1,415	271	1,686	0	599	918	1,517	1			0	373	224	597			3,800
%HV	NA	3.9%	6.3%	4.3%	1.7%	3.7%	NA	2.9%	NA	NA	NA	0.0%	7.5%	NA	4.9%	6.5%	4.1%
PHF	0.89	0.93	0.92	0.95	0.87	0.93	0.93	0.00	0.00	0.00	0.00	0.92	0.76	0.86	0.92	0.92	0.92

Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	1,371	284	0	599	883	1			0	358	216	0	3,711	0	0	5	0
7:15 AM	1,414	269	0	590	920	0			0	373	232	0	3,798	0	0	4	0
7:30 AM	1,374	255	0	530	967	0			0	353	266	0	3,745	0	0	4	0
7:45 AM	1,242	242	0	515	978	0			0	372	299	0	3,648	0	0	2	0
8:00 AM	1,127	233	0	483	923	0			0	381	304	0	3,451	0	0	3	0

Heavy Vehicle Summary

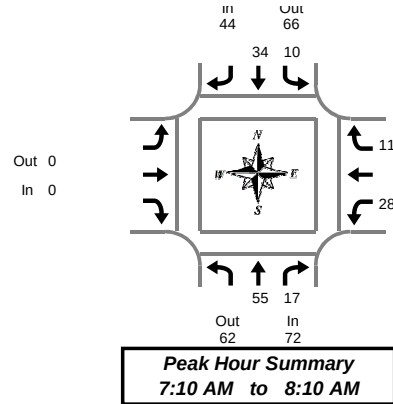


Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

Thursday, January 26, 2017

7:00 AM to 9:00 AM



Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	3	2	5	0	3	3			0	2	3	5	13
7:05 AM	1	1	2	2	3	5			0	1	0	1	8
7:10 AM	1	2	3	1	2	3			0	1	1	2	8
7:15 AM	6	0	6	0	3	3			0	1	2	3	12
7:20 AM	4	2	6	0	6	6			0	2	0	2	14
7:25 AM	4	1	5	1	2	3			0	2	0	2	10
7:30 AM	5	4	9	1	2	3			0	3	0	3	15
7:35 AM	5	1	6	1	1	2			0	1	3	4	12
7:40 AM	5	0	5	1	3	4			0	2	1	3	12
7:45 AM	4	1	5	0	3	3			0	2	2	4	12
7:50 AM	6	2	8	1	2	3			0	2	0	2	13
7:55 AM	5	0	5	2	3	5			0	6	1	7	17
8:00 AM	6	0	6	0	2	2			0	3	0	3	11
8:05 AM	4	4	8	2	5	7			0	3	1	4	19
8:10 AM	6	3	9	0	7	7			0	1	1	2	18
8:15 AM	9	2	11	0	4	4			0	3	3	6	21
8:20 AM	6	2	8	2	5	7			0	3	3	6	21
8:25 AM	5	0	5	3	7	10			0	3	0	3	18
8:30 AM	5	2	7	0	5	5			0	3	1	4	16
8:35 AM	3	0	3	1	1	2			0	3	1	4	9
8:40 AM	3	0	3	2	5	7			0	5	3	8	18
8:45 AM	5	2	7	4	4	8			0	3	2	5	20
8:50 AM	1	2	3	1	7	8			0	2	0	2	13
8:55 AM	4	0	4	2	3	5			0	1	1	2	11
Total Survey	106	33	139	27	88	115			0	58	29	87	341

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	5	5	10	3	8	11			0	4	4	8	29
7:15 AM	14	3	17	1	11	12			0	5	2	7	36
7:30 AM	15	5	20	3	6	9			0	6	4	10	39
7:45 AM	15	3	18	3	8	11			0	10	3	13	42
8:00 AM	16	7	23	2	14	16			0	7	2	9	48
8:15 AM	20	4	24	5	16	21			0	9	6	15	60
8:30 AM	11	2	13	3	11	14			0	11	5	16	43
8:45 AM	10	4	14	7	14	21			0	6	3	9	44
Total Survey	106	33	139	27	88	115			0	58	29	87	341

Heavy Vehicle Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	72	62	134	44	66	110	0	0	0	39	27	66	155
PHF	0.90			0.79			0.00			0.70			0.82

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	55	17	72	10	34	44			0	28	11	39	155
PHF	0.81	0.61	0.90	0.63	0.77	0.79			0.00	0.58	0.46	0.70	0.82

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	49	16	65	10	33	43			0	25	13	38	146
7:15 AM	60	18	78	9	39	48			0	28	11	39	165
7:30 AM	66	19	85	13	44	57			0	32	15	47	189
7:45 AM	62	16	78	13	49	62			0	37	16	53	193
8:00 AM	57	17	74	17	55	72			0	33	16	49	195

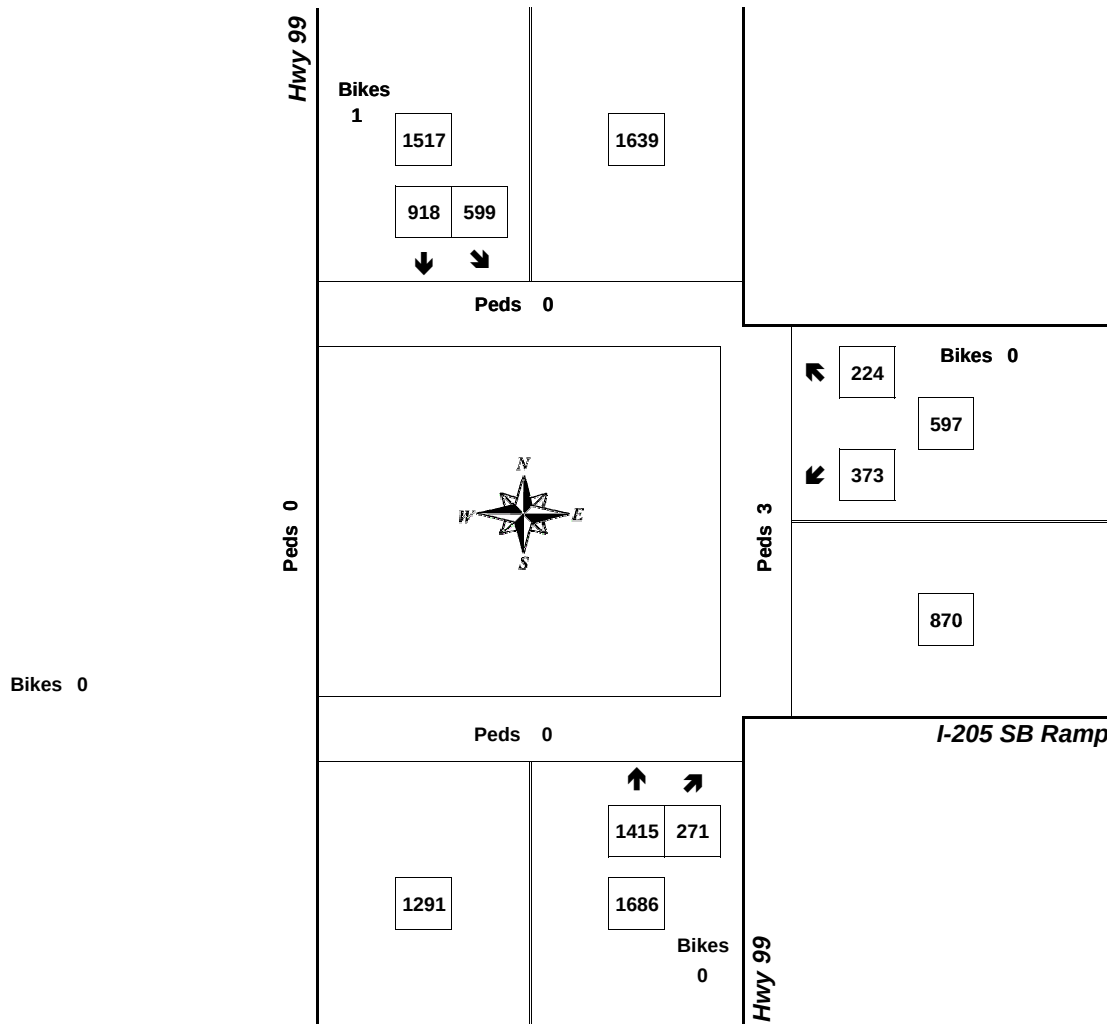
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

7:10 AM to 8:10 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.86	6.5%	597
NB	0.92	4.3%	1,686
SB	0.93	2.9%	1,517
Intersection	0.92	4.1%	3,800

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	74	20	0	46	123	0			0	74		33	0	0	0	0	0
4:05 PM	117	17	0	39	137	0			0	47		27	0	0	0	1	0
4:10 PM	117	16	0	40	137	0			0	82		21	0	0	0	1	0
4:15 PM	95	19	0	44	117	0			0	86		16	0	0	0	0	0
4:20 PM	85	15	0	38	119	0			0	73		28	0	0	0	0	0
4:25 PM	110	17	0	42	162	0			0	76		32	0	0	0	1	0
4:30 PM	97	22	0	37	135	0			0	74		23	0	0	0	0	0
4:35 PM	76	19	0	41	123	0			0	88		36	0	0	0	0	0
4:40 PM	110	17	0	38	169	0			0	53		22	0	0	0	0	0
4:45 PM	101	18	0	44	147	0			0	60		21	0	0	0	0	0
4:50 PM	107	16	0	23	121	0			0	71		16	0	0	0	0	0
4:55 PM	82	8	1	38	112	0			0	81		24	0	0	0	0	0
5:00 PM	122	16	0	45	141	0			0	54		26	0	0	0	1	0
5:05 PM	109	16	0	35	142	0			0	73		25	0	0	0	0	0
5:10 PM	113	26	0	35	116	0			0	66		22	0	0	0	1	0
5:15 PM	101	21	0	44	140	0			0	69		25	0	0	0	1	0
5:20 PM	127	23	0	41	139	0			0	54		25	0	0	0	2	0
5:25 PM	113	25	0	29	121	0			0	61		20	0	0	0	1	0
5:30 PM	73	23	0	42	98	0			0	81		26	0	0	0	0	0
5:35 PM	108	16	0	48	147	0			0	52		19	0	0	0	0	0
5:40 PM	104	15	0	30	133	0			0	63		18	0	0	0	0	0
5:45 PM	105	20	0	35	112	0			0	77		23	0	0	0	1	0
5:50 PM	87	13	0	46	102	0			0	70		24	0	0	0	0	0
5:55 PM	106	10	0	39	117	0			0	64		18	0	0	0	1	0
Total Survey	2,439	428	1	939	3,110	0			0	1,649		570	0	0	0	11	0

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	308	53	0	125	397	0			0	203		81	0	0	0	2	0
4:15 PM	290	51	0	124	398	0			0	235		76	0	0	0	1	0
4:30 PM	283	58	0	116	427	0			0	215		81	0	0	0	0	0
4:45 PM	290	42	1	105	380	0			0	212		61	0	0	0	0	0
5:00 PM	344	58	0	115	399	0			0	193		73	0	0	0	2	0
5:15 PM	341	69	0	114	400	0			0	184		70	0	0	0	4	0
5:30 PM	285	54	0	120	378	0			0	196		63	0	0	0	0	0
5:45 PM	298	43	0	120	331	0			0	211		65	0	0	0	2	0
Total Survey	2,439	428	1	939	3,110	0			0	1,649		570	0	0	0	11	0

Peak Hour Summary

4:25 PM to 5:25 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,474	2,466	3,940	1	2,110	1,552	3,662	0	0	0	0	0	1,116	682	1,798	0	4,700	0	0	6	0
%HV	2.4%				1.8%				0.0%				2.8%				2.3%				
PHF		0.90			0.94				0.00				0.85				0.97				

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	T	R	Total	L	T	Total			Total	L		R	Total				
Volume	1,255	219	1,474	463	1,647	2,110			0	865		299	0	297	1,116		4,700
%HV	NA	2.2%	4.1%	2.4%	2.4%	1.7%	NA	1.8%	NA	NA	NA	0.0%	2.9%	NA	2.4%	2.8%	2.3%
PHF	0.91	0.78	0.90	0.94	0.94	0.94			0.00	0.86		0.82	0.85				0.97

Rolling Hour Summary

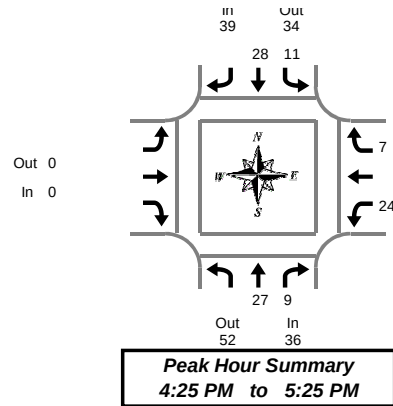
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	1,171	204	1	470	1,602	0			0	865		299	0	0	0	3	0
4:15 PM	1,207	209	1	460	1,604	0			0	855		291	0	0	0	3	0
4:30 PM	1,258	227	1	450	1,606	0			0	804		285	0	0	0	6	0
4:45 PM	1,260	223	1	454	1,557	0			0	785		267	0	0	0	6	0
5:00 PM	1,268	224	0	469	1,508	0			0	784		271	0	0	0	8	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 99 & I-205 SB Ramp

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	1	0	1	0	3	3			0	4	1	5	9
4:05 PM	2	1	3	2	4	6			0	3	0	3	12
4:10 PM	2	2	4	3	4	7			0	0	0	0	11
4:15 PM	4	2	6	0	2	2			0	1	2	3	11
4:20 PM	0	2	2	1	4	5			0	3	1	4	11
4:25 PM	6	1	7	3	2	5			0	2	1	3	15
4:30 PM	5	1	6	1	4	5			0	1	1	2	13
4:35 PM	1	0	1	2	1	3			0	3	0	3	7
4:40 PM	2	0	2	2	1	3			0	2	1	3	8
4:45 PM	1	2	3	0	2	2			0	3	1	4	9
4:50 PM	1	0	1	0	3	3			0	1	0	1	5
4:55 PM	1	0	1	1	3	4			0	0	0	0	5
5:00 PM	1	1	2	1	3	4			0	1	0	1	7
5:05 PM	1	0	1	0	4	4			0	2	0	2	7
5:10 PM	2	0	2	0	1	1			0	4	0	4	7
5:15 PM	3	1	4	0	1	1			0	3	3	6	11
5:20 PM	3	3	6	1	3	4			0	2	0	2	12
5:25 PM	3	0	3	0	3	3			0	3	0	3	9
5:30 PM	1	1	2	0	2	2			0	1	0	1	5
5:35 PM	1	0	1	0	3	3			0	1	1	2	6
5:40 PM	3	0	3	1	2	3			0	1	0	1	7
5:45 PM	2	0	2	0	2	2			0	1	1	2	6
5:50 PM	0	1	1	1	0	1			0	2	1	3	5
5:55 PM	2	0	2	2	2	4			0	0	0	0	6
Total Survey	48	18	66	21	59	80			0	44	14	58	204

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	5	3	8	5	11	16			0	7	1	8	32
4:15 PM	10	5	15	4	8	12			0	6	4	10	37
4:30 PM	8	1	9	5	6	11			0	6	2	8	28
4:45 PM	3	2	5	1	8	9			0	4	1	5	19
5:00 PM	4	1	5	1	8	9			0	7	0	7	21
5:15 PM	9	4	13	1	7	8			0	8	3	11	32
5:30 PM	5	1	6	1	7	8			0	3	1	4	18
5:45 PM	4	1	5	3	4	7			0	3	2	5	17
Total Survey	48	18	66	21	59	80			0	44	14	58	204

Heavy Vehicle Peak Hour Summary

4:25 PM to 5:25 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	36	52	88	39	34	73	0	0	0	31	20	51	106
PHF	0.64			0.75			0.00			0.65			0.76

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	27	9	36	11	28	39			0	24	7	31	106
PHF	0.56	0.56	0.64	0.46	0.70	0.75			0.00	0.67	0.58	0.65	0.76

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	26	11	37	15	33	48			0	23	8	31	116
4:15 PM	25	9	34	11	30	41			0	23	7	30	105
4:30 PM	24	8	32	8	29	37			0	25	6	31	100
4:45 PM	21	8	29	4	30	34			0	22	5	27	90
5:00 PM	22	7	29	6	26	32			0	21	6	27	88

Peak Hour Summary

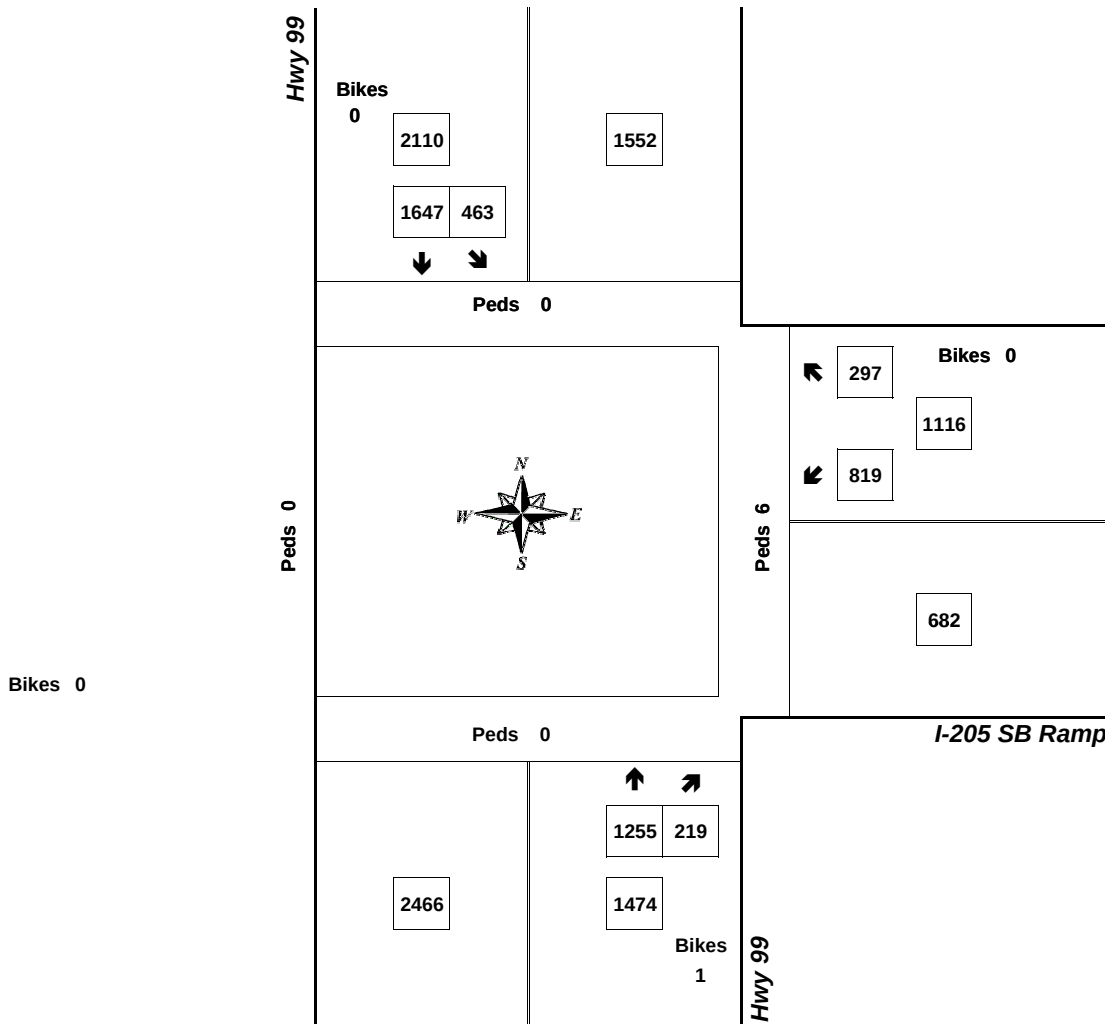


Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

4:25 PM to 5:25 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.85	2.8%	1,116
NB	0.90	2.4%	1,474
SB	0.94	1.8%	2,110
Intersection	0.97	2.3%	4,700

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

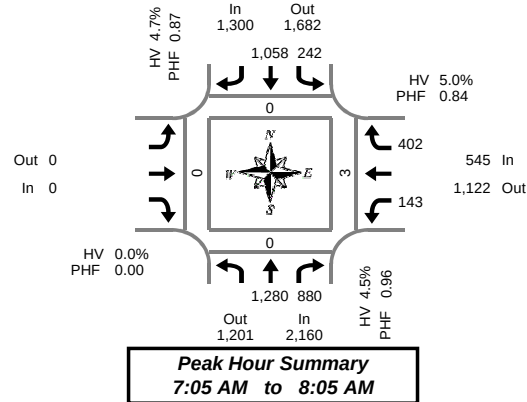


Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	105	69	0	15	61	0			0	9		27	0	0	0	0	0
7:05 AM	103	87	0	26	70	0			0	8		26	0	0	0	0	0
7:10 AM	92	73	0	31	83	0			0	4		24	0	0	1	0	0
7:15 AM	102	77	0	13	80	1			0	11		25	0	0	0	0	0
7:20 AM	102	78	0	18	76	0			0	7		32	0	0	0	0	0
7:25 AM	92	81	0	17	88	0			0	11		32	0	0	0	0	0
7:30 AM	113	72	0	18	72	0			0	11		42	0	0	0	0	0
7:35 AM	121	81	0	15	80	0			0	11		42	0	0	0	0	0
7:40 AM	104	69	0	22	97	0			0	13		38	0	0	2	0	0
7:45 AM	128	56	0	16	103	0			0	19		39	0	0	0	0	0
7:50 AM	117	68	0	25	85	0			0	20		31	0	0	0	0	0
7:55 AM	104	71	0	18	115	0			0	13		31	0	0	0	0	0
8:00 AM	102	67	0	23	109	0			0	15		40	0	0	0	0	0
8:05 AM	101	60	0	15	100	0			0	12		31	0	0	0	0	0
8:10 AM	88	62	0	25	80	0			0	18		28	0	0	0	0	0
8:15 AM	90	56	0	13	93	0			0	5		31	0	0	0	0	0
8:20 AM	78	76	0	19	77	0			0	12		38	0	0	0	0	0
8:25 AM	66	51	0	23	98	0			0	22		37	0	0	0	0	0
8:30 AM	73	66	0	23	98	0			0	13		27	0	0	1	0	0
8:35 AM	66	53	0	15	100	0			0	9		30	0	0	0	0	0
8:40 AM	63	36	0	20	78	0			0	10		40	0	0	0	0	0
8:45 AM	87	53	0	31	91	0			0	23		31	0	0	0	0	0
8:50 AM	77	54	0	20	93	0			0	12		35	0	0	1	0	0
8:55 AM	60	46	0	16	75	0			0	12		39	0	0	0	0	0
Total Survey	2,234	1,562	0	477	2,102	1			0	300		796	0	0	0	5	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	300	229	0	72	214	0			0	21		77	0	0	1	0	0
7:15 AM	296	236	0	48	244	1			0	29		89	0	0	0	0	0
7:30 AM	338	222	0	55	249	0			0	35		122	0	0	2	0	0
7:45 AM	349	195	0	59	303	0			0	52		101	0	0	0	0	0
8:00 AM	291	189	0	63	289	0			0	45		99	0	0	0	0	0
8:15 AM	234	183	0	55	268	0			0	39		106	0	0	0	0	0
8:30 AM	202	155	0	58	276	0			0	32		97	0	0	1	0	0
8:45 AM	224	153	0	67	259	0			0	47		105	0	0	1	0	0
Total Survey	2,234	1,562	0	477	2,102	1			0	300		796	0	0	0	5	0

Peak Hour Summary

7:05 AM to 8:05 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,160	1,201	3,361	0	1,300	1,682	2,982	1	0	0	0	0	545	1,122	1,667	0	4,005	0	0	3	0
%HV	4.5%				4.7%				0.0%				5.0%				4.6%				
PHF	0.96				0.87				0.00				0.84				0.95				

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total
	T	R	Total	Bikes	L	T	Total	Bikes			Total	Bikes	L		R	Total	
Volume	1,280	880	2,160	0	242	1,010	1,300	1			0	137	389	0	402	545	4,005
%HV	NA	4.1%	5.1%	4.5%	3.3%	5.0%	NA	4.7%	NA	NA	NA	0.0%	9.8%	NA	3.2%	5.0%	4.6%
PHF	0.91	0.93	0.96	0.86	0.86	0.87					0.00	0.69	0.82	0.84		0.95	

Rolling Hour Summary

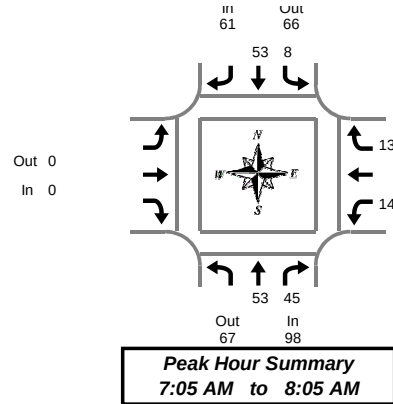
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	1,283	882	0	234	1,010	1			0	137		389	0	0	0	3	0
7:15 AM	1,274	842	0	225	1,085	1			0	161		411	0	0	0	2	0
7:30 AM	1,212	789	0	232	1,109	0			0	171		428	0	0	0	2	0
7:45 AM	1,076	722	0	235	1,136	0			0	168		403	0	0	0	1	0
8:00 AM	951	680	0	243	1,092	0			0	163		407	0	0	0	2	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 99 & I-205 NB Ramp

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	3	3	6	1	3	4			0	0	1	1	11
7:05 AM	2	1	3	1	3	4			0	1	1	2	9
7:10 AM	3	1	4	0	4	4			0	0	0	0	8
7:15 AM	3	5	8	1	3	4			0	2	1	3	15
7:20 AM	6	3	9	0	10	10			0	0	1	1	20
7:25 AM	1	4	5	1	3	4			0	1	3	4	13
7:30 AM	9	1	10	0	4	4			0	1	0	1	15
7:35 AM	5	3	8	0	2	2			0	1	1	2	12
7:40 AM	4	5	9	2	3	5			0	1	2	3	17
7:45 AM	4	3	7	0	3	3			0	3	0	3	13
7:50 AM	7	4	11	2	2	4			0	1	2	3	18
7:55 AM	3	8	11	1	10	11			0	2	0	2	24
8:00 AM	6	7	13	0	6	6			0	1	2	3	22
8:05 AM	7	8	15	3	3	6			0	2	1	3	24
8:10 AM	7	1	8	3	7	10			0	2	3	5	23
8:15 AM	8	3	11	0	7	7			0	0	3	3	21
8:20 AM	5	4	9	1	4	5			0	1	4	5	19
8:25 AM	2	5	7	1	9	10			0	3	5	8	25
8:30 AM	3	5	8	1	7	8			0	1	1	2	18
8:35 AM	2	5	7	1	5	6			0	2	1	3	16
8:40 AM	1	2	3	0	8	8			0	0	2	2	13
8:45 AM	5	4	9	0	5	5			0	3	1	4	18
8:50 AM	3	6	9	0	9	9			0	1	1	2	20
8:55 AM	2	6	8	1	4	5			0	1	2	3	16
Total Survey	101	97	198	20	124	144			0	30	38	68	410

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	8	5	13	2	10	12			0	1	2	3	28
7:15 AM	10	12	22	2	16	18			0	3	5	8	48
7:30 AM	18	9	27	2	9	11			0	3	3	6	44
7:45 AM	14	15	29	3	15	18			0	6	2	8	55
8:00 AM	20	16	36	6	16	22			0	5	6	11	69
8:15 AM	15	12	27	2	20	22			0	4	12	16	65
8:30 AM	6	12	18	2	20	22			0	3	4	7	47
8:45 AM	10	16	26	1	18	19			0	5	4	9	54
Total Survey	101	97	198	20	124	144			0	30	38	68	410

Heavy Vehicle Peak Hour Summary

7:05 AM to 8:05 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	98	67	165	61	66	127	0	0	0	27	53	80	186
PHF	0.70			0.73			0.00			0.75			0.73

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	53	45	98	8	53	61			0	14	13	27	186
PHF	0.74	0.59	0.70	0.50	0.74	0.73			0.00	0.58	0.65	0.75	0.73

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	50	41	91	9	50	59			0	13	12	25	175
7:15 AM	62	52	114	13	56	69			0	17	16	33	216
7:30 AM	67	52	119	13	60	73			0	18	23	41	233
7:45 AM	55	55	110	13	71	84			0	18	24	42	236
8:00 AM	51	56	107	11	74	85			0	17	26	43	235

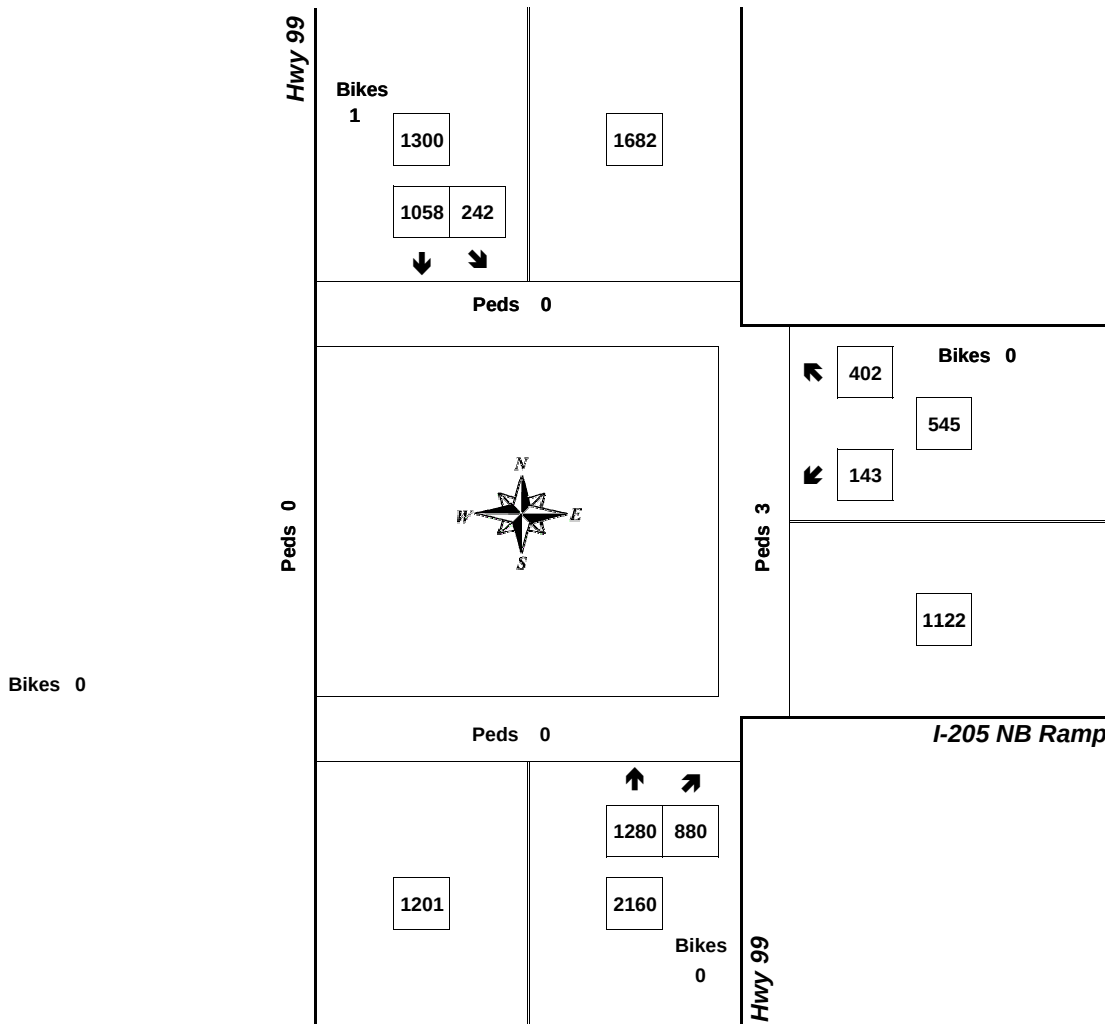
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

7:05 AM to 8:05 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.84	5.0%	545
NB	0.96	4.5%	2,160
SB	0.87	4.7%	1,300
Intersection	0.95	4.6%	4,005

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	73	59	0	33	175	0			0	12		38	0	0	0	1	0
4:05 PM	89	64	0	30	150	0			0	9		47	0	0	0	1	0
4:10 PM	89	67	0	21	171	0			0	6		36	0	0	0	0	0
4:15 PM	97	56	0	57	168	0			0	8		35	0	0	0	0	0
4:20 PM	60	75	0	31	175	0			0	15		44	0	0	0	0	0
4:25 PM	89	61	0	28	185	0			0	6		36	0	0	0	1	0
4:30 PM	106	60	0	25	163	0			0	15		31	0	0	0	0	0
4:35 PM	87	68	0	42	172	0			0	9		35	0	0	0	0	0
4:40 PM	85	57	0	48	185	0			0	6		39	0	0	0	0	0
4:45 PM	78	69	0	28	153	0			0	15		40	0	0	0	1	0
4:50 PM	96	53	0	21	155	0			0	10		29	0	0	0	0	0
4:55 PM	62	62	0	47	167	0			0	16		35	0	0	0	1	0
5:00 PM	97	57	0	33	181	0			0	11		45	0	0	0	0	0
5:05 PM	94	76	0	20	161	0			0	10		28	0	0	0	1	0
5:10 PM	98	57	0	38	164	0			0	6		45	0	0	0	1	0
5:15 PM	94	59	0	35	182	0			0	10		30	0	0	0	0	0
5:20 PM	108	76	0	23	177	0			0	2		27	0	0	0	0	0
5:25 PM	107	69	0	31	170	0			0	5		28	0	0	0	3	0
5:30 PM	80	61	0	35	162	0			0	4		39	0	0	0	0	0
5:35 PM	81	68	0	32	175	0			0	8		30	0	0	0	0	0
5:40 PM	95	70	0	16	174	0			0	4		36	0	0	0	1	0
5:45 PM	86	47	0	45	155	0			0	10		28	0	0	0	0	0
5:50 PM	67	48	0	45	156	0			0	8		33	0	0	0	0	0
5:55 PM	70	50	0	32	159	0			0	2		32	0	0	0	0	0
Total Survey	2,088	1,489	0	796	4,035	0			0	207		846	0	0	0	11	0

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	251	190	0	84	496	0			0	27		121	0	0	0	2	0
4:15 PM	246	192	0	116	528	0			0	29		115	0	0	0	1	0
4:30 PM	278	185	0	115	520	0			0	30		105	0	0	0	0	0
4:45 PM	236	184	0	96	475	0			0	41		104	0	0	0	2	0
5:00 PM	289	190	0	91	506	0			0	27		118	0	0	0	2	0
5:15 PM	309	204	0	89	529	0			0	17		85	0	0	0	3	0
5:30 PM	256	199	0	83	511	0			0	16		105	0	0	0	1	0
5:45 PM	223	145	0	122	470	0			0	20		93	0	0	0	0	0
Total Survey	2,088	1,489	0	796	4,035	0			0	207		846	0	0	0	11	0

Peak Hour Summary

4:30 PM to 5:30 PM

By Approach	Northbound				Southbound				Eastbound				Westbound				Total	Pedestrians			
	Hwy 99				Hwy 99				I-205 NB Ramp				I-205 NB Ramp					Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,875	2,145	4,020	0	2,421	1,524	3,945	0	0	0	0	0	527	1,154	1,681	0	4,823	0	0	7	0
%HV	3.0%				2.3%				0.0%				1.9%				2.6%				
PHF	0.91				0.95				0.00				0.90				0.98				

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	T	R	Total	L	T	Total			Total	L		R	Total
Volume	1,112	763	1,875	391	2,019	2,421			0	127		445	4,764
%HV	NA	2.5%	3.8%	3.0%	1.3%	2.5%	NA	2.3%	NA	NA	NA	0.7%	1.9%
PHF	0.90	0.94	0.91	0.83	0.96	0.95			0.00	0.70		0.87	0.98

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	1,011	751	0	411	2,019	0			0	127		445	0	0	0	5	0
4:15 PM	1,049	751	0	418	2,029	0			0	127		442	0	0	0	5	0
4:30 PM	1,112	763	0	391	2,030	0			0	115		412	0	0	0	7	0
4:45 PM	1,090	777	0	359	2,021	0			0	101		412	0	0	0	8	0
5:00 PM	1,077	738	0	385	2,016	0			0	80		401	0	0	0	6	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	1	3	4	1	7	8			0	2	0	2	14
4:05 PM	3	4	7	2	7	9			0	1	0	1	17
4:10 PM	4	2	6	1	1	2			0	0	0	0	8
4:15 PM	4	3	7	1	4	5			0	1	0	1	13
4:20 PM	2	2	4	0	5	5			0	2	1	3	12
4:25 PM	5	4	9	2	5	7			0	0	1	1	17
4:30 PM	4	1	5	0	4	4			0	2	1	3	12
4:35 PM	3	5	8	1	5	6			0	1	0	1	15
4:40 PM	1	2	3	1	2	3			0	0	0	0	6
4:45 PM	3	1	4	0	4	4			0	1	0	1	9
4:50 PM	1	1	2	0	3	3			0	0	0	0	5
4:55 PM	1	4	5	1	4	5			0	1	0	1	11
5:00 PM	1	3	4	0	5	5			0	0	0	0	9
5:05 PM	2	2	4	0	6	6			0	0	0	0	10
5:10 PM	1	1	2	0	4	4			0	0	1	1	7
5:15 PM	4	3	7	0	2	2			0	1	0	1	10
5:20 PM	5	3	8	1	5	6			0	1	0	1	15
5:25 PM	2	3	5	1	7	8			0	0	1	1	14
5:30 PM	2	2	4	0	3	3			0	0	0	0	7
5:35 PM	1	2	3	0	4	4			0	0	0	0	7
5:40 PM	4	1	5	0	3	3			0	0	0	0	8
5:45 PM	1	2	3	0	2	2			0	2	0	2	7
5:50 PM	2	2	4	0	3	3			0	0	1	1	8
5:55 PM	0	1	1	0	3	3			0	0	0	0	4
Total Survey	57	57	114	12	98	110			0	15	6	21	245

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	8	9	17	4	15	19			0	3	0	3	39
4:15 PM	11	9	20	3	14	17			0	3	2	5	42
4:30 PM	8	8	16	2	11	13			0	3	1	4	33
4:45 PM	5	6	11	1	11	12			0	2	0	2	25
5:00 PM	4	6	10	0	15	15			0	0	1	1	26
5:15 PM	11	9	20	2	14	16			0	2	1	3	39
5:30 PM	7	5	12	0	10	10			0	0	0	0	22
5:45 PM	3	5	8	0	8	8			0	2	1	3	19
Total Survey	57	57	114	12	98	110			0	15	6	21	245

Heavy Vehicle Peak Hour Summary

4:30 PM to 5:30 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	57	58	115	56	31	87	0	0	0	10	34	44	123
PHF	0.71			0.88			0.00			0.63			0.79

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	28	29	57	5	51	56			0	7	3	10	123
PHF	0.64	0.81	0.71	0.63	0.85	0.88			0.00	0.58	0.75	0.63	0.79

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	32	32	64	10	51	61			0	11	3	14	139
4:15 PM	28	29	57	6	51	57			0	8	4	12	126
4:30 PM	28	29	57	5	51	56			0	7	3	10	123
4:45 PM	27	26	53	3	50	53			0	4	2	6	112
5:00 PM	25	25	50	2	47	49			0	4	3	7	106

Peak Hour Summary

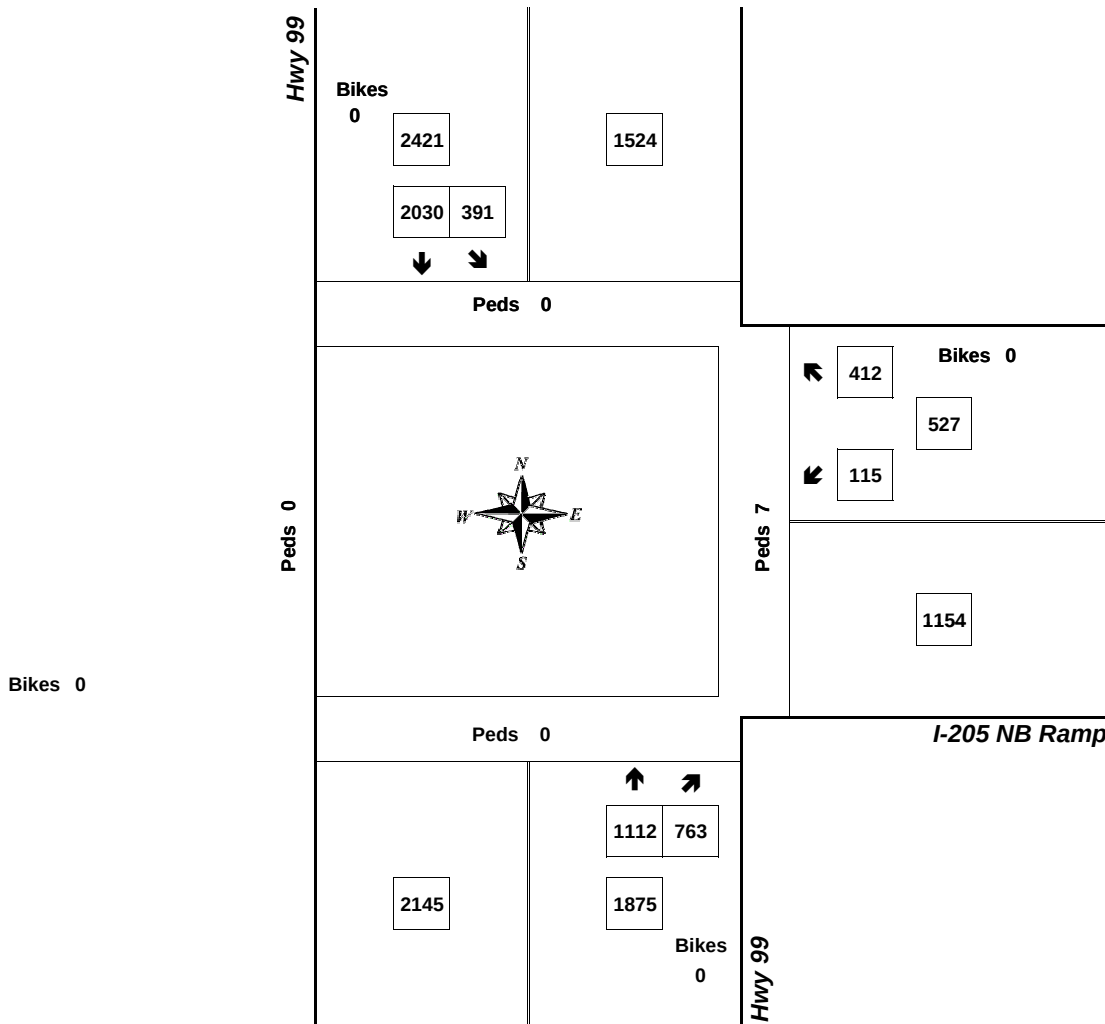


Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

4:30 PM to 5:30 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.90	1.9%	527
NB	0.91	3.0%	1,875
SB	0.95	2.3%	2,421
Intersection	0.98	2.6%	4,823

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

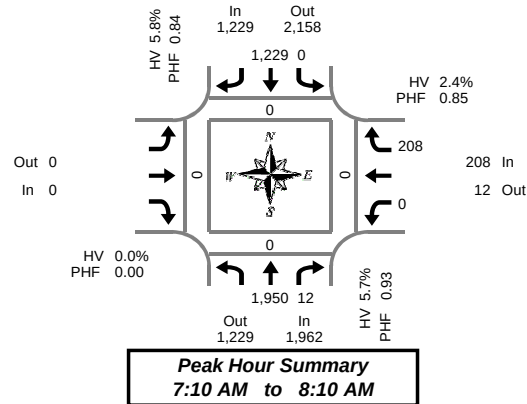


Clay Carney
(503) 833-2740

Hwy 99 & 15th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L		R	Bikes		North	South	East	West
7:00 AM	153	1	0	0	0	69	0	0	0	0	0	0	17	0	0	0	240	0	0	0	0
7:05 AM	165	0	0	0	0	80	0	0	0	0	0	0	18	0	0	0	263	0	0	0	0
7:10 AM	149	1	0	0	0	89	0	0	0	0	0	0	22	0	0	0	261	0	0	0	0
7:15 AM	166	2	0	0	0	91	1	0	0	0	0	0	14	0	0	0	273	0	0	0	0
7:20 AM	161	1	0	0	0	81	0	0	0	0	0	0	12	0	0	0	255	0	0	0	0
7:25 AM	164	2	0	0	0	99	0	0	0	0	0	0	13	0	0	0	278	0	0	0	0
7:30 AM	173	1	0	0	0	82	0	0	0	0	0	0	14	0	0	0	270	0	0	0	0
7:35 AM	185	0	0	0	0	89	0	0	0	0	0	0	14	0	0	0	288	0	0	0	0
7:40 AM	159	0	0	0	0	110	0	0	0	0	0	0	23	0	0	0	292	0	0	0	0
7:45 AM	164	1	0	0	0	118	0	0	0	0	0	0	20	0	0	0	303	0	0	0	0
7:50 AM	165	1	0	0	0	103	0	0	0	0	0	0	18	0	0	0	287	0	0	0	0
7:55 AM	162	2	0	0	0	134	0	0	0	0	0	0	21	0	0	0	319	0	0	0	0
8:00 AM	160	0	0	0	0	120	0	0	0	0	0	0	20	0	0	0	300	0	0	0	0
8:05 AM	142	1	0	0	0	113	0	0	0	0	0	0	17	0	0	0	273	0	0	0	0
8:10 AM	131	1	0	0	0	99	0	0	0	0	0	0	21	0	0	0	252	0	0	0	0
8:15 AM	124	1	0	0	0	100	0	0	0	0	0	0	20	0	0	0	245	0	0	0	0
8:20 AM	127	0	0	0	0	89	0	0	0	0	0	0	20	0	0	0	236	0	0	0	0
8:25 AM	97	3	0	0	0	121	0	0	0	0	0	0	27	0	0	0	248	0	0	0	0
8:30 AM	122	0	0	0	0	115	0	0	0	0	0	0	21	0	0	0	258	0	0	0	0
8:35 AM	96	2	0	0	0	105	0	0	0	0	0	0	17	0	0	0	220	0	0	0	0
8:40 AM	75	2	0	0	0	92	0	0	0	0	0	0	25	0	0	0	194	0	0	0	0
8:45 AM	135	2	0	0	0	113	0	0	0	0	0	0	19	0	0	0	269	0	0	0	0
8:50 AM	97	1	0	0	0	104	0	0	0	0	0	0	22	0	0	0	224	0	0	0	0
8:55 AM	93	2	0	0	0	90	0	0	0	0	0	0	19	0	0	0	204	0	0	0	0
Total Survey	3,365	27	0	0	0	2,406	1	0	0	0	0	0	454	0	0	0	6,252	0	0	0	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L		R	Bikes		North	South	East	West
7:00 AM	467	2	0	0	0	238	0	0	0	0	0	0	57	0	0	0	764	0	0	0	0
7:15 AM	491	5	0	0	0	271	1	0	0	0	0	0	39	0	0	0	806	0	0	0	0
7:30 AM	517	1	0	0	0	281	0	0	0	0	0	0	51	0	0	0	850	0	0	0	0
7:45 AM	491	4	0	0	0	355	0	0	0	0	0	0	59	0	0	0	909	0	0	0	0
8:00 AM	433	2	0	0	0	332	0	0	0	0	0	0	58	0	0	0	825	0	0	0	0
8:15 AM	348	4	0	0	0	310	0	0	0	0	0	0	67	0	0	0	729	0	0	0	0
8:30 AM	293	4	0	0	0	312	0	0	0	0	0	0	63	0	0	0	672	0	0	0	0
8:45 AM	325	5	0	0	0	307	0	0	0	0	0	0	60	0	0	0	697	0	0	0	0
Total Survey	3,365	27	0	0	0	2,406	1	0	0	0	0	0	454	0	0	0	6,252	0	0	0	0

Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,962	1,229	3,191	0	1,229	2,158	3,387	1	0	0	0	0	208	12	220	0	3,399	0	0	0	0
%HV	5.7%				5.8%				0.0%				2.4%				5.5%				
PHF	0.93				0.84				0.00				0.85				0.93				

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total
	T	R	Total		L	T	Total				Total	L		R	Total		
Volume		1,950	12	1,962	0	1,229		1,229				0	0		208	208	3,399
%HV	NA	5.7%	0.0%	5.7%	0.0%	5.8%	NA	5.8%	NA	NA	NA	0.0%	0.0%	NA	2.4%	2.4%	5.5%
PHF		0.93	0.60	0.93	0.00	0.84		0.84				0.00	0.00		0.85	0.85	0.93

Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L		R	Bikes		North	South	East	West
7:00 AM	1,966	12	0	0	0	1,145	1	0	0	0	0	0	206	0	0	0	3,329	0	0	0	0
7:15 AM	1,932	12	0	0	0	1,239	1	0	0	0	0	0	207	0	0	0	3,390	0	0	0	0
7:30 AM	1,789	11	0	0	0	1,278	0	0	0	0	0	0	235	0	0	0	3,313	0	0	0	0
7:45 AM	1,565	14	0	0	0	1,309	0	0	0	0	0	0	247	0	0	0	3,135	0	0	0	0
8:00 AM	1,399	15	0	0	0	1,261	0	0	0	0	0	0	248	0	0	0	2,923	0	0	0	0

Heavy Vehicle Summary

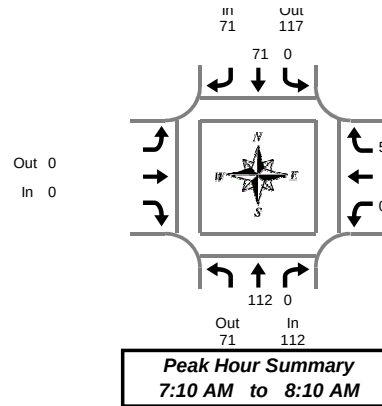


Clay Carney
(503) 833-2740

Hwy 99 & 15th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	6	0	6	0	3	3			0	0	1	1	10
7:05 AM	4	0	4	0	5	5			0	0	0	0	9
7:10 AM	3	0	3	0	3	3			0	0	0	0	6
7:15 AM	8	0	8	0	5	5			0	0	1	1	14
7:20 AM	10	0	10	0	9	9			0	0	0	0	19
7:25 AM	5	0	5	0	5	5			0	0	0	0	10
7:30 AM	10	0	10	0	6	6			0	0	1	1	17
7:35 AM	9	0	9	0	3	3			0	0	0	0	12
7:40 AM	8	0	8	0	5	5			0	0	1	1	14
7:45 AM	8	0	8	0	6	6			0	0	0	0	14
7:50 AM	15	0	15	0	3	3			0	0	0	0	18
7:55 AM	9	0	9	0	14	14			0	0	0	0	23
8:00 AM	13	0	13	0	7	7			0	0	1	1	21
8:05 AM	14	0	14	0	5	5			0	0	1	1	20
8:10 AM	8	0	8	0	9	9			0	0	0	0	17
8:15 AM	7	0	7	0	7	7			0	0	3	3	17
8:20 AM	6	0	6	0	4	4			0	0	3	3	13
8:25 AM	5	1	6	0	14	14			0	0	0	0	20
8:30 AM	8	0	8	0	8	8			0	0	0	0	16
8:35 AM	7	0	7	0	7	7			0	0	0	0	14
8:40 AM	1	0	1	0	8	8			0	0	2	2	11
8:45 AM	8	0	8	0	8	8			0	0	1	1	17
8:50 AM	6	0	6	0	10	10			0	0	3	3	19
8:55 AM	7	0	7	0	4	4			0	0	0	0	11
Total Survey	185	1	186	0	158	158			0	0	18	18	362

Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	13	0	13	0	11	11			0	0	1	1	25
7:15 AM	23	0	23	0	19	19			0	0	1	1	43
7:30 AM	27	0	27	0	14	14			0	0	2	2	43
7:45 AM	32	0	32	0	23	23			0	0	0	0	55
8:00 AM	35	0	35	0	21	21			0	0	2	2	58
8:15 AM	18	1	19	0	25	25			0	0	6	6	50
8:30 AM	16	0	16	0	23	23			0	0	2	2	41
8:45 AM	21	0	21	0	22	22			0	0	4	4	47
Total Survey	185	1	186	0	158	158			0	0	18	18	362

Heavy Vehicle Peak Hour Summary 7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	112	71	183	71	117	188	0	0	0	5	0	5	188
PHF	0.76			0.68			0.00			0.63			0.73

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	112	0	112	0	71	71			0	0	5	5	188
PHF	0.76	0.00	0.76	0.00	0.68	0.68			0.00	0.00	0.63	0.63	0.73

Heavy Vehicle Rolling Hour Summary 7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	95	0	95	0	67	67			0	0	4	4	166
7:15 AM	117	0	117	0	77	77			0	0	5	5	199
7:30 AM	112	1	113	0	83	83			0	0	10	10	206
7:45 AM	101	1	102	0	92	92			0	0	10	10	204
8:00 AM	90	1	91	0	91	91			0	0	14	14	196

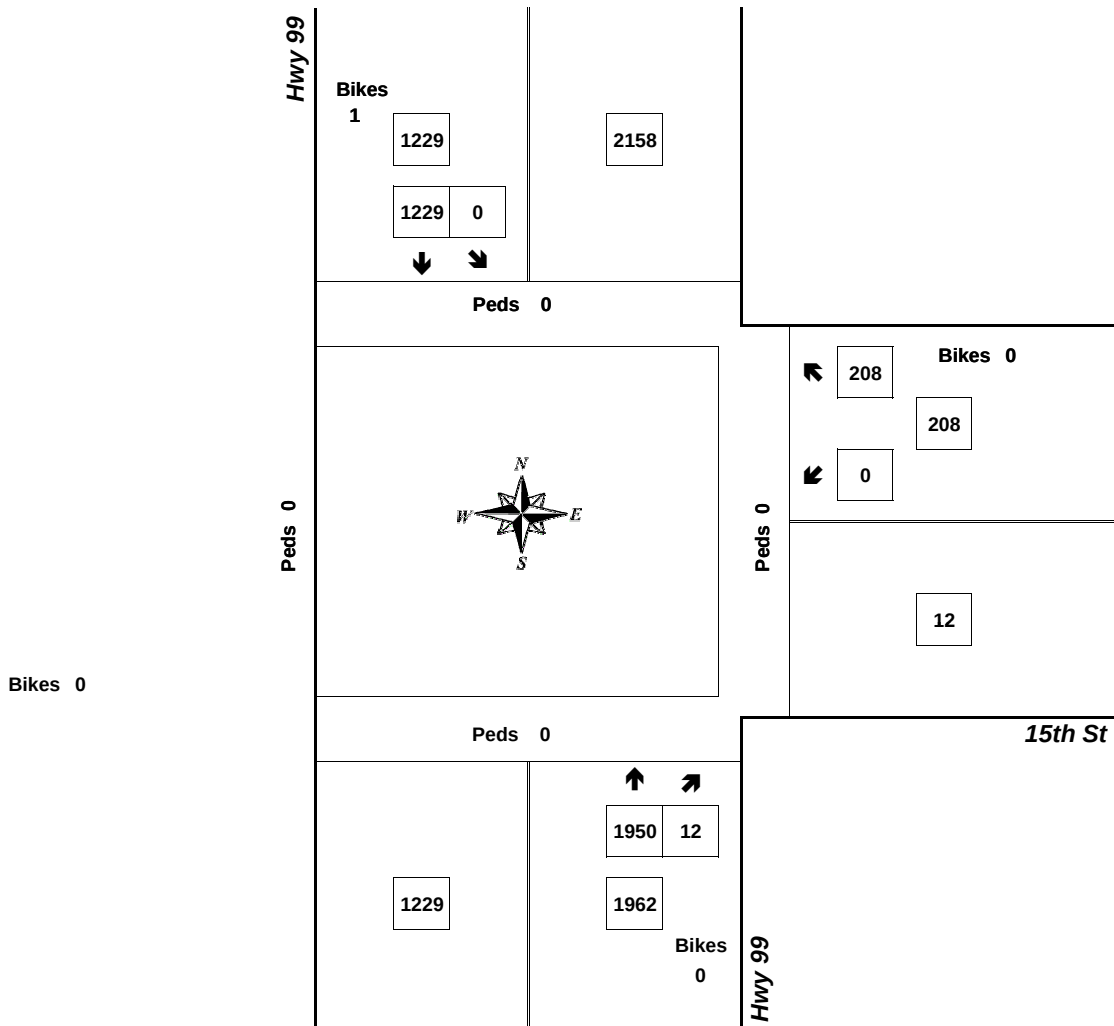
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 99 & 15th St

7:10 AM to 8:10 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.85	2.4%	208
NB	0.93	5.7%	1,962
SB	0.84	5.8%	1,229
Intersection	0.93	5.5%	3,399

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740

Hwy 99 & 15th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L	R	Bikes		North	South	East	West
4:00 PM	121	2	0	0	188	0			0	0	18	0	329	0	0	0	0
4:05 PM	122	2	0	0	154	0			0	0	21	0	299	0	0	1	0
4:10 PM	133	3	0	0	166	0			0	0	15	0	317	0	0	0	0
4:15 PM	143	0	0	0	173	0			0	0	20	0	336	0	0	0	0
4:20 PM	134	2	0	0	186	0			0	0	15	0	337	0	0	0	0
4:25 PM	116	2	0	0	188	0			0	0	21	0	327	0	0	1	0
4:30 PM	144	0	0	0	172	0			0	0	16	0	332	0	0	0	0
4:35 PM	140	0	0	0	185	0			0	0	18	0	343	0	0	0	0
4:40 PM	116	0	0	0	186	0			0	0	27	0	329	0	0	1	0
4:45 PM	125	0	0	0	168	0			0	0	18	0	311	0	0	0	0
4:50 PM	127	1	0	0	146	0			0	0	21	0	295	0	0	1	0
4:55 PM	125	1	0	0	182	0			0	0	19	0	327	0	0	0	0
5:00 PM	136	2	0	0	191	0			0	0	16	0	345	0	0	0	0
5:05 PM	153	1	0	0	180	0			0	0	15	0	349	0	0	1	0
5:10 PM	132	0	0	0	180	0			0	0	18	0	330	0	0	0	0
5:15 PM	133	2	0	0	197	0			0	0	17	0	349	0	0	0	0
5:20 PM	165	0	0	0	189	0			0	0	12	0	366	0	0	0	0
5:25 PM	143	1	0	0	180	0			0	0	21	0	345	0	0	0	0
5:30 PM	133	1	0	0	186	0			0	0	18	0	338	0	0	0	0
5:35 PM	134	2	0	0	188	0			0	0	19	0	343	0	0	0	0
5:40 PM	148	1	0	0	188	0			0	0	14	0	351	0	0	1	0
5:45 PM	117	1	0	0	165	0			0	0	13	0	296	0	0	0	0
5:50 PM	109	1	0	0	182	0			0	0	15	0	307	0	0	0	0
5:55 PM	90	4	0	0	165	0			0	0	15	0	274	0	0	0	0
Total Survey	3,139	29	0	0	4,285	0			0	0	422	0	7,875	0	0	6	0

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes	L		R	Bikes	North		South	East	West	
4:00 PM	376	7	0		0	508		0			0	0		54	0	945	0	0	1	0	
4:15 PM	393	4	0		0	547		0			0	0		56	0	1,000	0	0	1	0	
4:30 PM	400	0	0		0	543		0			0	0		61	0	1,004	0	0	1	0	
4:45 PM	377	2	0		0	496		0			0	0		58	0	933	0	0	1	0	
5:00 PM	421	3	0		0	551		0			0	0		49	0	1,024	0	0	1	0	
5:15 PM	441	3	0		0	566		0			0	0		50	0	1,060	0	0	0	0	
5:30 PM	415	4	0		0	562		0			0	0		51	0	1,032	0	0	1	0	
5:45 PM	316	6	0		0	512		0			0	0		43	0	877	0	0	0	0	
Total Survey		3,139	29	0	0	4,285		0			0	0		422	0	7,875	0	0	6	0	

Peak Hour Summary

4:45 PM to 5:45 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,666	2,175	3,841	0	2,175	1,862	4,037	0	0	0	0	0	208	12	220	0	4,049	0	0	3	0
%HV	3.0%				2.7%				0.0%				2.4%				2.8%				
PHF	0.94				0.96				0.00				0.90				0.95				

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	T	R	Total	L	T	Total			Total	L		Total	
Volume	1,654	12	1,666	0	2,175	2,175			0	0		208	4,049
%HV	NA	3.0%	0.0%	3.0%	0.0%	2.7%	NA	2.7%	NA	NA	NA	0.0%	2.8%
PHF	0.94	0.75	0.94	0.00	0.96	0.96			0.00	0.00		0.90	0.95

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total	Pedestrians Crosswalk				
	T	R	Bikes	L	T	Bikes			Bikes	L		R		Bikes	North	South	East	West
4:00 PM	1,546	13	0	0	2,094	0			0	0	0	229	0	3,882	0	0	4	0
4:15 PM	1,591	9	0	0	2,137	0			0	0	0	224	0	3,961	0	0	4	0
4:30 PM	1,639	8	0	0	2,156	0			0	0	0	218	0	4,021	0	0	3	0
4:45 PM	1,654	12	0	0	2,175	0			0	0	0	208	0	4,049	0	0	3	0
5:00 PM	1,593	16	0	0	2,191	0			0	0	0	193	0	3,993	0	0	2	0

Heavy Vehicle Summary

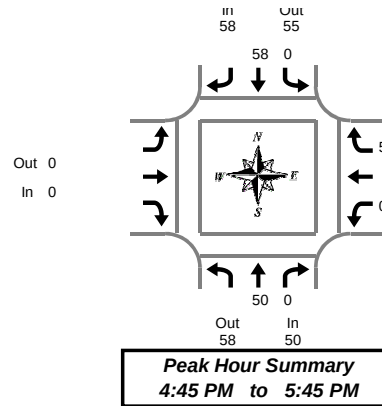


Clay Carney
(503) 833-2740

Hwy 99 & 15th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	4	0	4	0	10	10			0	0	0	0	14
4:05 PM	7	1	8	0	8	8			0	0	0	0	16
4:10 PM	6	0	6	0	1	1			0	0	0	0	7
4:15 PM	8	0	8	0	4	4			0	0	1	1	13
4:20 PM	3	0	3	0	7	7			0	0	2	2	12
4:25 PM	8	0	8	0	5	5			0	0	1	1	14
4:30 PM	5	0	5	0	6	6			0	0	0	0	11
4:35 PM	7	0	7	0	6	6			0	0	1	1	14
4:40 PM	3	0	3	0	2	2			0	0	0	0	5
4:45 PM	3	0	3	0	7	7			0	0	1	1	11
4:50 PM	2	0	2	0	3	3			0	0	1	1	6
4:55 PM	4	0	4	0	6	6			0	0	1	1	11
5:00 PM	3	0	3	0	5	5			0	0	0	0	8
5:05 PM	5	0	5	0	5	5			0	0	0	0	10
5:10 PM	2	0	2	0	4	4			0	0	0	0	6
5:15 PM	6	0	6	0	3	3			0	0	0	0	9
5:20 PM	9	0	9	0	6	6			0	0	1	1	16
5:25 PM	5	0	5	0	7	7			0	0	0	0	12
5:30 PM	5	0	5	0	4	4			0	0	0	0	9
5:35 PM	2	0	2	0	5	5			0	0	0	0	7
5:40 PM	4	0	4	0	3	3			0	0	1	1	8
5:45 PM	3	0	3	0	4	4			0	0	0	0	7
5:50 PM	4	0	4	0	2	2			0	0	0	0	6
5:55 PM	1	0	1	0	2	2			0	0	0	0	3
Total Survey	109	1	110	0	115	115			0	0	10	10	235

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	17	1	18	0	19	19			0	0	0	0	37
4:15 PM	19	0	19	0	16	16			0	0	4	4	39
4:30 PM	15	0	15	0	14	14			0	0	1	1	30
4:45 PM	9	0	9	0	16	16			0	0	3	3	28
5:00 PM	10	0	10	0	14	14			0	0	0	0	24
5:15 PM	20	0	20	0	16	16			0	0	1	1	37
5:30 PM	11	0	11	0	12	12			0	0	1	1	24
5:45 PM	8	0	8	0	8	8			0	0	0	0	16
Total Survey	109	1	110	0	115	115			0	0	10	10	235

Heavy Vehicle Peak Hour Summary

4:45 PM to 5:45 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	50	58	108	58	55	113	0	0	0	5	0	5	113
PHF	0.63			0.85			0.00			0.42			0.76

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	50	0	50	0	58	58			0	0	5	5	113
PHF	0.63	0.00	0.63	0.00	0.85	0.85			0.00	0.00	0.42	0.42	0.76

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	60	1	61	0	65	65			0	0	8	8	134
4:15 PM	53	0	53	0	60	60			0	0	8	8	121
4:30 PM	54	0	54	0	60	60			0	0	5	5	119
4:45 PM	50	0	50	0	58	58			0	0	5	5	113
5:00 PM	49	0	49	0	50	50			0	0	2	2	101

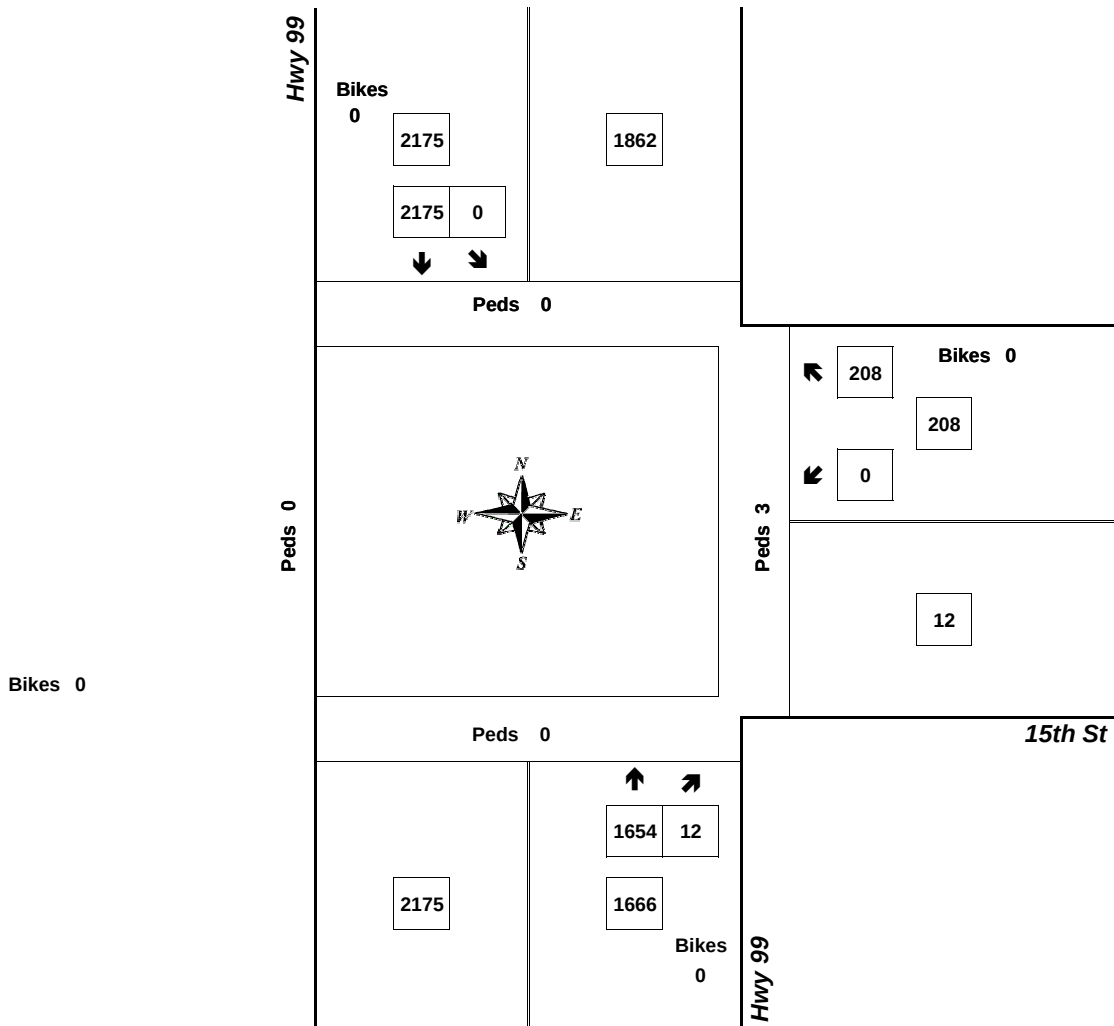
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 99 & 15th St

4:45 PM to 5:45 PM
Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.90	2.4%	208
NB	0.94	3.0%	1,666
SB	0.96	2.7%	2,175
Intersection	0.95	2.8%	4,049

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

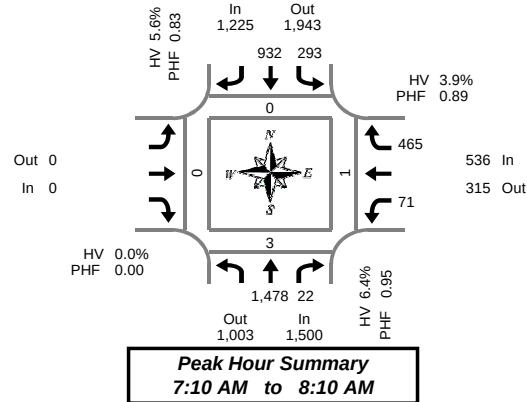


Clay Carney
(503) 833-2740

Hwy 99 & 14th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L		R	Bikes		North	South	East	West
7:00 AM	121	5	0		17	55	0				0		37	0	25	0	240	0	0	0	0
7:05 AM	141	1	0		19	58	0				0		2	0	25	0	246	0	0	0	0
7:10 AM	115	0	0		23	58	0				0		10	0	33	0	239	0	0	0	0
7:15 AM	123	3	0		19	79	0				0		6	0	39	0	269	0	0	0	0
7:20 AM	126	6	0		24	58	0				0		2	0	38	0	254	0	0	0	0
7:25 AM	116	1	0		25	72	0				0		8	0	50	0	272	0	0	0	0
7:30 AM	128	2	0		14	70	0				0		6	0	41	0	261	0	0	0	0
7:35 AM	146	1	0		21	67	0				0		3	0	41	0	279	0	0	0	0
7:40 AM	111	2	0		27	73	0				0		11	0	49	0	273	0	0	0	0
7:45 AM	127	1	0		29	95	0				0		6	0	38	0	296	0	2	0	0
7:50 AM	130	0	0		22	81	0				0		6	0	31	0	270	0	0	0	0
7:55 AM	115	2	0		42	93	0				0		5	0	44	0	301	0	0	0	0
8:00 AM	133	4	0		20	106	0				0		5	0	27	0	295	0	0	0	0
8:05 AM	108	0	0		27	80	0				0		3	0	34	0	252	0	1	1	0
8:10 AM	103	2	0		34	67	0				0		2	0	31	0	239	0	0	0	0
8:15 AM	96	9	0		25	74	0				0		5	0	25	0	234	0	1	0	0
8:20 AM	110	5	0		26	63	0				0		6	0	18	0	228	0	0	0	0
8:25 AM	73	1	0		38	87	0				0		6	0	26	0	231	0	0	0	0
8:30 AM	97	7	0		25	85	0				0		3	0	20	0	237	0	0	0	0
8:35 AM	83	4	0		27	78	0				0		7	0	18	0	217	0	0	0	0
8:40 AM	65	3	0		32	68	0				0		10	0	14	0	192	0	0	0	0
8:45 AM	111	7	0		24	94	0				0		4	0	26	0	266	0	0	0	0
8:50 AM	82	5	0		26	71	0				0		1	0	21	0	206	0	0	0	0
8:55 AM	73	3	0		34	64	0				0		6	0	21	0	201	0	0	0	0
Total Survey	2,633	74	0		620	1,796	0				0		128		747	0	5,998	0	4	1	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L		R	Bikes		North	South	East	West
7:00 AM	377	6	0		59	171	0				0		17	0	95	0	725	0	0	0	0
7:15 AM	365	10	0		68	209	0				0		16	0	127	0	795	0	0	0	0
7:30 AM	385	5	0		62	210	0				0		20	0	131	0	813	0	0	0	0
7:45 AM	372	3	0		93	269	0				0		17	0	113	0	867	0	2	0	0
8:00 AM	344	6	0		81	253	0				0		10	0	92	0	786	0	1	1	0
8:15 AM	279	15	0		89	224	0				0		17	0	69	0	693	0	1	0	0
8:30 AM	245	14	0		84	231	0				0		20	0	52	0	646	0	0	0	0
8:45 AM	266	15	0		84	229	0				0		11	0	68	0	673	0	0	0	0
Total Survey	2,633	74	0		620	1,796	0				0		128		747	0	5,998	0	4	1	0

Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,500	1,003	2,503	0	1,225	1,943	3,168	0	0	0	0	0	536	315	851	0	3,261	0	3	1	0
%HV	6.4%				5.6%				0.0%				3.9%				5.7%				
PHF	0.95				0.83				0.00				0.89				0.94				

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total				
	T	R	Total		L	T	Total				Total		L		R	Total					
Volume	1,478	22	1,500		293	932	1,225				0		71		465	536	3,261				
%HV	NA	6.4%	4.5%	6.4%	3.1%	6.4%	NA	5.6%	NA	NA	0.0%	2.8%	NA	4.1%	3.9%	5.7%					
PHF	0.95	0.55	0.95		0.79	0.83	0.83				0.00	0.77	0.88	0.89		0.94					

Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L		R	Bikes		North	South	East	West
7:00 AM	1,499	24	0		282	859	0				0		70	0	466	0	3,200	0	2	0	0
7:15 AM	1,466	24	0		304	941	0				0		63	0	463	0	3,261	0	3	1	0
7:30 AM	1,380	29	0		325	956	0				0		64	0	405	0	3,159	0	4	1	0
7:45 AM	1,240	38	0		347	977	0				0		64	0	326	0	2,992	0	4	1	0
8:00 AM	1,134	50	0		338	937	0				0		58	0	281	0	2,798	0	2	1	0

Heavy Vehicle Summary

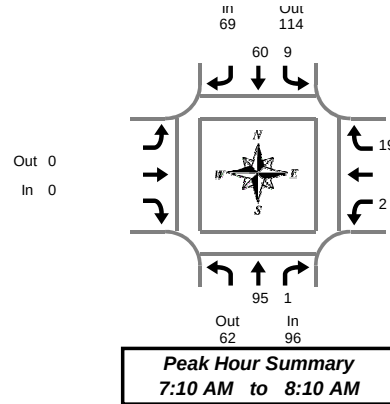


Clay Carney
(503) 833-2740

Hwy 99 & 14th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	7	2	9	1	4	5			0	0	0	0	14
7:05 AM	3	0	3	0	5	5			0	0	0	0	8
7:10 AM	2	0	2	0	2	2			0	0	1	1	5
7:15 AM	8	0	8	0	6	6			0	0	0	0	14
7:20 AM	8	1	9	3	5	8			0	0	2	2	19
7:25 AM	2	0	2	1	5	6			0	1	3	4	12
7:30 AM	9	0	9	0	5	5			0	0	2	2	16
7:35 AM	6	0	6	0	3	3			0	0	2	2	11
7:40 AM	8	0	8	0	3	3			0	0	2	2	13
7:45 AM	7	0	7	2	6	8			0	0	1	1	16
7:50 AM	13	0	13	1	2	3			0	0	2	2	18
7:55 AM	10	0	10	0	12	12			0	1	1	2	24
8:00 AM	10	0	10	2	5	7			0	0	1	1	18
8:05 AM	12	0	12	0	6	6			0	0	2	2	20
8:10 AM	7	0	7	4	5	9			0	0	1	1	17
8:15 AM	7	0	7	1	4	5			0	0	0	0	12
8:20 AM	4	2	6	3	3	6			0	0	0	0	12
8:25 AM	6	0	6	3	10	13			0	0	0	0	19
8:30 AM	5	0	5	3	6	9			0	0	1	1	15
8:35 AM	6	0	6	0	6	6			0	1	1	2	14
8:40 AM	1	0	1	3	6	9			0	0	0	0	10
8:45 AM	4	0	4	1	7	8			0	0	3	3	15
8:50 AM	7	0	7	1	8	9			0	0	1	1	17
8:55 AM	6	0	6	2	4	6			0	1	0	1	13
Total Survey	158	5	163	31	128	159			0	4	26	30	352

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	12	2	14	1	11	12			0	0	1	1	27
7:15 AM	18	1	19	4	16	20			0	1	5	6	45
7:30 AM	23	0	23	0	11	11			0	0	6	6	40
7:45 AM	30	0	30	3	20	23			0	1	4	5	58
8:00 AM	29	0	29	6	16	22			0	0	4	4	55
8:15 AM	17	2	19	7	17	24			0	0	0	0	43
8:30 AM	12	0	12	6	18	24			0	1	2	3	39
8:45 AM	17	0	17	4	19	23			0	1	4	5	45
Total Survey	158	5	163	31	128	159			0	4	26	30	352

Heavy Vehicle Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	96	62	158	69	114	183	0	0	0	21	10	31	186
PHF	0.73			0.69			0.00			0.66			0.75

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	95	1	96	9	60	69			0	2	19	21	186
PHF	0.72	0.25	0.73	0.56	0.65	0.69			0.00	0.50	0.68	0.66	0.75

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	83	3	86	8	58	66			0	2	16	18	170
7:15 AM	100	1	101	13	63	76			0	2	19	21	198
7:30 AM	99	2	101	16	64	80			0	1	14	15	196
7:45 AM	88	2	90	22	71	93			0	2	10	12	195
8:00 AM	75	2	77	23	70	93			0	2	10	12	182

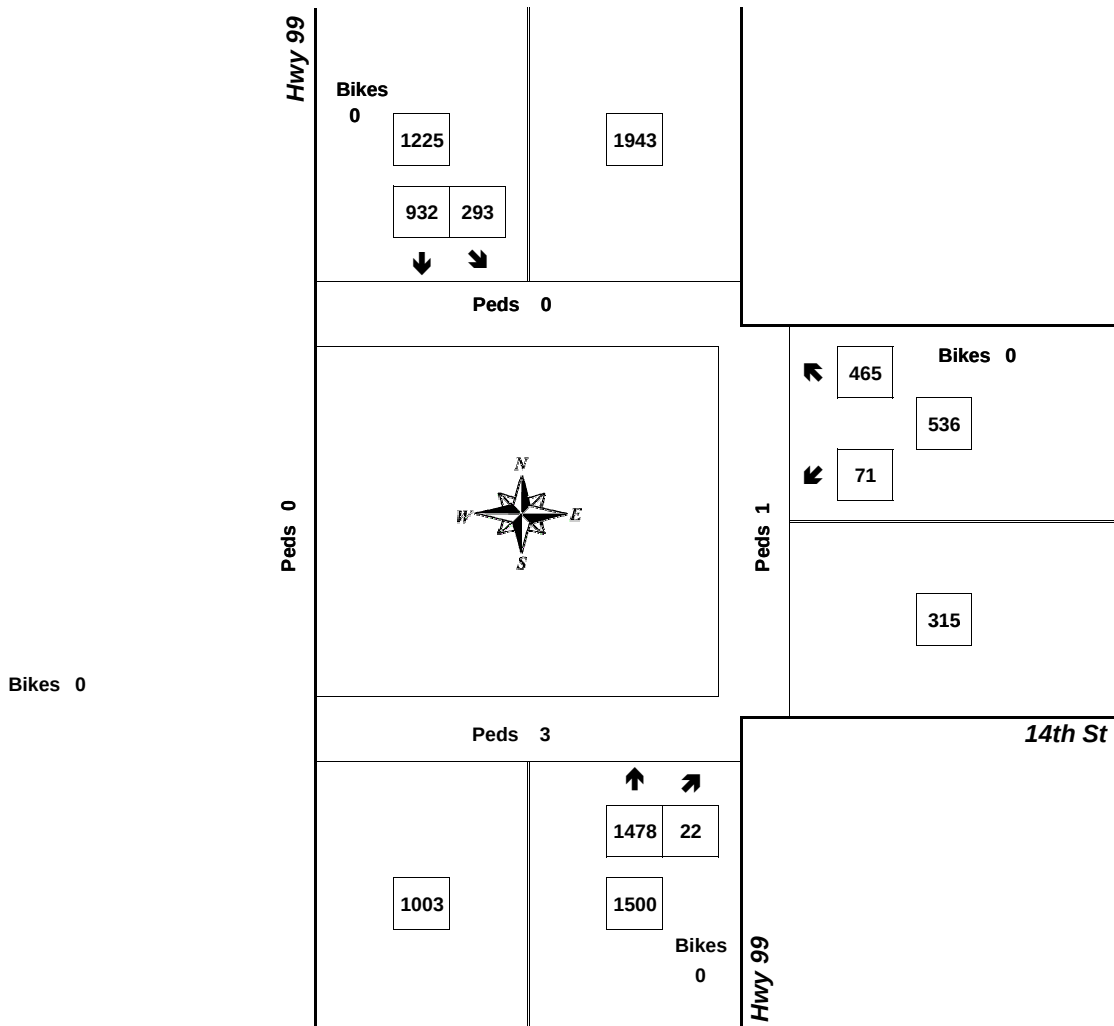
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 99 & 14th St

7:10 AM to 8:10 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.89	3.9%	536
NB	0.95	6.4%	1,500
SB	0.83	5.6%	1,225
Intersection	0.94	5.7%	3,261

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740

Hwy 99 & 14th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total	Pedestrians Crosswalk				
	T	R	Bikes	L	T	Bikes			Bikes	L		R		Bikes	North	South	East	West
4:00 PM	95	2	0	40	156	0			0	4		25	0	322	0	0	0	0
4:05 PM	95	4	0	34	131	0			0	5		33	0	302	0	0	1	0
4:10 PM	117	5	0	21	128	0			0	7		21	0	299	1	0	0	0
4:15 PM	106	3	0	35	154	0			0	7		32	0	337	0	0	0	0
4:20 PM	111	5	0	39	164	0			0	3		26	0	348	0	0	0	0
4:25 PM	103	3	0	32	143	0			0	5		17	0	303	0	0	0	0
4:30 PM	118	4	0	31	149	0			0	5		27	0	334	0	0	0	0
4:35 PM	99	1	0	36	153	0			0	5		37	0	331	0	0	0	0
4:40 PM	92	7	0	39	153	0			0	7		26	0	324	0	0	0	0
4:45 PM	104	2	0	32	144	0			0	5		23	0	310	0	0	0	0
4:50 PM	109	6	0	25	130	0			0	3		17	0	290	0	0	1	0
4:55 PM	96	5	0	38	154	0			0	8		31	0	332	0	0	0	0
5:00 PM	105	4	0	33	155	0			0	1		33	0	331	0	0	0	0
5:05 PM	126	5	0	22	149	0			0	6		31	0	339	0	0	1	0
5:10 PM	90	3	0	37	154	0			0	3		38	0	325	0	0	0	0
5:15 PM	107	3	0	30	160	0			0	7		32	0	339	0	0	0	0
5:20 PM	120	2	0	29	135	0			0	5		39	0	330	0	0	0	0
5:25 PM	120	4	0	33	153	0			0	2		27	0	339	0	0	0	0
5:30 PM	113	4	0	40	147	0			0	9		19	0	332	0	0	0	0
5:35 PM	116	1	0	39	158	0			0	7		25	0	346	0	0	0	0
5:40 PM	126	5	0	27	137	0			0	5		21	0	321	0	0	1	0
5:45 PM	98	3	0	38	139	0			0	2		21	0	301	0	0	0	0
5:50 PM	92	2	0	33	135	0			0	5		21	0	288	0	0	0	0
5:55 PM	75	6	0	37	125	0			0	5		16	0	264	0	0	0	0
Total Survey	2,533	89	0	800	3,506	0			0	121		638	0	7,687	1	0	4	0

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total	Pedestrians Crosswalk					
	T	R	Bikes	L	T	Bikes			Bikes	L		R		Bikes	North	South	East	West	
4:00 PM	307	11	0	95	415		0			0	16		79	0	923	1	0	1	0
4:15 PM	320	11	0	106	461		0			0	15		75	0	988	0	0	0	0
4:30 PM	309	12	0	106	455		0			0	17		90	0	989	0	0	0	0
4:45 PM	309	13	0	95	428		0			0	16		71	0	932	0	0	1	0
5:00 PM	321	12	0	92	458		0			0	10		102	0	995	0	0	1	0
5:15 PM	347	9	0	92	448		0			0	14		98	0	1,008	0	0	0	0
5:30 PM	355	10	0	106	442		0			0	21		65	0	999	0	0	1	0
5:45 PM	265	11	0	108	399		0			0	12		58	0	853	0	0	0	0
Total Survey	2,533	89	0	800	3,506		0			0	121		638	0	7,687	1	0	4	0

Peak Hour Summary

4:00 PM to 5:40 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,344	1,855	3,199	0	2,189	1,639	3,828	0	0	0	0	0	404	443	847	0	3,937	0	0	2	0
%HV	3.6%				2.4%				0.0%				1.2%				2.7%				
PHF	0.93				0.96				0.00				0.81				0.97				

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total
	T	R	Total	Bikes	L	T	Total	Bikes			Total	Bikes	L		R	Total	
Volume	1,298	46	1,344	0	397	1,792	2,189	0			0	64	63		341	404	3,937
%HV	NA	3.6%	2.2%	3.6%	1.3%	2.7%	NA	2.4%	NA	NA	NA	0.0%	1.6%	NA	1.2%	1.2%	2.7%
PHF	0.92	0.77	0.93	0.89	0.97		0.96				0.00	0.88		0.78	0.81		0.97

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total	Pedestrians Crosswalk				
	T	R	Bikes	L	T	Bikes			Bikes	L		R		Bikes	North	South	East	West
4:00 PM	1,245	47	0	402	1,759	0			0	64		315	0	3,832	1	0	2	0
4:15 PM	1,259	48	0	399	1,802	0			0	58		338	0	3,904	0	0	2	0
4:30 PM	1,286	46	0	385	1,789	0			0	57		361	0	3,924	0	0	2	0
4:45 PM	1,332	44	0	385	1,776	0			0	61		336	0	3,934	0	0	3	0
5:00 PM	1,288	42	0	398	1,747	0			0	57		323	0	3,855	0	0	2	0

Heavy Vehicle Summary

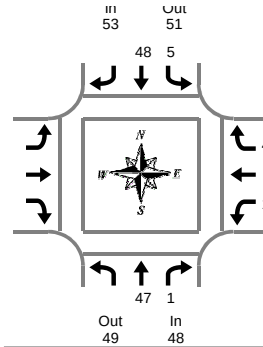


Clay Carney
(503) 833-2740

Hwy 99 & 14th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	4	0	4	1	8	9			0	0	0	0	13
4:05 PM	8	0	8	0	8	8			0	1	0	1	17
4:10 PM	6	0	6	0	3	3			0	1	0	1	10
4:15 PM	7	0	7	3	2	5			0	0	0	0	12
4:20 PM	3	0	3	0	6	6			0	0	0	0	9
4:25 PM	7	0	7	1	3	4			0	0	1	1	12
4:30 PM	3	0	3	1	7	8			0	0	2	2	13
4:35 PM	7	0	7	1	6	7			0	0	0	0	14
4:40 PM	3	0	3	0	2	2			0	0	0	0	5
4:45 PM	4	0	4	0	4	4			0	0	0	0	8
4:50 PM	2	0	2	1	4	5			0	0	0	0	7
4:55 PM	3	1	4	1	3	4			0	1	0	1	9
5:00 PM	4	0	4	1	5	6			0	0	0	0	10
5:05 PM	4	0	4	0	5	5			0	0	0	0	9
5:10 PM	2	0	2	0	4	4			0	0	0	0	6
5:15 PM	7	0	7	0	3	3			0	0	0	0	10
5:20 PM	5	0	5	1	4	5			0	0	4	4	14
5:25 PM	5	0	5	1	4	5			0	0	0	0	10
5:30 PM	5	0	5	0	5	5			0	0	0	0	10
5:35 PM	3	0	3	0	5	5			0	0	0	0	8
5:40 PM	4	0	4	1	2	3			0	0	0	0	7
5:45 PM	3	0	3	0	4	4			0	0	0	0	7
5:50 PM	3	0	3	0	2	2			0	0	1	1	6
5:55 PM	1	0	1	0	1	1			0	1	0	1	3
Total Survey	103	1	104	13	100	113			0	4	8	12	229

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total		
4:00 PM	18	0	18	1	19	20			0	2	0	2	40	
4:15 PM	17	0	17	4	11	15			0	0	1	1	33	
4:30 PM	13	0	13	2	15	17			0	0	2	2	32	
4:45 PM	9	1	10	2	11	13			0	1	0	1	24	
5:00 PM	10	0	10	1	14	15			0	0	0	0	25	
5:15 PM	17	0	17	2	11	13			0	0	4	4	34	
5:30 PM	12	0	12	1	12	13			0	0	0	0	25	
5:45 PM	7	0	7	0	7	7			0	1	1	2	16	
Total Survey	103	1	104	13	100	113			0	4	8	12	229	

Heavy Vehicle Peak Hour Summary

4:40 PM to 5:40 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	48	49	97	53	51	104	0	0	0	5	6	11	106
PHF	0.71			0.88			0.00			0.31			0.78

By Movement	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	47	1	48	5	48	53			0	1	4	5	106
PHF	0.69	0.25	0.71	0.42	0.86	0.88			0.00	0.25	0.25	0.31	0.78

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Interval Total	
	T	R	Total	L	T	Total			Total	L		R		Total
4:00 PM	57	1	58	9	56	65			0	3		3	6	129
4:15 PM	49	1	50	9	51	60			0	1		3	4	114
4:30 PM	49	1	50	7	51	58			0	1		6	7	115
4:45 PM	48	1	49	6	48	54			0	1		4	5	108
5:00 PM	46	0	46	4	44	48			0	1		5	6	100

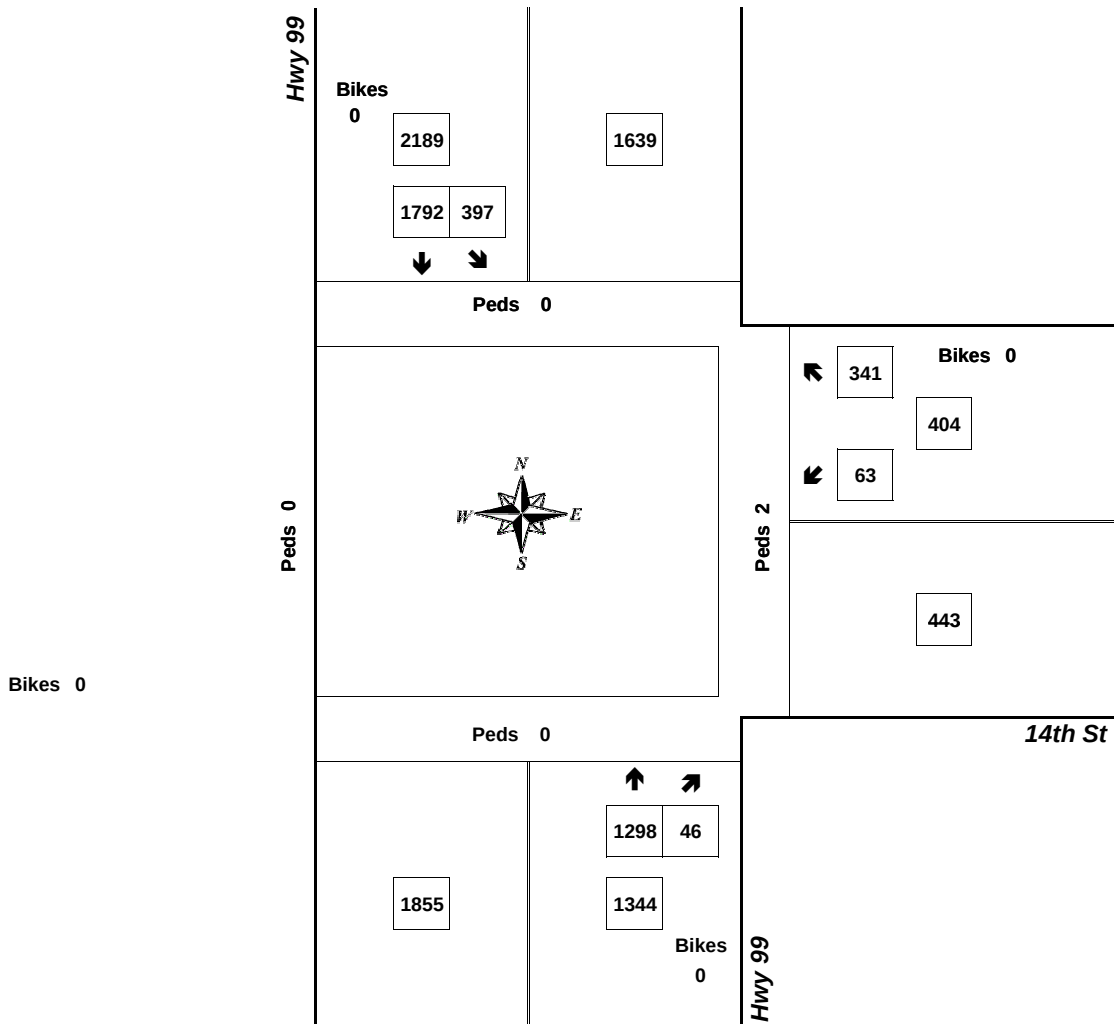
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 99 & 14th St

4:40 PM to 5:40 PM
Wednesday, January 25, 2017



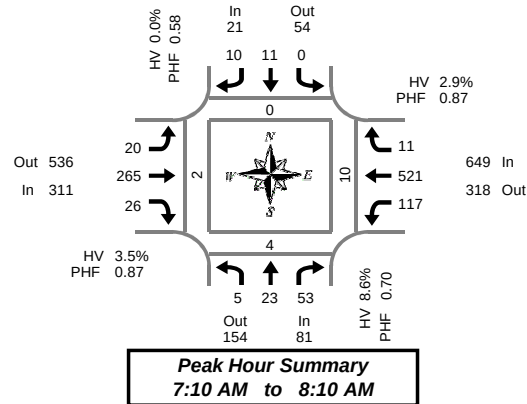
Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.81	1.2%	404
NB	0.93	3.6%	1,344
SB	0.96	2.4%	2,189
Intersection	0.97	2.7%	3,937

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary



Clay Carney
(503) 833-2740



Main St & 14th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM

5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	1	4	0	0	0	2	0	0	19	3	0	9	42	0	0	80	0	1	1	0
7:05 AM	1	0	4	0	0	1	0	0	3	17	0	0	9	29	1	0	65	0	1	1	0
7:10 AM	2	4	6	0	0	1	0	0	3	17	4	0	6	40	0	1	83	0	1	1	1
7:15 AM	0	0	2	0	0	1	0	0	1	21	1	0	14	44	0	0	84	0	0	0	0
7:20 AM	0	1	4	0	0	0	0	0	1	26	2	0	5	43	0	0	82	0	0	1	0
7:25 AM	0	3	2	0	0	1	1	0	2	20	2	0	11	57	1	0	100	0	0	0	0
7:30 AM	0	1	5	0	0	0	0	0	1	18	1	0	11	47	2	0	86	0	0	0	0
7:35 AM	0	0	3	0	0	1	1	0	1	21	0	0	12	44	1	0	84	0	2	1	0
7:40 AM	0	4	2	0	0	1	0	0	3	24	2	0	7	54	0	0	97	0	0	2	1
7:45 AM	0	1	7	0	0	2	1	0	1	23	6	0	6	42	1	0	90	0	0	0	0
7:50 AM	1	3	6	0	0	2	1	0	3	17	1	0	9	42	0	0	85	0	0	2	0
7:55 AM	0	4	7	0	0	1	2	0	1	32	5	0	11	43	3	0	109	0	0	1	0
8:00 AM	0	2	6	0	0	1	2	0	3	22	0	0	10	33	1	0	80	0	1	2	0
8:05 AM	2	0	3	0	0	0	2	0	0	24	2	0	15	32	2	0	82	0	0	0	0
8:10 AM	2	1	8	0	0	4	0	0	5	27	4	0	6	24	1	0	82	0	1	2	0
8:15 AM	0	0	2	0	0	0	1	0	3	30	2	0	6	33	0	0	77	0	1	1	0
8:20 AM	0	3	2	0	0	1	1	0	3	27	1	0	11	22	1	0	72	0	0	0	0
8:25 AM	1	1	3	0	0	2	0	1	9	29	1	0	6	30	1	0	83	0	0	0	0
8:30 AM	0	4	5	0	0	5	1	0	2	26	2	0	9	26	2	0	82	0	0	0	0
8:35 AM	1	3	5	0	0	3	1	0	5	21	4	0	9	22	2	0	76	0	0	0	1
8:40 AM	0	1	4	0	0	2	2	0	4	25	2	0	7	19	2	0	68	0	0	0	0
8:45 AM	4	1	7	0	1	1	0	0	0	28	3	0	13	28	3	0	89	1	0	1	1
8:50 AM	0	1	6	0	0	1	2	0	0	28	2	0	5	21	0	0	66	0	1	1	0
8:55 AM	0	1	3	0	0	1	2	1	7	26	5	0	9	25	0	0	79	2	0	0	0
Total Survey	14	40	106	0	1	32	22	2	61	568	55	0	216	842	24	1	1,981	3	9	17	4

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	3	5	14	0	0	2	2	0	6	53	7	0	24	111	1	1	228	0	3	3	1
7:15 AM	0	4	8	0	0	2	1	0	4	67	5	0	30	144	1	0	266	0	0	1	0
7:30 AM	0	5	10	0	0	2	1	0	5	63	3	0	30	145	3	0	267	0	2	3	1
7:45 AM	1	8	20	0	0	5	4	0	5	72	12	0	26	127	4	0	284	0	0	3	0
8:00 AM	4	3	17	0	0	5	4	0	8	73	6	0	31	89	4	0	244	0	2	4	0
8:15 AM	1	4	7	0	0	3	2	1	15	86	4	0	23	85	2	0	232	0	1	1	0
8:30 AM	1	8	14	0	0	10	4	0	11	72	8	0	25	67	6	0	226	0	0	0	1
8:45 AM	4	3	16	0	1	3	4	1	7	82	10	0	27	74	3	0	234	3	1	2	1
Total Survey	14	40	106	0	1	32	22	2	61	568	55	0	216	842	24	1	1,981	3	9	17	4

Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	81	154	235	0	21	54	75	0	311	536	847	0	649	318	967	1	1,062	0	4	10	2
%HV	8.6%				0.0%				3.5%				2.9%				3.5%				
PHF	0.70				0.58				0.87				0.87				0.93				

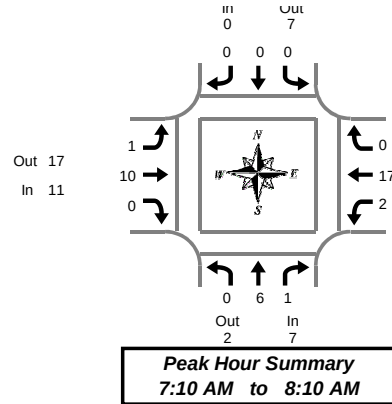
By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	23	53	81	0	11	10	21	20	265	26	311	117	521	11	649	1,062
%HV	0.0%	26.1%	1.9%	8.6%	0.0%	0.0%	0.0%	0.0%	5.0%	3.8%	0.0%	3.5%	1.7%	3.3%	0.0%	2.9%	3.5%
PHF	0.63	0.64	0.66	0.70	0.00	0.55	0.42	0.58	0.71	0.85	0.54	0.87	0.81	0.88	0.46	0.87	0.93

Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	4	22	52	0	0	11	8	0	20	255	27	0	110	527	9	1	1,045	0	5	10	2
7:15 AM	5	20	55	0	0	14	10	0	22	275	26	0	117	505	12	0	1,061	0	4	11	1
7:30 AM	6	20	54	0	0	15	11	1	33	294	25	0	110	446	13	0	1,027	0	5	11	1
7:45 AM	7	23	58	0	0	23	14	1	39	303	30	0	105	368	16	0	986	0	3	8	1
8:00 AM	10	18	54	0	1	21	14	2	41	313	28	0	106	315	15	0	936	3	4	7	2

Heavy Vehicle Summary



Main St & 14th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:20 AM	0	1	0	1	0	0	0	0	0	4	0	4	0	2	0	2	7
7:25 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3
7:30 AM	0	0	1	1	0	0	0	0	0	1	0	1	1	2	0	3	5
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	2
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	2
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
7:50 AM	0	2	0	2	0	0	0	0	1	0	0	1	0	2	0	2	5
7:55 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	2	3
8:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	1	0	1	4
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:10 AM	0	1	1	2	0	0	0	0	1	3	0	4	0	1	0	1	7
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
8:20 AM	0	1	0	1	0	0	0	0	1	5	0	6	0	0	0	0	7
8:25 AM	0	0	0	0	0	0	0	0	1	2	0	3	0	1	0	1	4
8:30 AM	0	1	1	2	0	0	0	0	1	1	0	2	0	1	0	1	5
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
8:40 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	1	3	0	4	6
8:50 AM	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	4
8:55 AM	0	0	0	0	0	0	1	1	0	1	1	2	1	0	0	1	4
Total Survey	0	10	3	13	0	1	1	2	6	29	1	36	6	27	0	33	84

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
7:15 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	4	0	4	11
7:30 AM	0	0	1	1	0	0	0	0	0	1	0	1	1	6	0	7	9
7:45 AM	0	3	0	3	0	0	0	0	1	2	0	3	1	4	0	5	11
8:00 AM	0	2	1	3	0	0	0	0	1	5	0	6	0	3	0	3	12
8:15 AM	0	1	0	1	0	0	0	0	2	8	0	10	1	1	0	2	13
8:30 AM	0	1	1	2	0	0	0	0	2	2	0	4	1	3	0	4	10
8:45 AM	0	1	0	1	0	1	1	2	0	4	1	5	2	4	0	6	14
Total Survey	0	10	3	13	0	1	1	2	6	29	1	36	6	27	0	33	84

Heavy Vehicle Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Main St			Southbound Main St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	7	2	9	0	7	7	11	17	28	19	11	30	37
PHF	0.44			0.00			0.46			0.68			0.62

By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	6	1	7	0	0	0	0	1	10	0	11	2	17	0	19	37
PHF	0.00	0.38	0.25	0.44	0.00	0.00	0.00	0.00	0.25	0.42	0.00	0.46	0.50	0.71	0.00	0.68	0.62

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	5	1	6	0	0	0	0	1	10	0	11	2	16	0	18	35
7:15 AM	0	7	2	9	0	0	0	0	2	13	0	15	2	17	0	19	43
7:30 AM	0	6	2	8	0	0	0	0	4	16	0	20	3	14	0	17	45
7:45 AM	0	7	2	9	0	0	0	0	6	17	0	23	3	11	0	14	46
8:00 AM	0	5	2	7	0	1	1	2	5	19	1	25	4	11	0	15	49

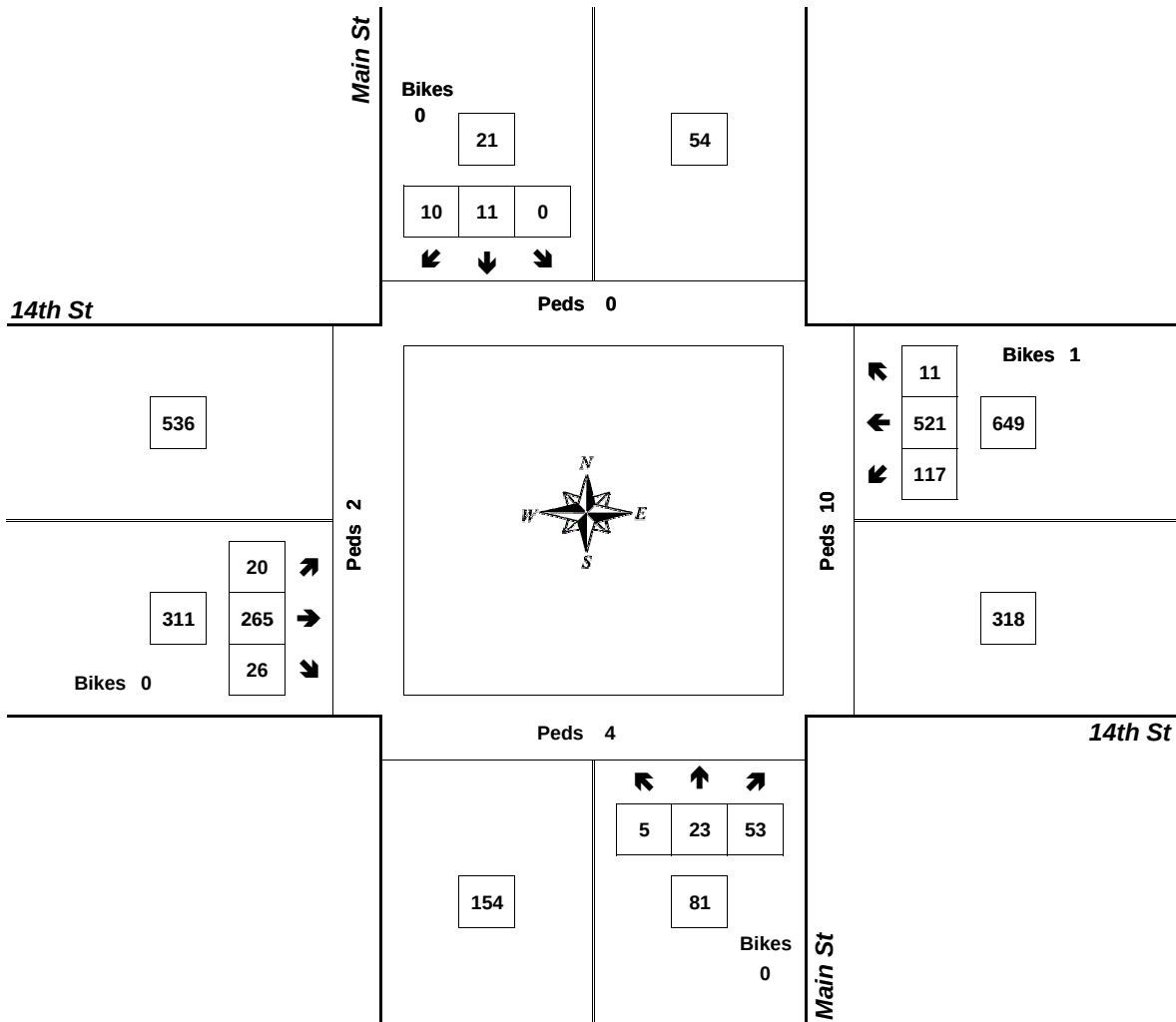
Peak Hour Summary



Clay Carney
(503) 833-2740

Main St & 14th St

7:10 AM to 8:10 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.87	3.5%	311
WB	0.87	2.9%	649
NB	0.70	8.6%	81
SB	0.58	0.0%	21
Intersection	0.93	3.5%	1,062

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740

Main St & 14th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	2	8	0	1	3	1	0	1	37	3	0	8	23	4	0	96	0	0	1	1
4:05 PM	2	2	13	0	0	4	2	0	3	35	0	0	7	32	3	0	103	0	0	0	0
4:10 PM	2	1	10	0	0	1	1	0	2	25	0	0	4	28	2	0	76	0	1	1	1
4:15 PM	2	3	10	0	0	0	2	0	4	34	0	0	4	36	0	0	95	0	1	2	0
4:20 PM	4	1	9	0	1	1	1	0	3	40	2	0	1	19	3	0	85	0	0	2	0
4:25 PM	1	2	16	0	0	3	3	0	2	32	0	0	3	17	0	0	79	0	0	0	2
4:30 PM	0	3	18	0	0	1	3	0	2	28	2	0	5	34	0	0	96	1	0	1	0
4:35 PM	1	3	10	0	0	1	2	0	1	36	2	0	5	36	2	0	99	0	0	0	0
4:40 PM	0	0	10	0	0	2	2	0	1	42	3	0	4	30	3	0	97	0	1	2	0
4:45 PM	2	2	14	0	2	1	0	0	5	28	1	0	5	26	1	0	87	0	2	1	0
4:50 PM	2	3	9	0	0	3	1	0	1	26	2	0	4	24	1	1	76	0	1	0	0
4:55 PM	2	0	11	0	0	0	0	0	3	39	1	0	9	32	2	0	99	0	0	0	0
5:00 PM	2	1	14	0	0	1	0	0	2	30	6	2	2	35	0	0	93	0	0	0	0
5:05 PM	2	1	12	0	0	1	4	0	1	24	2	0	7	33	1	0	88	0	3	0	0
5:10 PM	3	2	15	0	0	2	3	0	0	36	3	0	6	36	1	0	107	0	2	2	1
5:15 PM	1	1	13	0	0	4	1	0	1	30	1	0	6	39	0	0	97	0	0	0	0
5:20 PM	1	2	13	0	0	1	4	0	3	26	1	0	7	36	0	0	94	0	0	0	0
5:25 PM	2	1	10	0	0	0	5	0	4	32	2	0	4	26	0	0	86	0	0	2	0
5:30 PM	1	3	15	0	0	0	0	0	2	40	3	0	5	31	0	0	100	0	0	0	0
5:35 PM	0	1	9	0	1	3	4	0	3	35	2	0	2	22	0	0	82	0	0	0	1
5:40 PM	2	1	9	0	0	2	2	0	1	30	1	0	6	20	0	0	74	0	0	0	0
5:45 PM	1	1	11	0	1	2	1	0	2	39	0	0	8	23	0	0	89	0	0	0	0
5:50 PM	1	2	16	0	0	2	0	0	3	35	2	0	9	24	1	0	95	0	0	1	1
5:55 PM	1	1	8	0	0	0	0	0	3	35	2	0	7	17	0	0	74	0	1	1	3
Total Survey	40	39	283	0	6	38	42	0	53	794	41	2	128	679	24	1	2,167	1	12	16	10

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	9	5	31	0	1	8	4	0	6	97	3	0	19	83	9	0	275	0	1	2	2
4:15 PM	7	6	35	0	1	4	6	0	9	106	2	0	8	72	3	0	259	0	1	4	2
4:30 PM	1	6	38	0	0	4	7	0	4	106	7	0	14	100	5	0	292	1	1	3	0
4:45 PM	6	5	34	0	2	4	1	0	9	93	4	0	18	82	4	1	262	0	3	1	0
5:00 PM	7	4	41	0	0	4	7	0	3	90	11	2	15	104	2	0	288	0	5	2	1
5:15 PM	4	4	36	0	0	5	10	0	8	88	4	0	17	101	0	0	277	0	0	2	0
5:30 PM	3	5	33	0	1	5	6	0	6	105	6	0	13	73	0	0	256	0	0	0	1
5:45 PM	3	4	35	0	1	4	1	0	8	109	4	0	24	64	1	0	258	0	1	2	4
Total Survey	40	39	283	0	6	38	42	0	53	794	41	2	128	679	24	1	2,167	1	12	16	10

Peak Hour Summary

4:35 PM to 5:35 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	184	107	291	0	40	54	94	0	440	425	865	2	459	537	996	1	1,123	0	9	7	1
%HV	4.3%				0.0%				1.4%				1.7%				2.0%				
PHF	0.88				0.67				0.92				0.88				0.94				

By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	19	19	146	184	2	16	22	40	24	389	27	440	64	384	11	459	1,123
%HV	5.3%	26.3%	1.4%	4.3%	0.0%	0.0%	0.0%	0.0%	4.2%	1.0%	3.7%	1.4%	1.6%	1.0%	27.3%	1.7%	2.0%
PHF	0.68	0.79	0.89	0.88	0.25	0.57	0.55	0.67	0.67	0.92	0.61	0.92	0.84	0.86	0.46	0.88	0.94

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	23	22	138	0	4	20	18	0	28	402	16	0	59	337	21	1	1,088	1	6	10	4
4:15 PM	21	21	148	0	3	16	21	0	25	395	24	2	55	358	14	1	1,101	1	10	10	3
4:30 PM	18	19	149	0	2	17	25	0	24	377	26	2	64	387	11	1	1,119	1	9	8	1
4:45 PM	20	18	144	0	3	18	24	0	26	376	25	2	63	360	6	1	1,083	0	8	5	2
5:00 PM	17	17	145	0	2	18	24	0	25	392	25	2	69	342	3	0	1,079	0	6	6	6

Heavy Vehicle Summary

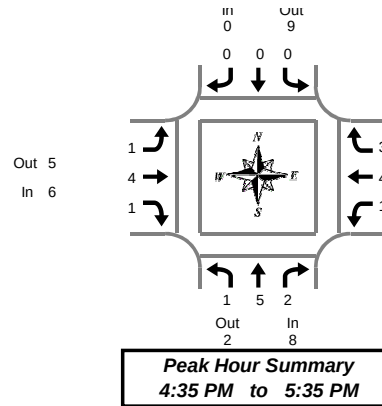


Clay Carney
(503) 833-2740

Main St & 14th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	1	2	0	0	0	0	0	1	0	1	2	0	0	2	5
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:15 PM	0	0	1	1	0	0	0	0	1	2	0	3	0	0	0	0	4
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
4:30 PM	0	2	0	2	0	0	0	0	1	0	0	1	0	2	0	2	5
4:35 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	2	2	4
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
4:50 PM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:10 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
5:20 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4
5:25 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:30 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:45 PM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:50 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Survey	1	10	5	16	0	0	0	0	3	9	1	13	3	11	3	17	46

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	1	2	0	0	0	0	0	1	0	1	2	2	0	4	7
4:15 PM	0	0	1	1	0	0	0	0	1	3	0	4	0	1	0	1	6
4:30 PM	0	2	1	3	0	0	0	0	1	1	0	2	0	2	4	9	9
4:45 PM	1	1	0	2	0	0	0	0	1	1	0	2	0	0	1	1	5
5:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	1	0	0	1	3
5:15 PM	0	1	0	1	0	0	0	0	0	1	1	2	0	4	0	4	7
5:30 PM	0	2	1	3	0	0	0	0	0	1	0	1	0	0	0	0	4
5:45 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	2	0	2	5
Total Survey	1	10	5	16	0	0	0	0	3	9	1	13	3	11	3	17	46

Heavy Vehicle Peak Hour Summary

4:35 PM to 5:35 PM

By Approach	Northbound Main St			Southbound Main St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	8	2	10	0	9	9	6	5	11	8	6	14	22
PHF	0.67			0.00			0.50			0.50			0.69

By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	5	2	8	0	0	0	0	1	4	1	6	1	4	3	8	22
PHF	0.25	0.63	0.50	0.67	0.00	0.00	0.00	0.00	0.25	0.50	0.25	0.50	0.25	0.25	0.25	0.50	0.69

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	4	3	8	0	0	0	0	3	6	0	9	2	5	3	10	27
4:15 PM	1	4	2	7	0	0	0	0	3	6	0	9	1	3	3	7	23
4:30 PM	1	5	1	7	0	0	0	0	2	4	1	7	1	6	3	10	24
4:45 PM	1	5	1	7	0	0	0	0	1	4	1	6	1	4	1	6	19
5:00 PM	0	6	2	8	0	0	0	0	0	3	1	4	1	6	0	7	19

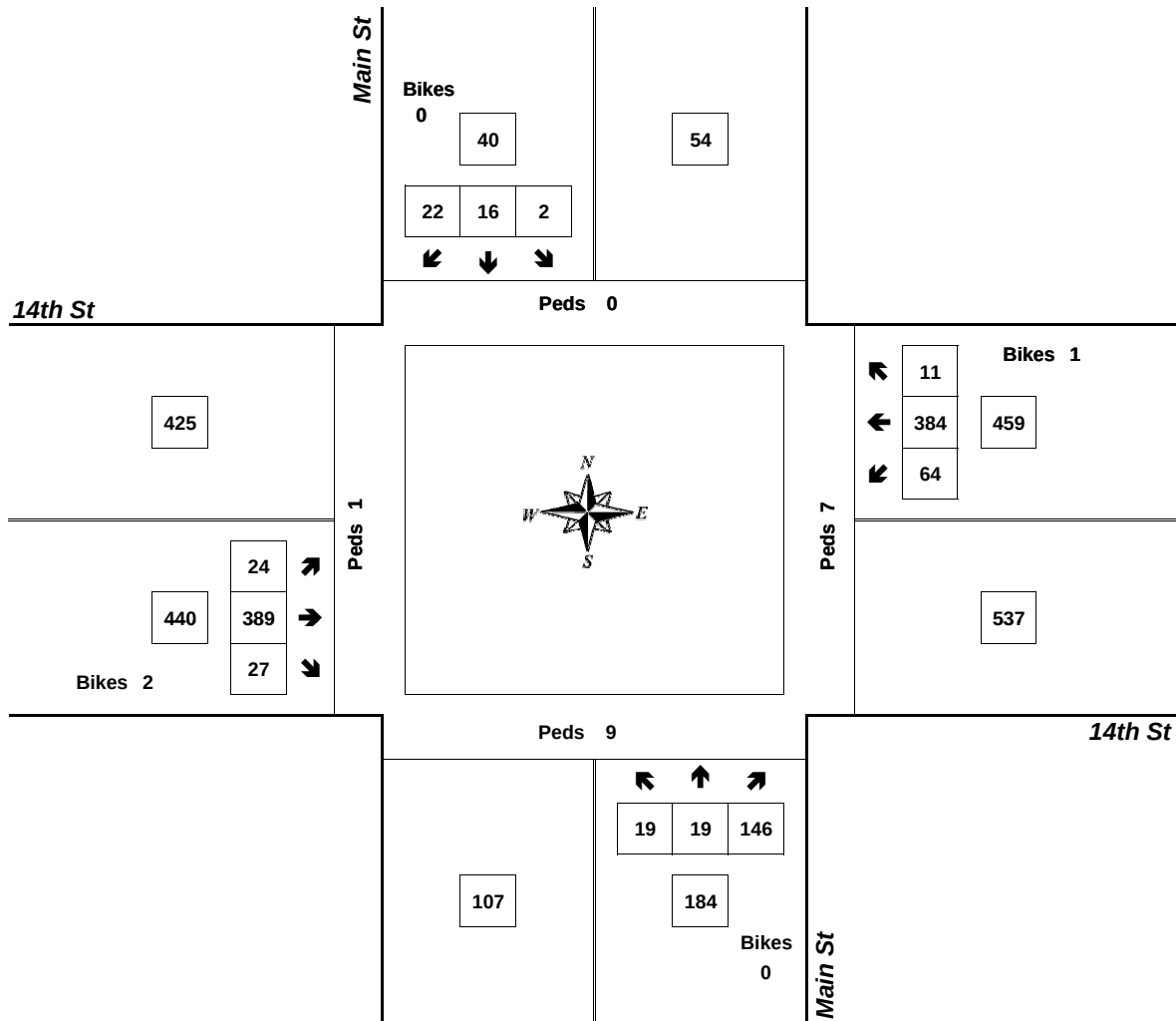
Peak Hour Summary



Clay Carney
(503) 833-2740

Main St & 14th St

4:35 PM to 5:35 PM
Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.92	1.4%	440
WB	0.88	1.7%	459
NB	0.88	4.3%	184
SB	0.67	0.0%	40
Intersection	0.94	2.0%	1,123

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

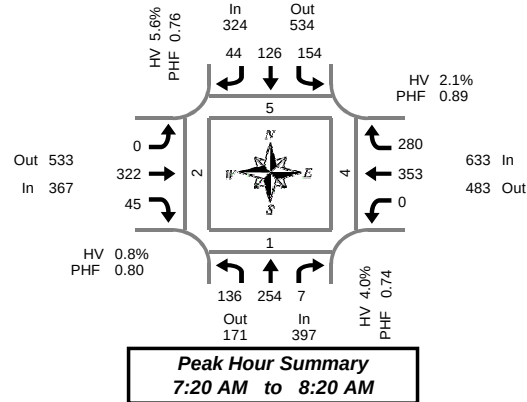


Clay Carney
(503) 833-2740

Washington St & 7th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	18	17	0	0	8	5	2	0	0	11	5	0	0	28	22	0	116	0	1	0	0
7:05 AM	12	13	2	0	7	8	0	0	0	10	3	0	0	31	23	0	109	1	0	0	0
7:10 AM	10	17	1	0	7	3	2	0	0	12	3	0	0	23	26	0	104	0	1	0	0
7:15 AM	8	13	0	0	6	2	1	0	0	9	1	0	0	35	27	0	102	0	0	0	0
7:20 AM	13	19	1	0	7	10	3	0	0	18	3	0	0	32	22	0	128	0	0	0	0
7:25 AM	5	14	0	0	6	8	3	0	0	25	3	0	0	31	28	0	123	2	0	0	0
7:30 AM	17	28	0	0	17	6	5	0	0	25	2	0	0	31	26	0	157	1	1	1	0
7:35 AM	13	23	0	0	8	10	3	0	0	24	3	0	0	30	25	0	139	0	0	0	0
7:40 AM	10	21	0	0	15	12	3	0	0	20	7	0	0	34	31	0	153	0	0	1	0
7:45 AM	19	27	1	0	19	14	7	0	0	30	3	0	0	29	27	0	176	0	0	0	0
7:50 AM	16	31	1	0	12	18	7	0	0	35	3	0	0	30	21	0	174	0	0	0	0
7:55 AM	13	25	1	0	15	7	2	0	0	38	2	0	0	30	23	0	156	1	0	0	0
8:00 AM	4	14	2	0	15	11	3	0	0	33	4	0	0	32	14	0	132	1	0	1	0
8:05 AM	9	20	1	0	12	7	5	0	0	26	4	0	0	23	23	0	130	0	0	1	0
8:10 AM	12	16	0	0	9	14	2	0	0	22	3	0	0	16	19	0	113	0	0	0	1
8:15 AM	5	16	0	0	19	9	1	0	0	26	8	0	0	35	21	0	140	0	0	0	1
8:20 AM	6	17	1	0	13	12	2	0	0	21	2	0	0	25	12	0	111	1	1	0	2
8:25 AM	5	11	1	0	18	11	3	0	0	21	4	0	0	33	19	0	126	1	0	0	0
8:30 AM	13	16	0	0	11	9	3	0	0	49	0	0	0	26	17	0	144	0	0	0	0
8:35 AM	12	10	1	0	19	5	7	0	0	30	2	0	0	27	11	0	124	1	0	1	0
8:40 AM	3	16	2	0	17	11	1	0	0	29	3	0	0	29	14	0	125	0	0	0	0
8:45 AM	5	14	0	0	13	9	2	0	0	34	1	0	0	28	15	0	121	0	0	0	0
8:50 AM	15	10	2	0	7	9	4	0	1	40	4	0	0	26	22	0	140	0	1	0	0
8:55 AM	0	13	2	0	20	5	4	0	0	27	1	0	0	15	16	0	103	0	1	0	1
Total Survey	243	421	19	0	300	215	75	0	1	615	74	0	0	679	504	0	3,146	9	6	5	5

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	40	47	3	0	22	16	4	0	0	33	11	0	0	82	71	0	329	1	2	0	0
7:15 AM	26	46	1	0	19	20	7	0	0	52	7	0	0	98	77	0	353	2	0	0	0
7:30 AM	40	72	0	0	40	28	11	0	0	69	12	0	0	95	82	0	449	1	1	2	0
7:45 AM	48	83	3	0	46	39	16	0	0	103	8	0	0	89	71	0	506	1	0	0	0
8:00 AM	25	50	3	0	36	32	10	0	0	81	11	0	0	71	56	0	375	1	0	2	1
8:15 AM	16	44	2	0	50	32	6	0	0	68	14	0	0	93	52	0	377	2	1	0	3
8:30 AM	28	42	3	0	47	25	11	0	0	108	5	0	0	82	42	0	393	1	0	1	0
8:45 AM	20	37	4	0	40	23	10	0	1	101	6	0	0	69	53	0	364	0	2	0	1
Total Survey	243	421	19	0	300	215	75	0	1	615	74	0	0	679	504	0	3,146	9	6	5	5

Peak Hour Summary

7:20 AM to 8:20 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	397	171	568	0	324	534	858	0	367	533	900	0	633	483	1,116	0	1,721	5	1	4	2
%HV	4.0%				5.6%				0.8%				2.1%				2.9%				
PHF	0.74				0.76				0.80				0.89				0.85				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	136	254	7	397	154	126	44	324	0	322	45	367	0	353	280	633	1,721
%HV	2.9%	4.7%	0.0%	4.0%	5.2%	7.1%	2.3%	5.6%	0.0%	0.9%	0.0%	0.8%	0.0%	1.1%	3.2%	2.1%	2.9%
PHF	0.71	0.77	0.44	0.74	0.84	0.72	0.65	0.76	0.00	0.76	0.75	0.80	0.00	0.93	0.84	0.89	0.85

Rolling Hour Summary

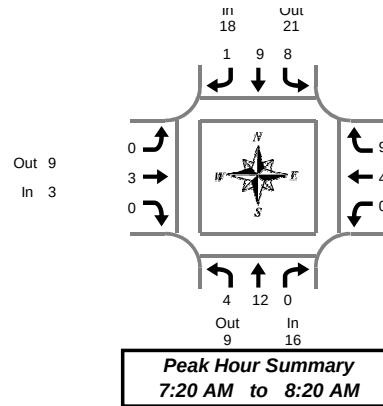
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	154	248	7	0	127	103	38	0	0	257	38	0	0	364	301	0	1,637	5	3	2	0
7:15 AM	139	251	7	0	141	119	44	0	0	305	38	0	0	353	286	0	1,683	5	1	4	1
7:30 AM	129	249	8	0	172	131	43	0	0	321	45	0	0	348	261	0	1,707	5	2	4	4
7:45 AM	117	219	11	0	179	128	43	0	0	360	38	0	0	335	221	0	1,651	5	1	3	4
8:00 AM	89	173	12	0	173	112	37	0	1	358	36	0	0	315	203	0	1,509	4	3	3	5

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & 7th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	1	3
7:05 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	1	1	3
7:10 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	1	3
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	3
7:20 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	1	1	4
7:25 AM	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	2
7:30 AM	1	4	0	5	1	0	0	1	0	0	0	0	0	0	3	3	9
7:35 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	2	0	2	0	2	0	1	0	1	0	0	1	1	6
7:50 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	3
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
8:00 AM	1	0	0	1	2	1	0	3	0	0	0	0	0	1	0	1	5
8:05 AM	2	2	0	4	0	1	0	1	0	1	0	1	0	0	2	2	8
8:10 AM	0	1	0	1	1	1	0	2	0	1	0	1	0	2	0	2	6
8:15 AM	0	0	0	0	3	1	0	4	0	0	0	0	0	1	0	1	5
8:20 AM	1	1	0	2	1	2	0	3	0	0	0	0	0	0	1	1	6
8:25 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
8:30 AM	0	1	0	1	4	1	0	5	0	0	0	0	0	2	1	3	9
8:35 AM	1	1	0	2	2	0	0	2	0	0	0	0	0	0	0	0	4
8:40 AM	0	1	0	1	2	0	0	2	0	0	0	0	0	0	1	1	4
8:45 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	3	3	6
8:50 AM	0	1	0	1	1	0	0	1	0	0	0	0	0	1	2	3	5
8:55 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	1	2
Total Survey	7	18	1	26	22	17	1	40	0	4	0	4	0	9	21	30	100

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	0	1	2	2	2	0	4	0	0	0	0	0	1	2	3	9
7:15 AM	0	1	0	1	1	2	1	4	0	1	0	1	0	1	2	3	9
7:30 AM	1	5	0	6	1	0	0	1	0	0	0	0	0	0	3	3	10
7:45 AM	0	3	0	3	0	3	0	3	0	1	0	1	0	0	3	3	10
8:00 AM	3	3	0	6	3	3	0	6	0	2	0	2	0	3	2	5	19
8:15 AM	1	1	0	2	5	4	0	9	0	0	0	0	0	1	1	2	13
8:30 AM	1	3	0	4	8	1	0	9	0	0	0	0	0	2	2	4	17
8:45 AM	0	2	0	2	2	2	0	4	0	0	0	0	0	1	6	7	13
Total Survey	7	18	1	26	22	17	1	40	0	4	0	4	0	9	21	30	100

Heavy Vehicle Peak Hour Summary

7:20 AM to 8:20 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 7th St			Westbound 7th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	16	9	25	18	21	39	3	9	12	13	11	24	50
PHF	0.67			0.64			0.38			0.65			0.66

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	4	12	0	16	8	9	1	18	0	3	0	3	0	4	9	13	50
PHF	0.33	0.60	0.00	0.67	0.50	0.75	0.25	0.64	0.00	0.38	0.00	0.38	0.00	0.33	0.56	0.65	0.66

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	2	9	1	12	4	7	1	12	0	2	0	2	0	2	10	12	38
7:15 AM	4	12	0	16	5	8	1	14	0	4	0	4	0	4	10	14	48
7:30 AM	5	12	0	17	9	10	0	19	0	3	0	3	0	4	9	13	52
7:45 AM	5	10	0	15	16	11	0	27	0	3	0	3	0	6	8	14	59
8:00 AM	5	9	0	14	18	10	0	28	0	2	0	2	0	7	11	18	62

Peak Hour Summary

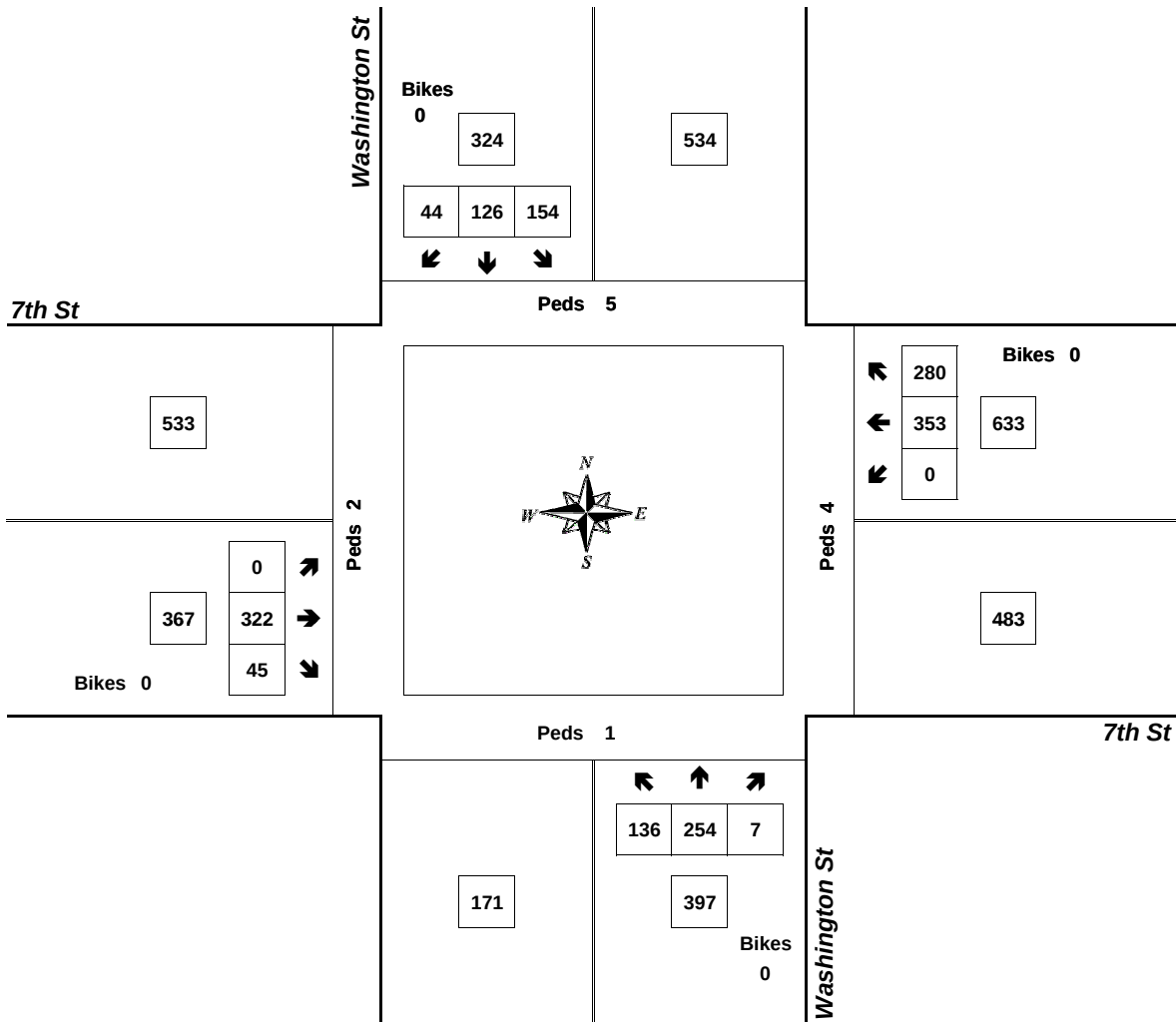


Clay Carney
(503) 833-2740

Washington St & 7th St

7:20 AM to 8:20 AM

Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.80	0.8%	367
WB	0.89	2.1%	633
NB	0.74	4.0%	397
SB	0.76	5.6%	324
Intersection	0.85	2.9%	1,721

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

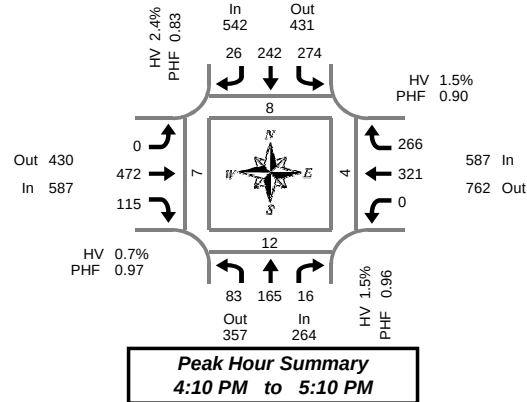


Clay Carney
(503) 833-2740

Washington St & 7th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	9	0	0	16	12	2	0	0	44	6	0	0	39	13	0	148	2	0	1	0
4:05 PM	12	21	1	0	34	18	0	0	0	34	3	0	0	25	17	0	165	2	2	0	0
4:10 PM	11	18	0	0	16	21	3	0	0	33	10	0	0	30	23	0	165	0	0	1	2
4:15 PM	7	7	4	0	18	20	1	0	0	52	9	0	0	39	16	0	173	0	0	0	1
4:20 PM	7	13	2	0	26	16	3	0	0	39	5	0	0	33	22	0	166	0	1	0	0
4:25 PM	7	14	2	0	29	13	1	0	0	26	13	0	0	22	19	0	146	0	0	0	0
4:30 PM	5	16	1	0	22	14	4	0	0	43	10	0	0	14	34	0	163	2	2	0	0
4:35 PM	7	14	0	0	28	23	4	0	0	40	5	0	0	30	32	0	183	0	0	0	2
4:40 PM	8	14	2	0	24	27	1	0	0	49	2	0	0	25	20	0	172	0	2	0	0
4:45 PM	5	14	0	0	33	22	2	0	0	40	12	0	0	24	18	0	170	0	1	0	0
4:50 PM	11	12	1	0	25	21	4	0	0	37	12	0	0	22	21	0	166	3	2	1	0
4:55 PM	6	14	2	0	20	17	2	0	0	29	13	0	0	23	18	0	144	3	1	1	1
5:00 PM	2	10	1	0	23	30	1	0	0	44	11	0	0	23	18	0	163	0	2	0	1
5:05 PM	7	19	1	1	10	18	0	0	0	40	13	0	0	36	25	0	169	0	1	1	0
5:10 PM	5	28	2	0	22	18	0	0	0	35	6	0	0	28	21	0	165	3	2	0	3
5:15 PM	6	12	3	0	26	22	0	0	0	44	9	0	0	22	16	0	160	2	0	0	2
5:20 PM	4	8	2	0	17	12	3	0	0	42	6	0	0	30	18	0	142	0	1	0	0
5:25 PM	15	16	0	0	29	14	1	0	0	33	8	0	0	25	20	0	161	0	0	0	0
5:30 PM	6	10	0	0	26	19	3	0	0	32	5	0	0	22	24	0	147	0	0	0	0
5:35 PM	5	18	0	0	17	17	4	0	0	44	9	0	0	29	14	0	157	0	1	0	0
5:40 PM	4	7	0	0	16	18	1	0	0	39	5	0	0	34	30	0	154	0	0	1	1
5:45 PM	5	14	2	0	19	18	1	0	0	30	12	0	0	22	17	0	140	0	0	2	0
5:50 PM	4	19	0	0	17	13	3	0	0	32	9	0	0	13	18	0	128	0	2	2	0
5:55 PM	2	6	1	0	24	15	0	0	0	44	3	0	0	26	10	0	131	1	0	0	0
Total Survey	158	333	27	1	537	438	44	0	0	925	196	0	0	636	484	0	3,778	18	20	10	13

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	30	48	1	0	66	51	5	0	0	111	19	0	0	94	53	0	478	4	2	2	2
4:15 PM	21	34	8	0	73	49	5	0	0	117	27	0	0	94	57	0	485	0	1	0	1
4:30 PM	20	44	3	0	74	64	9	0	0	132	17	0	0	69	86	0	518	2	4	0	2
4:45 PM	22	40	3	0	78	60	8	0	0	106	37	0	0	69	57	0	480	6	4	2	1
5:00 PM	14	57	4	1	55	66	1	0	0	119	30	0	0	87	64	0	497	3	5	1	4
5:15 PM	25	36	5	0	72	48	4	0	0	119	23	0	0	77	54	0	463	2	1	0	2
5:30 PM	15	35	0	0	59	54	8	0	0	115	19	0	0	85	68	0	458	0	1	1	1
5:45 PM	11	39	3	0	60	46	4	0	0	106	24	0	0	61	45	0	399	1	2	4	0
Total Survey	158	333	27	1	537	438	44	0	0	925	196	0	0	636	484	0	3,778	18	20	10	13

Peak Hour Summary

4:10 PM to 5:10 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	264	357	621	1	542	431	973	0	587	430	1,017	0	587	762	1,349	0	1,980	8	12	4	7
%HV	1.5%				2.4%				0.7%				1.5%				1.5%				
PHF	0.96				0.83				0.97				0.90				0.94				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	83	165	16	264	274	242	26	542	0	472	115	587	0	321	266	587	1,980
%HV	2.4%	1.2%	0.0%	1.5%	2.2%	2.5%	3.8%	2.4%	0.0%	0.8%	0.0%	0.7%	0.0%	1.2%	1.9%	1.5%	1.5%
PHF	0.83	0.94	0.50	0.96	0.81	0.84	0.72	0.83	0.00	0.89	0.78	0.97	0.00	0.79	0.77	0.90	0.94

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	93	166	15	0	291	224	27	0	0	466	100	0	0	326	253	0	1,961	12	11	4	6
4:15 PM	77	175	18	1	280	239	23	0	0	474	111	0	0	319	264	0	1,980	11	14	3	8
4:30 PM	81	177	15	1	279	238	22	0	0	476	107	0	0	302	261	0	1,958	13	14	3	9
4:45 PM	76	168	12	1	264	228	21	0	0	459	109	0	0	318	243	0	1,898	11	11	4	8
5:00 PM	65	167	12	1	246	214	17	0	0	459	96	0	0	310	231	0	1,817	6	9	6	7

Heavy Vehicle Summary

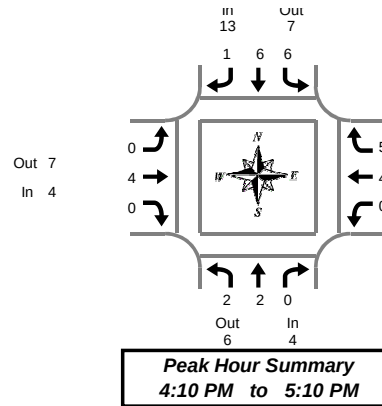


Clay Carney
(503) 833-2740

Washington St & 7th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



Heavy Vehicle 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
4:05 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
4:10 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	2	1	3	5
4:15 PM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	0	0	4
4:20 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2
4:25 PM	1	0	0	1	1	0	0	0	0	1	0	1	0	1	2	3	5
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:35 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
4:40 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	1	1	2	4
4:45 PM	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	4
4:50 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:15 PM	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
5:20 PM	0	1	0	1	1	0	0	1	0	1	0	1	0	1	0	1	4
5:25 PM	0	2	0	2	0	1	0	1	0	1	0	1	0	1	0	1	5
5:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	2	2
5:35 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	1	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	3	7	0	10	13	8	1	22	0	7	0	7	0	6	9	15	54

Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	0	0	1	1	2	0	3	0	1	0	1	0	2	2	4	9
4:15 PM	1	1	0	2	1	2	1	4	0	1	0	1	0	1	3	4	11
4:30 PM	1	0	0	1	1	1	0	2	0	1	0	1	0	1	1	2	6
4:45 PM	0	0	0	0	4	2	0	6	0	0	0	0	0	0	0	0	6
5:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
5:15 PM	0	4	0	4	2	1	0	3	0	3	0	3	0	2	0	2	12
5:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	2	2	4	4
5:45 PM	0	1	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
Total Survey	3	7	0	10	13	8	1	22	0	7	0	7	0	6	9	15	54

Heavy Vehicle Peak Hour Summary 4:10 PM to 5:10 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 7th St			Westbound 7th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	4	6	10	13	7	20	4	7	11	9	10	19	30
PHF	0.50			0.46			1.00			0.56			0.68

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	2	0	4	6	6	1	13	0	4	0	4	0	4	5	9	30
PHF	0.25	0.50	0.00	0.50	0.38	0.50	0.25	0.46	0.00	1.00	0.00	1.00	0.00	0.50	0.42	0.56	0.68

Heavy Vehicle Rolling Hour Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 7th St				Westbound 7th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	1	0	4	7	7	1	15	0	3	0	3	0	4	6	10	32
4:15 PM	2	2	0	4	6	5	1	12	0	3	0	3	0	2	5	7	26
4:30 PM	1	5	0	6	7	4	0	11	0	5	0	5	0	3	2	5	27
4:45 PM	0	5	0	5	8	3	0	11	0	4	0	4	0	2	3	5	25
5:00 PM	0	6	0	6	6	1	0	7	0	4	0	4	0	2	3	5	22

Peak Hour Summary

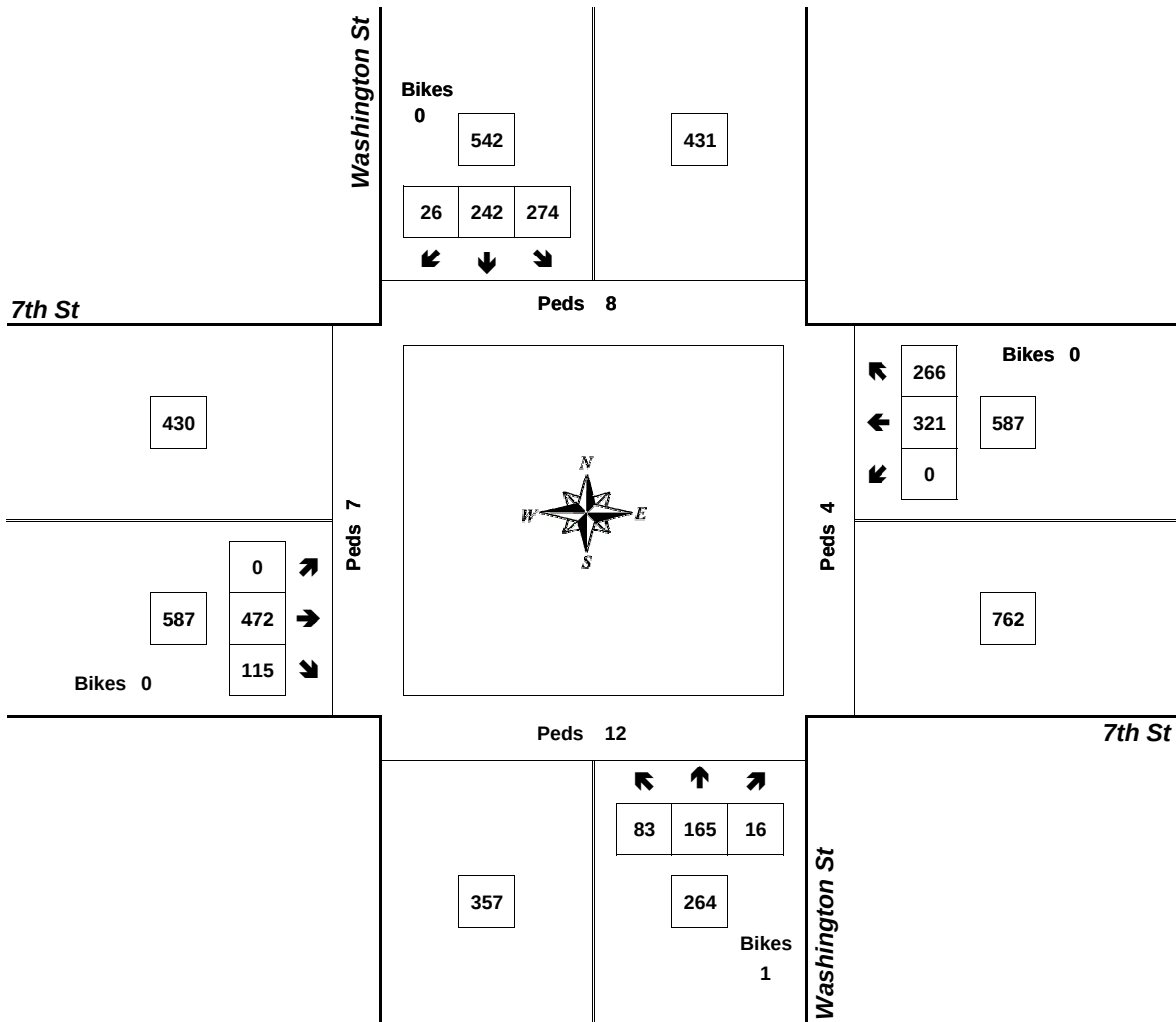


Clay Carney
(503) 833-2740

Washington St & 7th St

4:10 PM to 5:10 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.97	0.7%	587
WB	0.90	1.5%	587
NB	0.96	1.5%	264
SB	0.83	2.4%	542
Intersection	0.94	1.5%	1,980

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

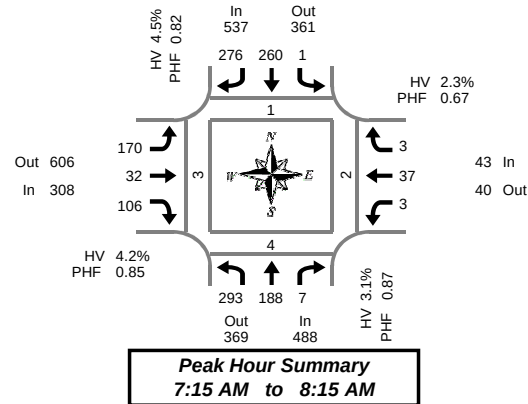


Clay Carney
(503) 833-2740

Washington St & 14th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	23	6	0	0	0	12	25	0	12	4	9	0	0	5	0	0	96	0	0	0	0
7:05 AM	20	7	0	0	0	8	15	0	10	0	6	0	0	1	0	0	67	0	0	0	0
7:10 AM	16	21	1	1	1	8	25	0	16	1	6	0	0	3	0	0	98	0	0	1	0
7:15 AM	28	11	0	0	0	14	28	1	15	1	4	0	0	5	0	0	106	1	0	1	0
7:20 AM	24	15	0	0	0	17	20	0	17	3	7	0	0	5	1	0	109	0	0	0	0
7:25 AM	35	18	0	0	0	12	25	0	15	3	9	0	0	2	0	0	119	0	0	0	0
7:30 AM	27	5	0	0	0	29	26	0	9	4	10	0	1	6	1	0	118	0	0	0	0
7:35 AM	27	19	0	0	0	15	28	0	14	0	9	0	0	2	0	0	114	0	1	0	0
7:40 AM	25	14	0	0	1	31	27	0	5	5	5	0	1	4	0	0	118	0	2	0	1
7:45 AM	20	14	2	0	0	32	24	0	18	2	11	0	0	3	0	0	126	0	0	0	0
7:50 AM	21	32	1	0	0	25	24	0	9	1	12	0	1	4	0	0	130	0	0	1	1
7:55 AM	25	24	2	0	0	23	21	0	19	5	14	0	0	1	0	0	134	0	0	0	0
8:00 AM	20	8	0	0	0	20	17	0	16	2	10	0	0	3	0	0	96	0	0	0	0
8:05 AM	22	15	0	0	0	20	21	0	11	4	7	0	0	1	1	0	102	0	1	0	1
8:10 AM	19	13	2	0	0	22	15	0	22	2	8	0	0	1	0	0	104	0	0	0	0
8:15 AM	20	11	1	0	0	20	18	0	21	1	11	0	0	1	0	0	104	0	0	0	0
8:20 AM	15	10	2	0	0	19	20	0	19	2	8	0	0	1	1	0	97	0	1	0	0
8:25 AM	18	18	0	0	0	18	18	0	15	3	9	0	0	0	0	0	99	0	0	0	0
8:30 AM	22	17	0	0	0	8	11	0	23	2	11	0	0	0	0	0	94	0	0	0	0
8:35 AM	13	9	0	0	0	24	16	0	14	3	7	0	1	3	1	0	91	0	0	0	0
8:40 AM	10	10	0	0	0	20	20	0	12	4	8	0	1	1	0	0	86	0	0	0	0
8:45 AM	15	22	2	0	0	20	17	0	24	4	8	0	1	1	1	0	115	0	0	0	0
8:50 AM	17	14	3	0	0	22	11	0	20	4	8	0	0	0	0	0	99	0	1	1	1
8:55 AM	16	11	4	0	0	20	14	0	18	4	9	0	1	3	0	0	100	0	0	1	0
Total Survey	498	344	20	1	2	459	486	1	374	64	206	0	7	56	6	0	2,522	1	6	5	4

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	59	34	1	1	1	28	65	0	38	5	21	0	0	9	0	0	261	0	0	1	0
7:15 AM	87	44	0	0	0	43	73	1	47	7	20	0	0	12	1	0	334	1	0	1	0
7:30 AM	79	38	0	0	1	75	81	0	28	9	24	0	2	12	1	0	350	0	3	0	1
7:45 AM	66	70	5	0	0	80	69	0	46	8	37	0	1	8	0	0	390	0	0	1	1
8:00 AM	61	36	2	0	0	62	53	0	49	8	25	0	0	5	1	0	302	0	1	0	1
8:15 AM	53	39	3	0	0	57	56	0	55	6	28	0	0	2	1	0	300	0	1	0	0
8:30 AM	45	36	0	0	0	52	47	0	49	9	26	0	2	4	1	0	271	0	0	0	0
8:45 AM	48	47	9	0	0	62	42	0	62	12	25	0	2	4	1	0	314	0	1	2	1
Total Survey	498	344	20	1	2	459	486	1	374	64	206	0	7	56	6	0	2,522	1	6	5	4

Peak Hour Summary

7:15 AM to 8:15 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	488	369	857	0	537	361	898	1	308	606	914	0	43	40	83	0	1,376	1	4	2	3
%HV	3.1%				4.5%				4.2%				2.3%				3.9%				
PHF	0.87				0.82				0.85				0.67				0.88				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	293	188	7	488	1	260	276	537	170	32	106	308	3	37	3	43	1,376
%HV	2.7%	3.7%	0.0%	3.1%	0.0%	5.4%	3.6%	4.5%	4.7%	3.1%	3.8%	4.2%	0.0%	2.7%	0.0%	2.3%	3.9%
PHF	0.82	0.67	0.35	0.87	0.25	0.74	0.85	0.82	0.87	0.73	0.72	0.85	0.38	0.71	0.38	0.67	0.88

Rolling Hour Summary

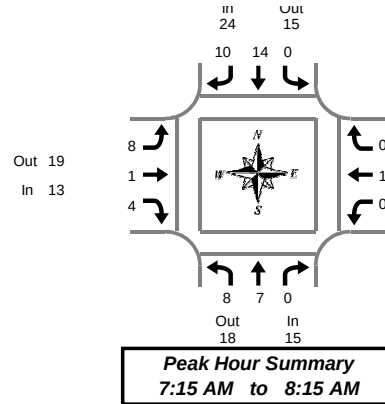
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	291	186	6	1	2	226	288	1	159	29	102	0	3	41	2	0	1,335	1	3	3	2
7:15 AM	293	188	7	0	1	260	276	1	170	32	106	0	3	37	3	0	1,376	1	4	2	3
7:30 AM	259	183	10	0	1	274	259	0	178	31	114	0	3	27	3	0	1,342	0	5	1	3
7:45 AM	225	181	10	0	0	251	225	0	199	31	116	0	3	19	3	0	1,263	0	2	1	2
8:00 AM	207	158	14	0	0	233	198	0	215	35	104	0	4	15	4	0	1,187	0	3	2	2

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & 14th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2
7:05 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
7:10 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
7:20 AM	1	0	0	1	0	1	1	2	2	0	0	2	0	0	0	0	5
7:25 AM	2	0	0	2	0	1	0	1	1	0	2	3	0	0	0	0	6
7:30 AM	2	1	0	3	0	1	1	2	2	0	0	2	0	0	0	0	7
7:35 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
7:40 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
7:45 AM	1	1	0	2	0	2	1	3	1	0	0	1	0	0	0	0	6
7:50 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
7:55 AM	0	1	0	1	1	0	2	3	0	0	0	0	0	0	0	0	4
8:00 AM	1	0	0	1	0	3	1	4	1	0	0	1	0	0	0	0	6
8:05 AM	1	1	0	2	0	3	0	3	0	1	0	1	0	0	0	0	6
8:10 AM	0	3	0	3	0	2	0	2	1	0	1	2	0	0	0	0	7
8:15 AM	0	0	0	0	0	3	2	5	1	0	1	2	0	0	0	0	7
8:20 AM	0	0	0	0	0	1	0	1	3	0	2	5	0	0	0	0	6
8:25 AM	0	3	0	3	0	2	1	3	1	0	1	2	0	0	0	0	8
8:30 AM	1	3	0	4	0	0	0	0	2	0	2	4	0	0	0	0	8
8:35 AM	1	0	0	1	0	2	2	4	0	0	0	0	0	0	0	0	5
8:40 AM	0	1	0	1	0	3	0	3	0	1	0	1	0	0	0	0	5
8:45 AM	1	2	1	4	0	2	0	2	2	0	0	2	1	0	0	1	9
8:50 AM	3	3	0	6	0	0	1	1	0	0	0	0	0	0	0	0	7
8:55 AM	0	0	0	0	0	3	1	4	2	0	0	2	0	0	0	0	6
Total Survey	14	19	1	34	0	31	17	48	21	2	11	34	1	1	0	2	118

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	1	0	1	2	0	1	3	0	0	0	0	4
7:15 AM	3	0	0	3	0	2	2	4	3	0	2	5	0	0	0	0	12
7:30 AM	2	1	0	3	0	1	4	5	2	0	0	2	0	1	0	1	11
7:45 AM	1	2	0	3	0	3	3	6	1	0	1	2	0	0	0	0	11
8:00 AM	2	4	0	6	0	8	1	9	2	1	1	4	0	0	0	0	19
8:15 AM	0	3	0	3	0	6	3	9	5	0	4	9	0	0	0	0	21
8:30 AM	2	4	0	6	0	5	2	7	2	1	2	5	0	0	0	0	18
8:45 AM	4	5	1	10	0	5	2	7	4	0	0	4	1	0	0	1	22
Total Survey	14	19	1	34	0	31	17	48	21	2	11	34	1	1	0	2	118

Heavy Vehicle Peak Hour Summary

7:15 AM to 8:15 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	15	18	33	24	15	39	13	19	32	1	1	2	53
PHF	0.63			0.60			0.46			0.25			0.70

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	8	7	0	15	0	14	10	24	8	1	4	13	0	1	0	1	53
PHF	0.40	0.44	0.00	0.63	0.00	0.44	0.63	0.60	0.40	0.25	0.50	0.46	0.00	0.25	0.00	0.25	0.70

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	6	3	0	9	0	7	9	16	8	0	4	12	0	1	0	1	38
7:15 AM	8	7	0	15	0	14	10	24	8	1	4	13	0	1	0	1	53
7:30 AM	5	10	0	15	0	18	11	29	10	1	6	17	0	1	0	1	62
7:45 AM	5	13	0	18	0	22	9	31	10	2	8	20	0	0	0	0	69
8:00 AM	8	16	1	25	0	24	8	32	13	2	7	22	1	0	0	1	80

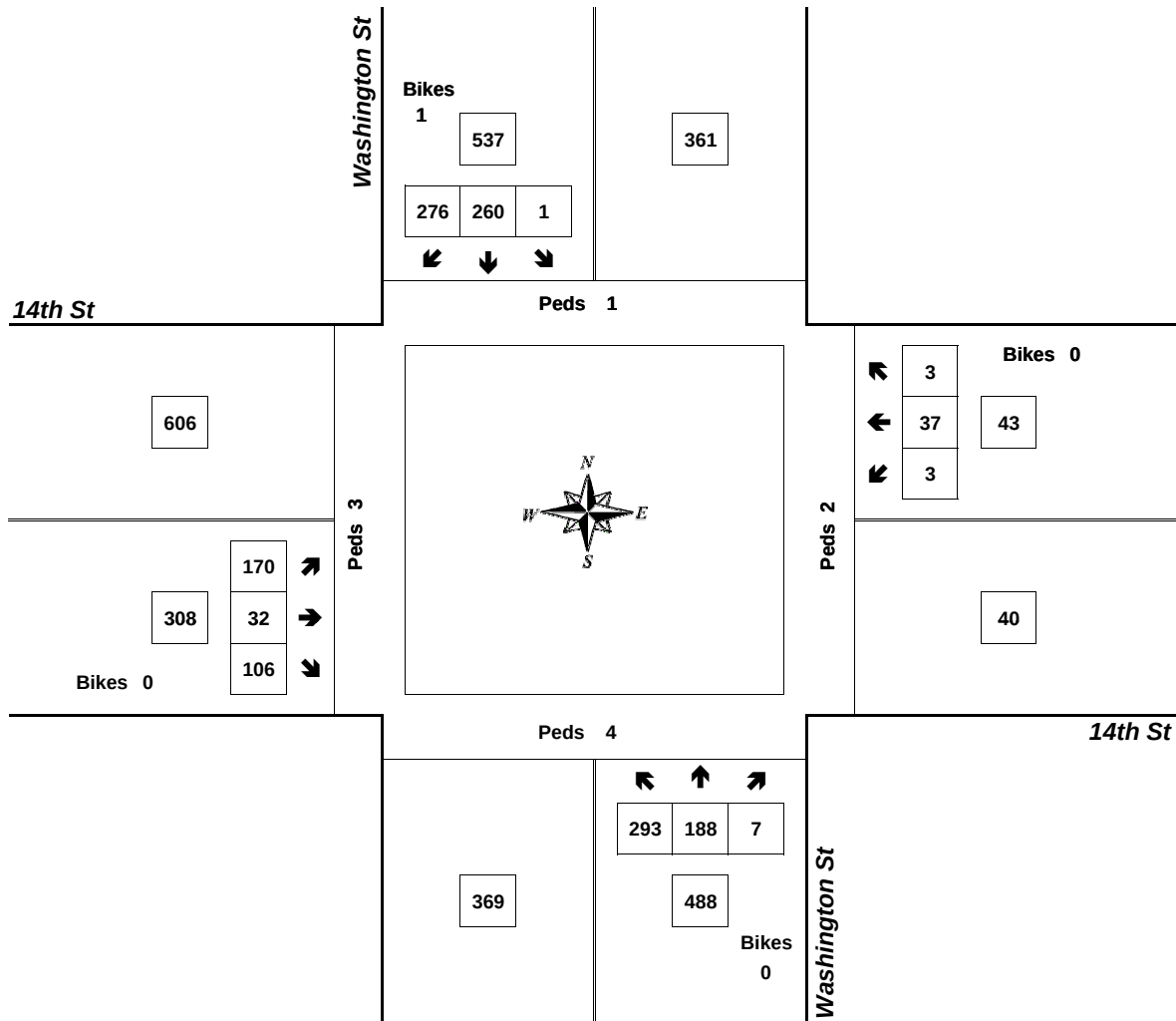
Peak Hour Summary



Clay Carney
(503) 833-2740

Washington St & 14th St

7:15 AM to 8:15 AM
Thursday, January 26, 2017



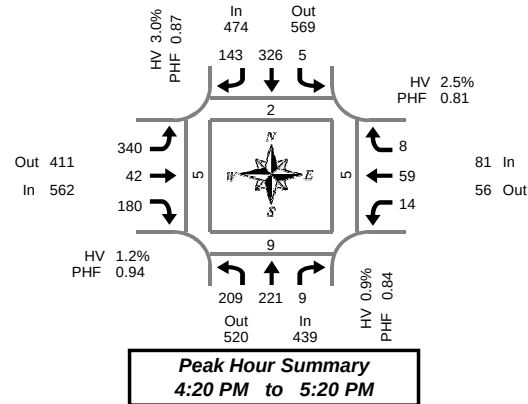
Approach	PHF	HV%	Volume
EB	0.85	4.2%	308
WB	0.67	2.3%	43
NB	0.87	3.1%	488
SB	0.82	4.5%	537
Intersection	0.88	3.9%	1,376

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & 14th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	11	18	0	0	1	22	13	0	19	2	19	0	0	3	1	0	109	0	0	0	0
4:05 PM	19	18	2	0	0	31	12	0	35	5	14	0	0	4	2	0	142	0	0	0	0
4:10 PM	24	14	0	0	0	30	10	0	19	5	19	0	0	1	0	0	122	0	0	0	1
4:15 PM	19	19	0	0	0	26	13	0	19	5	11	0	0	3	1	0	116	0	0	0	0
4:20 PM	11	19	0	0	2	23	6	0	33	6	16	0	3	2	3	0	124	0	0	0	1
4:25 PM	13	18	2	0	0	29	6	0	29	1	15	0	0	2	0	0	115	0	0	0	0
4:30 PM	26	17	4	0	0	18	16	0	31	3	16	0	2	3	1	0	137	2	1	1	0
4:35 PM	17	21	0	0	0	34	10	0	28	5	15	0	1	6	2	0	139	0	1	3	0
4:40 PM	24	22	0	0	1	38	13	0	27	1	14	0	2	3	0	0	145	0	0	0	0
4:45 PM	13	22	1	0	1	26	13	0	30	4	19	0	0	7	0	0	136	0	2	0	0
4:50 PM	12	17	0	0	0	31	6	0	33	6	12	0	1	4	0	0	122	0	2	0	0
4:55 PM	18	18	1	0	1	27	21	0	21	3	14	0	2	3	0	0	129	0	0	1	0
5:00 PM	18	13	0	0	0	31	8	0	28	2	13	0	2	6	1	0	122	0	0	0	0
5:05 PM	22	13	1	0	0	22	11	0	30	4	8	0	0	6	0	0	117	0	1	0	0
5:10 PM	20	17	0	0	0	20	18	0	33	4	17	0	0	6	1	0	136	0	1	0	3
5:15 PM	15	24	0	0	0	27	15	0	17	3	21	0	1	11	0	0	134	0	1	0	1
5:20 PM	21	8	0	0	0	23	11	0	31	4	11	0	0	4	1	0	114	0	0	0	0
5:25 PM	17	17	0	0	0	30	7	0	19	1	15	0	0	3	0	0	109	0	0	0	0
5:30 PM	9	17	0	0	1	30	13	0	28	3	20	0	1	6	2	0	130	0	0	0	0
5:35 PM	14	16	0	0	0	22	13	0	31	4	21	0	0	2	0	0	123	0	3	0	1
5:40 PM	19	11	0	0	0	22	8	0	23	3	13	0	3	2	1	0	105	0	0	0	0
5:45 PM	18	14	1	0	2	18	12	0	32	1	15	0	0	2	1	0	116	0	1	0	0
5:50 PM	10	15	2	0	0	23	12	0	37	1	18	0	0	4	0	0	122	0	1	0	0
5:55 PM	13	20	1	0	0	27	14	0	21	2	11	0	0	2	0	0	111	0	0	0	2
Total Survey	403	408	15	0	9	630	281	0	654	78	367	0	18	95	17	0	2,975	2	14	5	9

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	54	50	2	0	1	83	35	0	73	12	52	0	0	8	3	0	373	0	0	0	1
4:15 PM	43	56	2	0	2	78	25	0	81	12	42	0	3	7	4	0	355	0	0	0	1
4:30 PM	67	60	4	0	1	90	39	0	86	9	45	0	5	12	3	0	421	2	2	4	0
4:45 PM	43	57	2	0	2	84	40	0	84	13	45	0	3	14	0	0	387	0	4	1	0
5:00 PM	60	43	1	0	0	73	37	0	91	10	38	0	2	18	2	0	375	0	2	0	3
5:15 PM	53	49	0	0	0	80	33	0	67	8	47	0	1	18	1	0	357	0	1	0	1
5:30 PM	42	44	0	0	1	74	34	0	82	10	54	0	4	10	3	0	358	0	3	0	1
5:45 PM	41	49	4	0	2	68	38	0	90	4	44	0	0	8	1	0	349	0	2	0	2
Total Survey	403	408	15	0	9	630	281	0	654	78	367	0	18	95	17	0	2,975	2	14	5	9

Peak Hour Summary

4:20 PM to 5:20 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	439	520	959	0	474	569	1,043	0	562	411	973	0	81	56	137	0	1,556	2	9	5	5
%HV	0.9%				3.0%				1.2%				2.5%				1.7%				
PHF	0.84				0.87				0.94				0.81				0.92				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	209	221	9	439	5	326	143	474	340	42	180	562	14	59	8	81	1,556
%HV	1.0%	0.9%	0.0%	0.9%	0.0%	3.1%	2.8%	3.0%	1.8%	2.4%	0.0%	1.2%	7.1%	1.7%	0.0%	2.5%	1.7%
PHF	0.78	0.85	0.38	0.84	0.63	0.83	0.81	0.87	0.91	0.81	0.94	0.94	0.70	0.64	0.50	0.81	0.92

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	207	223	10	0	6	335	139	0	324	46	184	0	11	41	10	0	1,536	2	6	5	2
4:15 PM	213	216	9	0	5	325	141	0	342	44	170	0	13	51	9	0	1,538	2	8	5	4
4:30 PM	223	209	7	0	3	327	149	0	328	40	175	0	11	62	6	0	1,540	2	9	5	4
4:45 PM	198	193	3	0	3	311	144	0	324	41	184	0	10	60	6	0	1,477	0	10	1	5
5:00 PM	196	185	5	0	3	295	142	0	330	32	183	0	7	54	7	0	1,439	0	8	0	7

Heavy Vehicle Summary

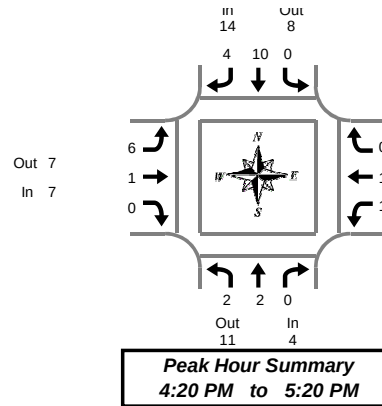


Clay Carney
(503) 833-2740

Washington St & 14th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	0	2	2	1	0	0	1	0	0	0	0	3
4:05 PM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
4:10 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2
4:20 PM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1	3
4:25 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	1	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	3
4:35 PM	0	0	0	0	0	2	1	3	2	0	0	2	0	1	0	1	6
4:40 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	0	5
4:50 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
5:10 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
5:20 PM	2	0	0	2	0	1	1	2	0	0	0	0	0	0	0	0	4
5:25 PM	1	2	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
5:30 PM	0	1	0	1	0	2	0	2	1	0	0	1	0	0	0	0	4
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
5:50 PM	1	0	0	1	0	2	0	2	1	0	0	1	0	0	0	0	4
5:55 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total Survey	6	5	0	11	0	18	10	28	11	1	2	14	1	1	0	2	55

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	3	4	7	1	0	0	1	0	0	0	0	8
4:15 PM	1	0	0	1	0	0	0	0	2	1	1	4	1	0	0	1	6
4:30 PM	1	1	0	2	0	3	2	5	3	0	0	3	0	1	0	1	11
4:45 PM	0	1	0	1	0	5	1	6	1	0	0	1	0	0	0	0	8
5:00 PM	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
5:15 PM	3	2	0	5	0	3	1	4	0	0	1	1	0	0	0	0	10
5:30 PM	0	1	0	1	0	2	0	2	1	0	0	1	0	0	0	0	4
5:45 PM	1	0	0	1	0	2	1	3	2	0	0	2	0	0	0	0	6
Total Survey	6	5	0	11	0	18	10	28	11	1	2	14	1	1	0	2	55

Heavy Vehicle Peak Hour Summary

4:20 PM to 5:20 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	4	11	15	14	8	22	7	7	14	2	1	3	27
PHF	0.50			0.39			0.58			0.50			0.52

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	2	0	4	0	10	4	14	6	1	0	7	1	1	0	2	27
PHF	0.25	0.25	0.00	0.50	0.00	0.36	0.50	0.39	0.50	0.25	0.00	0.58	0.25	0.25	0.00	0.50	0.52

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	2	2	0	4	0	11	7	18	7	1	1	9	1	1	0	2	33
4:15 PM	2	2	0	4	0	8	4	12	7	1	1	9	1	1	0	2	27
4:30 PM	4	4	0	8	0	11	5	16	5	0	1	6	0	1	0	1	31
4:45 PM	3	4	0	7	0	10	3	13	3	0	1	4	0	0	0	0	24
5:00 PM	4	3	0	7	0	7	3	10	4	0	1	5	0	0	0	0	22

Peak Hour Summary

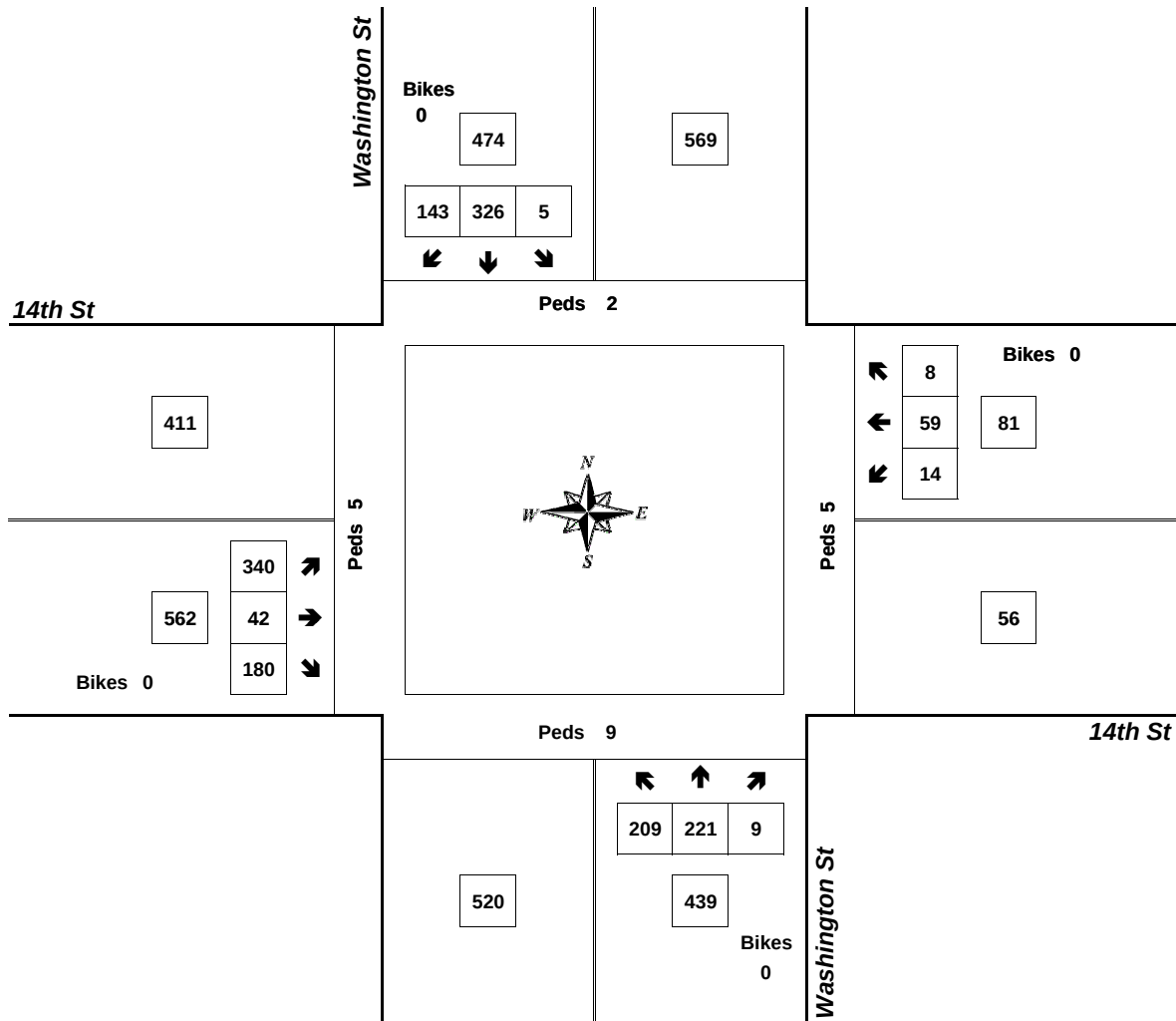


Clay Carney
(503) 833-2740

Washington St & 14th St

4:20 PM to 5:20 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.94	1.2%	562
WB	0.81	2.5%	81
NB	0.84	0.9%	439
SB	0.87	3.0%	474
Intersection	0.92	1.7%	1,556

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

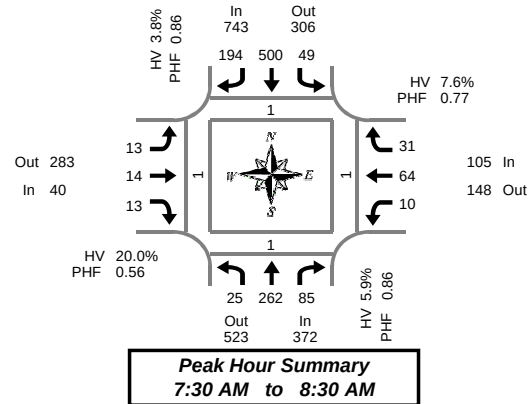


Clay Carney
(503) 833-2740

Washington St & 15th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	15	4	0	2	24	11	0	1	0	0	0	0	5	1	0	64	0	0	0	0
7:05 AM	5	15	2	0	4	28	18	0	0	0	0	0	0	6	0	0	78	0	0	1	1
7:10 AM	7	23	6	1	2	38	18	0	2	1	0	0	2	6	1	0	106	1	0	0	0
7:15 AM	4	22	4	0	2	39	9	0	1	1	1	1	1	6	0	0	90	0	0	0	0
7:20 AM	5	25	2	0	2	31	19	0	0	0	0	0	1	5	2	0	92	0	0	0	0
7:25 AM	4	20	3	0	1	43	7	0	1	2	3	0	3	11	0	0	98	0	0	0	0
7:30 AM	1	17	1	0	2	52	10	0	1	1	0	0	0	6	2	1	93	1	0	0	0
7:35 AM	2	17	8	0	6	42	15	0	1	1	1	0	1	7	2	0	103	0	1	0	1
7:40 AM	2	20	9	0	2	64	14	0	0	0	1	0	0	3	3	0	118	0	0	0	0
7:45 AM	1	19	6	0	3	50	19	0	2	2	1	0	0	2	7	0	112	0	0	0	0
7:50 AM	3	32	3	0	5	42	17	0	0	1	1	0	0	8	3	0	115	0	0	1	0
7:55 AM	2	32	10	0	6	43	20	0	1	2	2	0	3	4	3	0	128	0	0	0	0
8:00 AM	1	15	9	0	8	38	20	0	1	0	0	0	2	4	0	0	98	0	0	0	0
8:05 AM	4	22	5	0	5	33	8	0	0	0	1	0	2	7	4	0	91	0	0	0	0
8:10 AM	1	24	11	0	2	29	16	0	2	0	2	0	0	5	5	0	97	0	0	0	0
8:15 AM	1	22	9	0	2	42	16	0	1	2	2	0	1	9	1	0	108	0	0	0	0
8:20 AM	3	17	6	0	5	32	17	0	3	4	2	0	1	5	1	0	96	0	0	0	0
8:25 AM	4	25	8	0	3	33	22	0	1	1	0	0	0	4	0	0	101	0	0	0	0
8:30 AM	4	23	7	0	2	24	12	0	2	1	1	0	1	6	0	0	83	0	0	0	0
8:35 AM	1	19	6	0	4	34	17	0	0	2	1	0	2	5	3	0	94	0	0	0	0
8:40 AM	4	21	6	0	3	35	21	0	8	3	0	0	2	7	0	0	110	0	1	1	0
8:45 AM	2	27	13	0	5	37	19	0	1	3	2	0	1	4	1	0	115	2	0	0	0
8:50 AM	4	22	6	0	3	31	9	0	1	1	1	0	3	5	1	0	87	0	0	0	0
8:55 AM	2	20	8	0	5	34	19	0	1	2	0	0	1	9	1	0	102	2	0	1	0
Total Survey	68	514	152	1	84	898	373	0	31	30	22	1	27	139	41	1	2,379	6	2	4	2

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	13	53	12	1	8	90	47	0	3	1	0	0	2	17	2	0	248	1	0	1	1
7:15 AM	13	67	9	0	5	113	35	0	2	3	4	1	5	22	2	0	280	0	0	0	0
7:30 AM	5	54	18	0	10	158	39	0	2	2	2	0	1	16	7	1	314	1	1	0	1
7:45 AM	6	83	19	0	14	135	56	0	3	5	4	0	3	14	13	0	355	0	0	1	0
8:00 AM	6	61	25	0	15	100	44	0	3	0	3	0	4	16	9	0	286	0	0	0	0
8:15 AM	8	64	23	0	10	107	55	0	5	7	4	0	2	18	2	0	305	0	0	0	0
8:30 AM	9	63	19	0	9	93	50	0	10	6	2	0	5	18	3	0	287	0	1	1	0
8:45 AM	8	69	27	0	13	102	47	0	3	6	3	0	5	18	3	0	304	4	0	1	0
Total Survey	68	514	152	1	84	898	373	0	31	30	22	1	27	139	41	1	2,379	6	2	4	2

Peak Hour Summary

7:30 AM to 8:30 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	372	523	895	0	743	306	1,049	0	40	283	323	0	105	148	253	1	1,260	1	1	1	1
%HV	5.9%				3.8%				20.0%				7.6%				5.2%				
PHF	0.86				0.86				0.56				0.77				0.89				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total				
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total					
Volume	25	262	85	372	49	500	194	743	13	14	13	40	10	64	31	105	1,260				
%HV	0.0%	7.3%	3.5%	5.9%	4.1%	4.0%	3.1%	3.8%	7.7%	7.1%	46.2%	20.0%	10.0%	3.1%	16.1%	7.6%	5.2%				
PHF	0.78	0.79	0.82	0.86	0.64	0.79	0.85	0.86	0.54	0.50	0.54	0.56	0.36	0.76	0.60	0.77	0.89				

Rolling Hour Summary

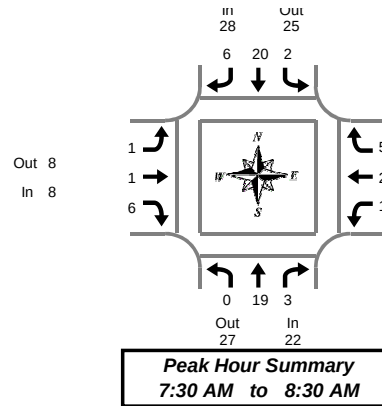
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	37	257	58	1	37	496	177	0	10	11	10	1	11	69	24	1	1,197	2	1	2	2
7:15 AM	30	265	71	0	44	506	174	0	10	10	13	1	13	68	31	1	1,235	1	1	1	1
7:30 AM	25	262	85	0	49	500	194	0	13	14	13	0	10	64	31	1	1,260	1	1	1	1
7:45 AM	29	271	86	0	48	435	205	0	21	18	13	0	14	66	27	0	1,233	0	1	2	0
8:00 AM	31	257	94	0	47	402	196	0	21	19	12	0	16	70	17	0	1,182	4	1	2	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & 15th St

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
7:05 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
7:10 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
7:20 AM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	1	1	4
7:25 AM	0	2	0	2	0	0	1	1	0	2	2	0	0	0	0	0	5
7:30 AM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	1	1	4
7:35 AM	0	2	0	2	0	1	2	3	0	0	1	1	0	0	0	0	6
7:40 AM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
7:45 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	3
7:50 AM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	1	1	3
7:55 AM	0	1	0	1	1	0	3	1	4	0	0	1	1	0	0	0	6
8:00 AM	0	1	0	1	1	4	0	5	0	0	0	0	0	0	0	0	6
8:05 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	2	3
8:10 AM	0	3	1	4	0	3	1	4	0	0	1	1	0	0	0	0	9
8:15 AM	0	0	0	0	0	3	0	3	1	0	1	2	0	1	0	1	6
8:20 AM	0	2	1	3	0	0	2	2	0	1	1	2	0	1	1	2	9
8:25 AM	0	5	1	6	0	1	0	1	0	0	0	0	0	0	0	0	7
8:30 AM	0	2	0	2	0	1	1	2	1	1	1	3	0	0	0	0	7
8:35 AM	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	0	5
8:40 AM	1	1	0	2	0	1	1	2	0	0	0	0	0	1	0	1	5
8:45 AM	0	2	1	3	0	3	0	3	0	0	0	0	0	0	0	0	6
8:50 AM	1	2	0	3	0	1	1	2	0	0	1	1	0	0	0	0	6
8:55 AM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
Total Survey	2	34	4	40	3	35	12	50	2	2	10	14	1	4	6	11	115

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	2	0	2	1	1	1	3	0	0	0	0	0	0	0	0	5
7:15 AM	0	4	0	4	0	2	1	3	0	0	2	2	0	1	1	2	11
7:30 AM	0	5	0	5	0	5	2	7	0	0	1	1	0	0	1	1	14
7:45 AM	0	2	0	2	1	4	1	6	0	0	2	2	0	0	2	2	12
8:00 AM	0	5	1	6	1	7	1	9	0	0	1	1	1	0	1	2	18
8:15 AM	0	7	2	9	0	4	2	6	1	1	2	4	0	2	1	3	22
8:30 AM	1	3	0	4	0	6	3	9	1	1	1	3	0	1	0	1	17
8:45 AM	1	6	1	8	0	6	1	7	0	0	1	1	0	0	0	0	16
Total Survey	2	34	4	40	3	35	12	50	2	2	10	14	1	4	6	11	115

Heavy Vehicle Peak Hour Summary

7:30 AM to 8:30 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 15th St			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	22	27	49	28	25	53	8	8	16	8	6	14	66
PHF	0.61			0.70			0.40			0.67			0.69

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	19	3	22	2	20	6	28	1	1	6	8	1	2	5	8	66
PHF	0.00	0.68	0.38	0.61	0.25	0.71	0.50	0.70	0.25	0.25	0.50	0.40	0.25	0.25	0.63	0.67	0.69

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	13	0	13	2	12	5	19	0	0	5	5	0	1	4	5	42
7:15 AM	0	16	1	17	2	18	5	25	0	0	6	6	1	1	5	7	55
7:30 AM	0	19	3	22	2	20	6	28	1	1	6	8	1	2	5	8	66
7:45 AM	1	17	3	21	2	21	7	30	2	2	6	10	1	3	4	8	69
8:00 AM	2	21	4	27	1	23	7	31	2	2	5	9	1	3	2	6	73

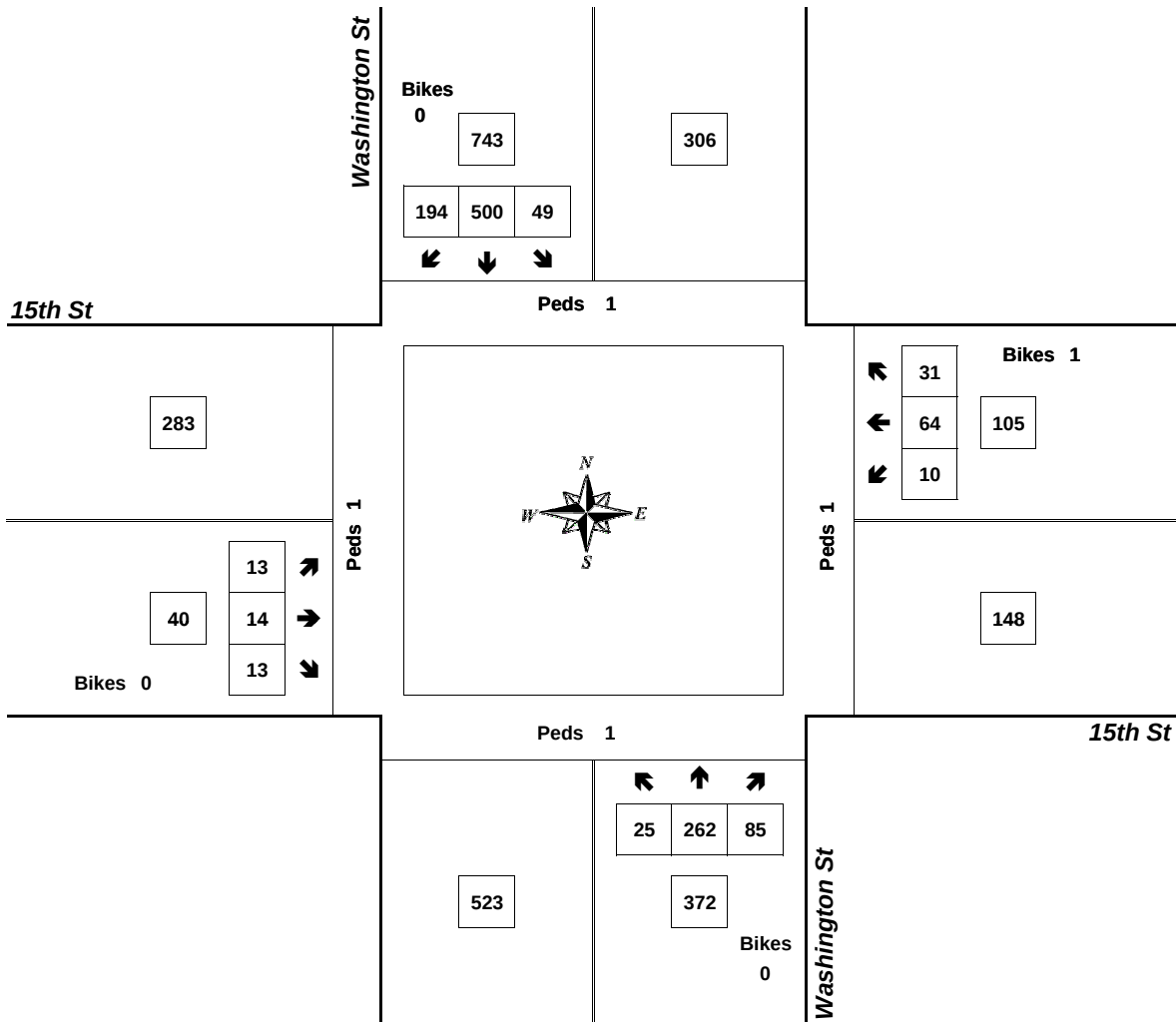
Peak Hour Summary



Clay Carney
(503) 833-2740

Washington St & 15th St

7:30 AM to 8:30 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.56	20.0%	40
WB	0.77	7.6%	105
NB	0.86	5.9%	372
SB	0.86	3.8%	743
Intersection	0.89	5.2%	1,260

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

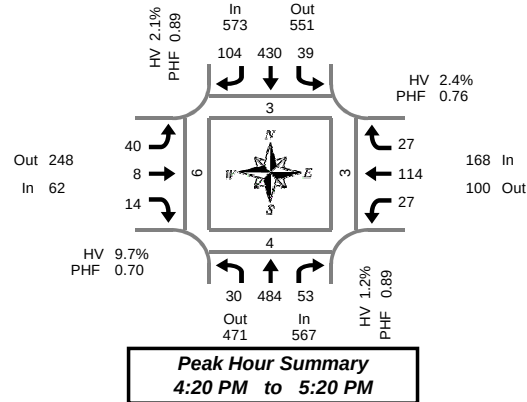


Clay Carney
(503) 833-2740

Washington St & 15th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	32	4	0	3	34	8	0	4	2	5	0	3	8	5	0	111	0	0	1	1
4:05 PM	0	46	1	0	4	29	9	0	2	1	2	0	2	7	2	0	105	0	2	2	0
4:10 PM	2	26	5	0	5	40	4	0	3	3	1	0	1	12	2	0	104	1	0	0	0
4:15 PM	2	39	1	0	4	34	5	0	1	1	3	0	1	7	3	0	101	0	0	0	1
4:20 PM	1	51	5	0	2	23	8	0	6	1	1	0	2	7	1	0	108	0	0	0	0
4:25 PM	0	44	5	0	1	40	10	0	5	0	1	0	2	9	0	0	117	0	1	1	1
4:30 PM	5	43	6	0	6	37	6	0	2	0	1	0	1	8	5	0	120	0	1	0	1
4:35 PM	4	32	7	0	1	42	13	0	8	1	4	0	2	14	0	0	128	1	0	0	0
4:40 PM	6	37	3	0	3	44	8	0	4	1	1	0	1	7	1	0	116	0	0	0	0
4:45 PM	2	48	4	0	3	39	8	0	3	0	0	0	1	10	3	0	121	1	0	0	1
4:50 PM	2	38	1	0	5	35	8	0	2	1	1	0	2	10	0	0	105	0	0	1	0
4:55 PM	1	49	3	0	2	42	7	0	0	1	1	0	2	8	4	0	120	0	0	1	0
5:00 PM	3	36	6	0	3	33	9	0	4	1	0	0	1	12	3	0	111	0	0	0	1
5:05 PM	0	20	7	0	5	25	8	0	2	0	1	0	8	8	6	0	90	0	2	0	0
5:10 PM	1	51	1	0	5	37	10	0	0	0	1	0	2	11	4	0	123	1	0	0	1
5:15 PM	5	35	5	0	3	33	9	0	4	2	2	0	3	10	0	0	111	0	0	0	1
5:20 PM	2	27	1	0	2	29	2	0	2	1	1	0	6	8	5	0	86	0	1	0	0
5:25 PM	0	40	1	0	1	34	8	0	1	2	1	0	3	6	4	0	101	2	0	0	0
5:30 PM	7	36	7	0	1	42	9	0	1	1	1	0	1	9	2	0	117	0	0	0	1
5:35 PM	1	36	3	0	1	33	11	0	1	2	0	0	1	11	1	0	101	0	0	0	0
5:40 PM	0	35	4	0	4	24	11	0	2	1	0	0	2	4	3	0	90	0	0	0	0
5:45 PM	2	41	2	0	2	33	3	0	0	2	1	0	1	8	0	0	95	0	2	2	1
5:50 PM	4	43	5	0	2	39	8	0	4	1	1	0	0	8	2	0	117	0	0	0	0
5:55 PM	2	35	5	0	2	29	4	0	3	2	0	0	0	3	4	0	89	0	1	0	2
Total Survey	55	920	92	0	70	830	186	0	64	27	30	0	48	205	60	0	2,587	6	10	8	12

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	104	10	0	12	103	21	0	9	6	8	0	6	27	9	0	320	1	2	3	1
4:15 PM	3	134	11	0	7	97	23	0	12	2	5	0	5	23	4	0	326	0	1	1	2
4:30 PM	15	112	16	0	10	123	27	0	14	2	6	0	4	29	6	0	364	1	1	0	1
4:45 PM	5	135	8	0	10	116	23	0	5	2	2	0	5	28	7	0	346	1	0	2	1
5:00 PM	4	107	14	0	13	95	27	0	6	1	2	0	11	31	13	0	324	1	2	0	2
5:15 PM	7	102	7	0	6	96	19	0	7	5	4	0	12	24	9	0	298	2	1	0	1
5:30 PM	8	107	14	0	6	99	31	0	4	4	1	0	4	24	6	0	308	0	0	0	1
5:45 PM	8	119	12	0	6	101	15	0	7	5	2	0	1	19	6	0	301	0	3	2	3
Total Survey	55	920	92	0	70	830	186	0	64	27	30	0	48	205	60	0	2,587	6	10	8	12

Peak Hour Summary

4:20 PM to 5:20 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	567	471	1,038	0	573	551	1,124	0	62	248	310	0	168	100	268	0	1,370	3	4	3	6
%HV	1.2%				2.1%				9.7%				2.4%				2.1%				
PHF	0.89				0.89				0.70				0.76				0.94				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	30	484	53	567	39	430	104	573	40	8	14	62	27	114	27	168	1,370
%HV	0.0%	1.0%	3.8%	1.2%	5.1%	2.1%	1.0%	2.1%	2.5%	0.0%	35.7%	9.7%	0.0%	1.8%	7.4%	2.4%	2.1%
PHF	0.50	0.88	0.74	0.89	0.75	0.86	0.90	0.89	0.67	0.67	0.58	0.70	0.52	0.92	0.52	0.76	0.94

Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	28	485	45	0	39	439	94	0	40	12	21	0	20	107	26	0	1,356	3	4	6	5
4:15 PM	27	488	49	0	40	431	100	0	37	7	15	0	25	111	30	0	1,360	3	4	3	6
4:30 PM	31	456	45	0	39	430	96	0	32	10	14	0	32	112	35	0	1,332	5	4	2	5
4:45 PM	24	451	43	0	35	406	100	0	22	12	9	0	32	107	35	0	1,276	4	3	2	5
5:00 PM	27	435	47	0	31	391	92	0	24	15	9	0	28	98	34	0	1,231	3	6	2	7

Heavy Vehicle Summary

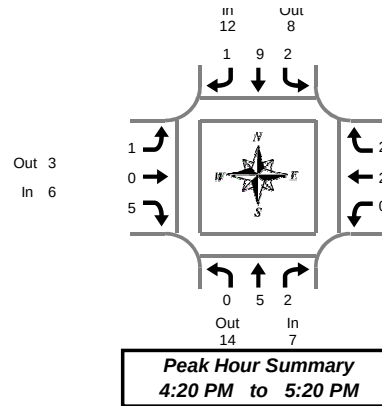


Clay Carney
(503) 833-2740

Washington St & 15th St

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	3	0	3	0	0	1	1	0	0	0	0	5
4:05 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
4:10 PM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:20 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2	3
4:25 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
4:35 PM	0	1	1	2	0	2	1	3	0	0	2	2	0	0	0	0	7
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	5	0	5	1	0	0	1	0	0	0	0	6
4:50 PM	0	1	0	1	2	0	0	2	0	0	1	1	0	0	0	0	4
4:55 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
5:10 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2
5:20 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:25 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	2	0	2	0	1	0	1	0	0	1	1	0	0	0	0	4
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
5:50 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:55 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Survey	0	14	2	16	2	18	2	22	2	0	9	11	0	2	2	4	53

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	6	1	7	1	0	1	2	0	0	0	0	10
4:15 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	1	1	2	5
4:30 PM	0	1	1	2	0	3	1	4	0	0	2	2	0	0	0	0	8
4:45 PM	0	2	0	2	2	5	0	7	1	0	1	2	0	0	1	1	12
5:00 PM	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	3
5:15 PM	0	2	0	2	0	1	0	1	0	0	1	1	0	1	0	1	5
5:30 PM	0	4	0	4	0	1	0	1	0	0	1	1	0	0	0	0	6
5:45 PM	0	1	0	1	0	1	0	1	0	0	2	2	0	0	0	0	4
Total Survey	0	14	2	16	2	18	2	22	2	0	9	11	0	2	2	4	53

Heavy Vehicle Peak Hour Summary

4:20 PM to 5:20 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 15th St			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	7	14	21	12	8	20	6	3	9	4	4	8	29
PHF	0.58			0.38			0.50			0.50			0.56

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	5	2	7	2	9	1	12	1	0	5	6	0	2	2	4	29
PHF	0.00	0.63	0.50	0.58	0.25	0.32	0.25	0.38	0.25	0.00	0.63	0.50	0.00	0.50	0.50	0.50	0.56

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	6	2	8	2	14	2	18	2	0	4	6	0	1	2	3	35
4:15 PM	0	6	2	8	2	9	1	12	1	0	4	5	0	1	2	3	28
4:30 PM	0	6	1	7	2	10	1	13	1	0	5	6	0	1	1	2	28
4:45 PM	0	9	0	9	2	8	0	10	1	0	4	5	0	1	1	2	26
5:00 PM	0	8	0	8	0	4	0	4	0	0	5	5	0	1	0	1	18

Peak Hour Summary

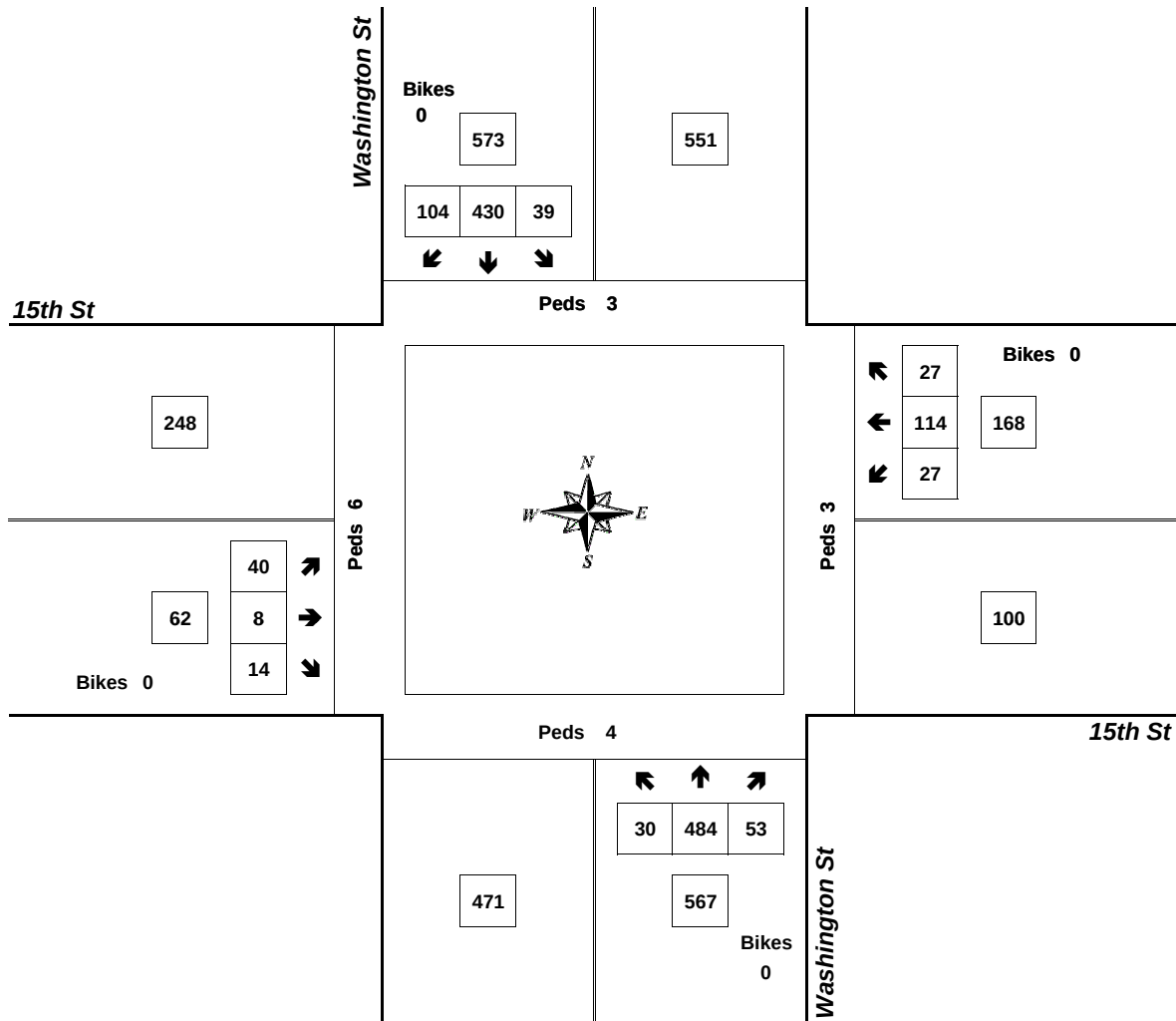


Clay Carney
(503) 833-2740

Washington St & 15th St

4:20 PM to 5:20 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.70	9.7%	62
WB	0.76	2.4%	168
NB	0.89	1.2%	567
SB	0.89	2.1%	573
Intersection	0.94	2.1%	1,370

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

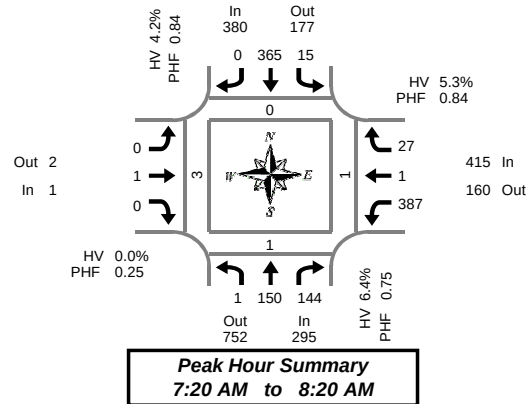


Clay Carney
(503) 833-2740

Washington St & Abernathy Rd

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	9	6	0	0	28	0	0	0	0	0	0	18	0	4	0	65	0	0	0	0
7:05 AM	0	8	6	0	1	19	0	0	0	0	0	0	37	0	4	0	75	0	0	0	0
7:10 AM	0	9	11	1	2	29	0	0	0	0	0	0	30	0	3	1	84	0	0	0	0
7:15 AM	0	9	10	0	1	26	0	0	0	0	0	0	28	0	1	0	75	0	0	0	0
7:20 AM	1	19	7	0	1	26	0	0	0	0	0	0	29	0	1	0	84	0	0	0	0
7:25 AM	0	6	14	0	2	28	0	0	0	0	0	0	30	0	2	0	82	0	0	0	2
7:30 AM	0	8	11	0	1	34	0	0	0	0	0	0	34	0	2	0	90	0	1	0	0
7:35 AM	0	12	9	0	2	26	0	0	0	0	0	0	32	0	0	0	81	0	0	0	0
7:40 AM	0	13	8	0	0	47	0	0	0	0	0	0	34	0	4	0	106	0	0	1	0
7:45 AM	0	16	13	0	2	36	0	0	0	0	0	0	35	0	2	0	104	0	0	0	1
7:50 AM	0	19	16	0	1	24	0	0	0	0	0	0	47	0	1	0	108	0	0	0	0
7:55 AM	0	17	17	0	2	30	0	0	0	0	0	0	33	0	5	0	104	0	0	0	0
8:00 AM	0	8	9	0	3	43	0	0	0	0	0	0	25	0	1	0	89	0	0	0	0
8:05 AM	0	11	13	0	0	23	0	0	0	0	0	0	27	0	2	0	76	0	0	0	0
8:10 AM	0	10	17	0	1	22	0	0	0	1	0	0	22	0	3	0	76	0	0	0	0
8:15 AM	0	11	10	0	0	26	0	0	0	0	0	0	39	1	4	0	91	0	0	0	0
8:20 AM	0	15	10	0	0	31	0	0	0	0	0	0	19	0	4	0	79	0	0	0	0
8:25 AM	0	12	11	0	3	29	0	1	0	0	0	0	25	1	5	0	86	0	1	0	0
8:30 AM	0	10	16	0	1	21	0	0	0	0	0	0	20	0	4	0	72	0	0	0	0
8:35 AM	0	10	11	0	2	33	0	0	0	0	0	0	24	0	2	0	82	0	0	0	0
8:40 AM	2	13	7	0	3	33	0	0	0	0	1	0	35	0	4	0	98	0	0	0	0
8:45 AM	1	20	9	0	0	30	0	0	0	0	0	0	19	0	1	0	80	0	0	0	0
8:50 AM	0	14	9	0	3	16	0	0	0	0	0	0	24	0	3	0	69	0	0	1	0
8:55 AM	0	12	8	0	3	34	0	0	0	0	0	0	23	0	3	0	83	0	0	0	0
Total Survey	4	291	258	1	34	694	0	1	0	1	1	0	689	2	65	1	2,039	0	2	2	3

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	26	23	1	3	76	0	0	0	0	0	0	85	0	11	1	224	0	0	0	0
7:15 AM	1	34	31	0	4	80	0	0	0	0	0	0	87	0	4	0	241	0	0	0	2
7:30 AM	0	33	28	0	3	107	0	0	0	0	0	0	100	0	6	0	277	0	1	1	0
7:45 AM	0	52	46	0	5	90	0	0	0	0	0	0	115	0	8	0	316	0	0	0	1
8:00 AM	0	29	39	0	4	88	0	0	0	1	0	0	74	0	6	0	241	0	0	0	0
8:15 AM	0	38	31	0	3	86	0	1	0	0	0	0	83	2	13	0	256	0	1	0	0
8:30 AM	2	33	34	0	6	87	0	0	0	0	1	0	79	0	10	0	252	0	0	0	0
8:45 AM	1	46	26	0	6	80	0	0	0	0	0	0	66	0	7	0	232	0	0	1	0
Total Survey	4	291	258	1	34	694	0	1	0	1	1	0	689	2	65	1	2,039	0	2	2	3

Peak Hour Summary

7:20 AM to 8:20 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	295	752	1,047	0	380	177	557	0	1	2	3	0	415	160	575	0	1,091	0	1	1	3
%HV	6.4%				4.2%				0.0%				5.3%				5.2%				
PHF	0.75				0.84				0.25				0.84				0.86				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	150	144	295	15	365	0	380	0	1	0	1	387	1	27	415	1,091
%HV	0.0%	6.0%	6.9%	6.4%	26.7%	3.3%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	4.4%	0.0%	18.5%	5.3%	5.2%
PHF	0.25	0.72	0.78	0.75	0.63	0.84	0.00	0.84	0.00	0.25	0.00	0.25	0.83	0.25	0.75	0.84	0.86

Rolling Hour Summary

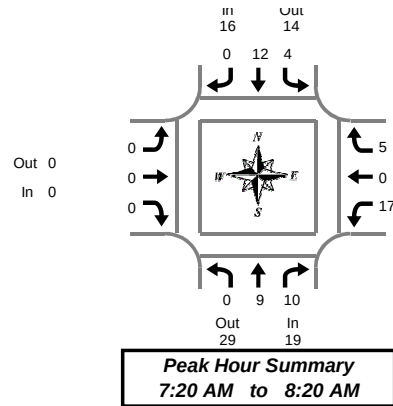
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	145	128	1	15	353	0	0	0	0	0	0	387	0	29	1	1,058	0	1	1	3
7:15 AM	1	148	144	0	16	365	0	0	0	1	0	0	376	0	24	0	1,075	0	1	1	3
7:30 AM	0	152	144	0	15	371	0	1	0	1	0	0	372	2	33	0	1,090	0	2	1	1
7:45 AM	2	152	150	0	18	351	0	1	0	1	1	0	351	2	37	0	1,065	0	1	0	1
8:00 AM	3	146	130	0	19	341	0	1	0	1	1	0	302	2	36	0	981	0	1	1	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & Abernathy Rd

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
7:05 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	3	4
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
7:20 AM	0	2	1	3	1	1	0	2	0	0	0	0	2	0	0	2	7
7:25 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
7:30 AM	0	0	3	3	1	2	0	3	0	0	0	0	0	0	1	1	7
7:35 AM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	0	0	4
7:40 AM	0	0	1	1	0	0	0	0	0	0	0	0	3	0	0	3	4
7:45 AM	0	1	1	2	1	0	0	1	0	0	0	0	1	0	0	1	4
7:50 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
7:55 AM	0	0	0	0	0	1	0	1	0	0	0	0	3	0	0	3	4
8:00 AM	0	1	0	1	0	1	0	1	0	0	0	0	3	0	0	3	5
8:05 AM	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
8:10 AM	0	2	1	3	0	2	0	2	0	0	0	0	3	0	2	5	10
8:15 AM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	1	2	4
8:20 AM	0	0	3	3	0	2	0	2	0	0	0	0	0	0	0	0	5
8:25 AM	0	1	4	5	0	1	0	1	0	0	0	0	0	0	0	0	6
8:30 AM	0	1	2	3	0	2	0	2	0	0	0	0	0	0	0	0	5
8:35 AM	0	0	0	0	0	2	0	2	0	0	0	0	3	0	0	3	5
8:40 AM	0	1	1	2	0	2	0	2	0	0	0	0	1	0	0	1	5
8:45 AM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
8:50 AM	0	2	0	2	0	1	0	1	0	0	0	0	1	0	0	1	4
8:55 AM	0	1	1	2	0	2	0	2	0	0	0	0	1	0	0	1	5
Total Survey	0	18	22	40	4	29	0	33	0	0	0	0	25	0	7	32	105

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	1	1	2	0	1	0	1	0	0	0	0	2	0	2	4	7
7:15 AM	0	3	1	4	1	3	0	4	0	0	0	0	2	0	1	3	11
7:30 AM	0	1	4	5	2	4	0	6	0	0	0	0	3	0	1	4	15
7:45 AM	0	1	2	3	1	3	0	4	0	0	0	0	4	0	0	4	11
8:00 AM	0	3	3	6	0	3	0	3	0	0	0	0	7	0	2	9	18
8:15 AM	0	2	7	9	0	4	0	4	0	0	0	0	1	0	1	2	15
8:30 AM	0	2	3	5	0	6	0	6	0	0	0	0	4	0	0	4	15
8:45 AM	0	5	1	6	0	5	0	5	0	0	0	0	2	0	0	2	13
Total Survey	0	18	22	40	4	29	0	33	0	0	0	0	25	0	7	32	105

Heavy Vehicle Peak Hour Summary

7:20 AM to 8:20 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Abernathy Rd			Westbound Abernathy Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	19	29	48	16	14	30	0	0	0	22	14	36	57
PHF	0.68			0.67			0.00			0.61			0.79

By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	9	10	19	4	12	0	16	0	0	0	0	17	0	5	22	57
PHF	0.00	0.75	0.63	0.68	0.50	0.75	0.00	0.67	0.00	0.00	0.00	0.00	0.61	0.00	0.42	0.61	0.79

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	6	8	14	4	11	0	15	0	0	0	0	11	0	4	15	44
7:15 AM	0	8	10	18	4	13	0	17	0	0	0	0	16	0	4	20	55
7:30 AM	0	7	16	23	3	14	0	17	0	0	0	0	15	0	4	19	59
7:45 AM	0	8	15	23	1	16	0	17	0	0	0	0	16	0	3	19	59
8:00 AM	0	12	14	26	0	18	0	18	0	0	0	0	14	0	3	17	61

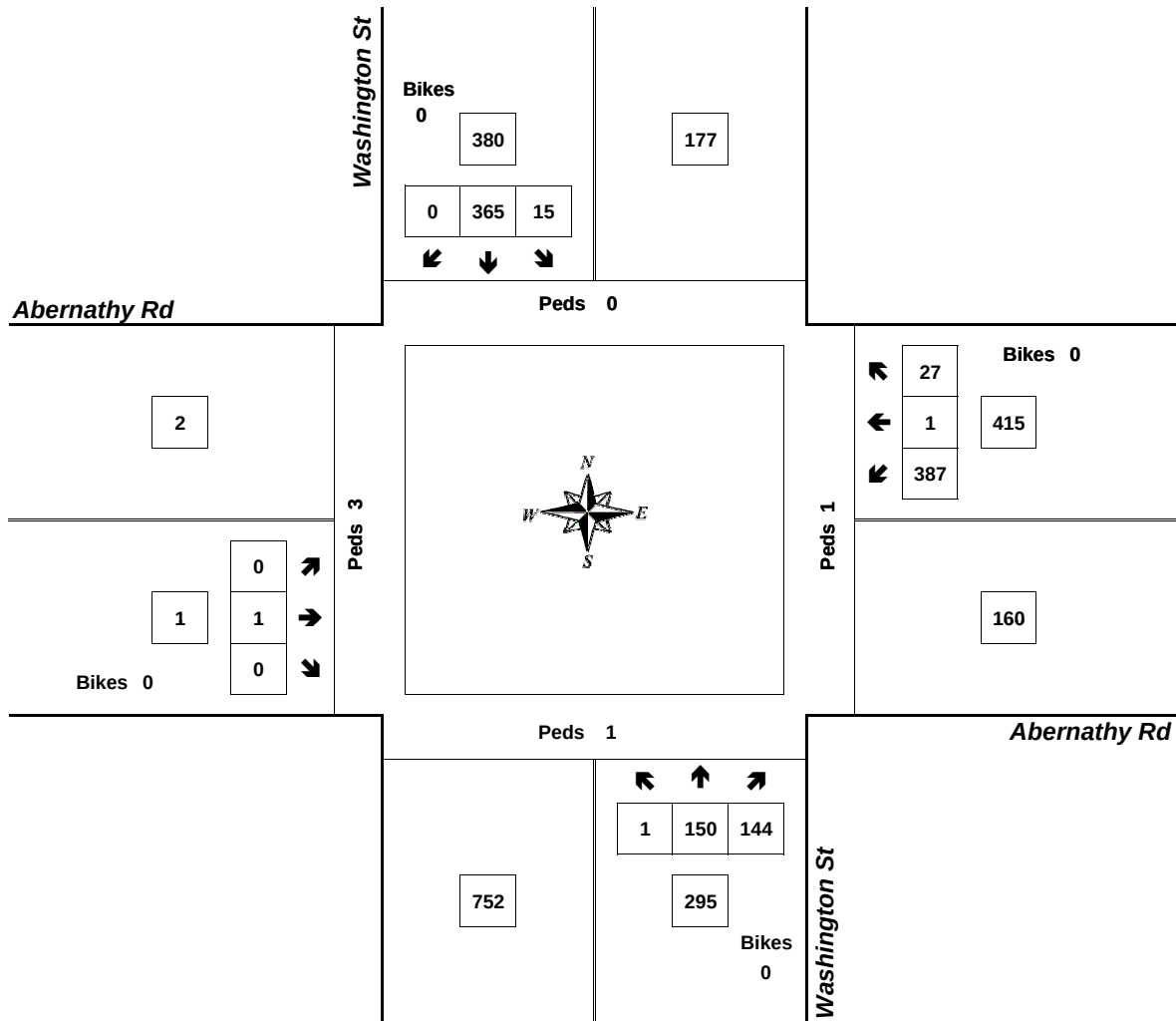
Peak Hour Summary



Clay Carney
(503) 833-2740

Washington St & Abernathy Rd

7:20 AM to 8:20 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.25	0.0%	1
WB	0.84	5.3%	415
NB	0.75	6.4%	295
SB	0.84	4.2%	380
Intersection	0.86	5.2%	1,091

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary



Clay Carney
(503) 833-2740

Washington St & Abernathy Rd

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	19	20	0	6	27	0	0	0	0	0	0	20	0	0	0	92	0	0	1	0
4:05 PM	0	26	29	0	2	26	1	0	0	0	0	0	16	0	2	0	102	0	0	1	0
4:10 PM	0	15	16	0	2	40	0	0	0	0	0	0	14	0	1	0	88	0	0	0	0
4:15 PM	0	22	21	0	2	25	0	0	0	0	1	0	11	0	0	0	82	0	0	1	0
4:20 PM	2	18	40	0	2	16	0	0	0	0	0	0	17	0	3	0	98	0	0	0	0
4:25 PM	2	22	18	0	4	31	0	0	0	0	1	0	15	0	5	0	98	0	0	0	0
4:30 PM	0	25	26	0	1	39	0	0	0	0	2	0	11	1	1	0	106	1	0	0	1
4:35 PM	0	20	23	0	6	43	0	0	2	0	1	0	22	0	5	0	122	0	0	0	1
4:40 PM	0	17	21	0	6	33	0	0	0	0	1	0	14	0	3	0	95	0	0	0	0
4:45 PM	0	21	35	0	0	27	0	0	0	0	0	0	13	0	3	0	99	0	1	1	1
4:50 PM	0	15	28	0	1	35	0	0	0	0	0	0	17	0	2	0	98	0	0	0	0
4:55 PM	1	22	24	0	3	23	0	0	0	0	0	0	18	0	4	0	95	0	0	0	0
5:00 PM	0	21	26	0	2	29	0	0	0	0	0	0	16	0	1	0	95	0	0	0	0
5:05 PM	0	14	14	0	1	22	0	0	0	0	0	0	17	0	0	0	68	0	0	0	0
5:10 PM	0	21	30	0	3	36	0	0	0	0	0	0	16	0	2	0	108	0	0	0	0
5:15 PM	0	17	26	0	4	28	0	0	0	0	0	0	11	0	3	0	89	0	0	0	0
5:20 PM	0	8	26	0	2	20	0	0	0	0	0	0	14	0	4	0	74	0	0	0	1
5:25 PM	0	13	31	0	4	29	0	0	0	0	0	0	14	0	5	0	96	0	0	0	0
5:30 PM	0	14	31	0	3	30	0	0	0	0	0	0	19	0	1	0	98	0	0	0	1
5:35 PM	0	16	21	0	1	27	1	0	0	0	0	0	19	0	1	0	86	0	0	0	0
5:40 PM	0	11	23	0	3	18	0	0	0	0	0	0	19	0	4	0	78	0	0	0	0
5:45 PM	0	15	31	0	5	28	0	0	0	0	0	0	9	0	2	0	90	0	0	0	1
5:50 PM	0	17	30	0	2	30	0	0	0	0	0	0	20	0	0	0	99	0	1	0	1
5:55 PM	0	14	25	0	2	15	0	0	0	0	0	0	15	0	0	0	71	0	0	0	0
Total Survey	5	423	615	0	67	677	2	0	2	0	6	0	377	1	52	0	2,227	1	2	4	7

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	60	65	0	10	93	1	0	0	0	0	0	50	0	3	0	282	0	0	2	0
4:15 PM	4	62	79	0	8	72	0	0	0	0	2	0	43	0	8	0	278	0	0	1	0
4:30 PM	0	62	70	0	13	115	0	0	2	0	4	0	47	1	9	0	323	1	0	0	2
4:45 PM	1	58	87	0	4	85	0	0	0	0	0	0	48	0	9	0	292	0	1	1	1
5:00 PM	0	56	70	0	6	87	0	0	0	0	0	0	49	0	3	0	271	0	0	0	0
5:15 PM	0	38	83	0	10	77	0	0	0	0	0	0	39	0	12	0	259	0	0	0	1
5:30 PM	0	41	75	0	7	75	1	0	0	0	0	0	57	0	6	0	262	0	0	0	1
5:45 PM	0	46	86	0	9	73	0	0	0	0	0	0	44	0	2	0	260	0	1	0	2
Total Survey	5	423	615	0	67	677	2	0	2	0	6	0	377	1	52	0	2,227	1	2	4	7

Peak Hour Summary

4:05 PM to 5:05 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	556	557	1,113	0	399	276	675	0	8	7	15	0	215	338	553	0	1,178	1	1	3	3
%HV	1.4%				3.3%				0.0%				3.7%				2.5%				
PHF	0.91				0.78				0.33				0.90				0.90				

By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	244	307	556	31	367	1	399	2	0	6	8	184	1	30	215	1,178
%HV	0.0%	1.2%	1.6%	1.4%	12.9%	2.5%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	3.3%	0.0%	6.7%	3.7%	2.5%
PHF	0.31	0.91	0.88	0.91	0.60	0.80	0.25	0.78	0.25	0.00	0.38	0.33	0.90	0.25	0.68	0.90	0.90

Rolling Hour Summary

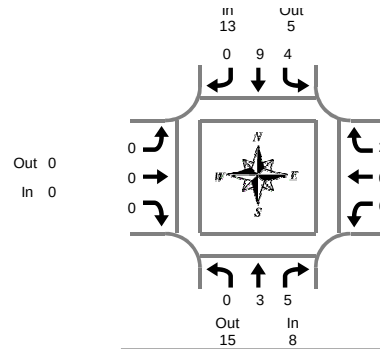
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	242	301	0	35	365	1	0	2	0	6	0	188	1	29	0	1,175	1	1	4	3
4:15 PM	5	238	306	0	31	359	0	0	2	0	6	0	187	1	29	0	1,164	1	1	2	3
4:30 PM	1	214	310	0	33	364	0	0	2	0	4	0	183	1	33	0	1,145	1	1	1	4
4:45 PM	1	193	315	0	27	324	1	0	0	0	0	0	193	0	30	0	1,084	0	1	1	3
5:00 PM	0	181	314	0	32	312	1	0	0	0	0	0	189	0	23	0	1,052	0	1	0	4

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & Abernathy Rd

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

Peak Hour Summary
4:05 PM to 5:05 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	0	2	0	2	0	0	0	0	2	0	0	2	5
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
4:10 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:20 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
4:25 PM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2
4:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
4:35 PM	0	1	1	2	0	3	0	3	0	0	0	0	0	0	0	0	5
4:40 PM	0	0	0	0	1	1	0	2	0	0	0	0	2	0	0	2	4
4:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
4:50 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:55 PM	0	1	1	2	1	0	0	1	0	0	0	0	0	0	1	1	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
5:10 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:25 PM	0	0	2	2	1	1	0	2	0	0	0	0	0	0	0	0	4
5:30 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Survey	0	5	11	16	8	12	0	20	0	0	0	0	11	0	2	13	49

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	0	4	0	4	0	0	0	0	4	0	1	5	10
4:15 PM	0	0	2	2	2	0	0	2	0	0	0	0	1	0	0	1	5
4:30 PM	0	1	2	3	1	4	0	5	0	0	0	0	3	0	0	3	11
4:45 PM	0	2	1	3	1	3	0	4	0	0	0	0	0	0	1	1	8
5:00 PM	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0	1	3
5:15 PM	0	0	2	2	2	1	0	3	0	0	0	0	1	0	0	1	6
5:30 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
Total Survey	0	5	11	16	8	12	0	20	0	0	0	0	11	0	2	13	49

Heavy Vehicle Peak Hour Summary

4:05 PM to 5:05 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Abernathy Rd			Westbound Abernathy Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	8	15	23	13	5	18	0	0	0	8	9	17	29
PHF	0.67			0.46			0.00			0.67			0.66

By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	3	5	8	4	9	0	13	0	0	0	0	6	0	2	8	29
PHF	0.00	0.38	0.63	0.67	0.50	0.38	0.00	0.46	0.00	0.00	0.00	0.00	0.50	0.00	0.50	0.67	0.66

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	3	6	9	4	11	0	15	0	0	0	0	8	0	2	10	34
4:15 PM	0	3	6	9	5	7	0	12	0	0	0	0	5	0	1	6	27
4:30 PM	0	3	6	9	5	8	0	13	0	0	0	0	5	0	1	6	28
4:45 PM	0	4	4	8	5	4	0	9	0	0	0	0	2	0	1	3	20
5:00 PM	0	2	5	7	4	1	0	5	0	0	0	0	3	0	0	3	15

Peak Hour Summary

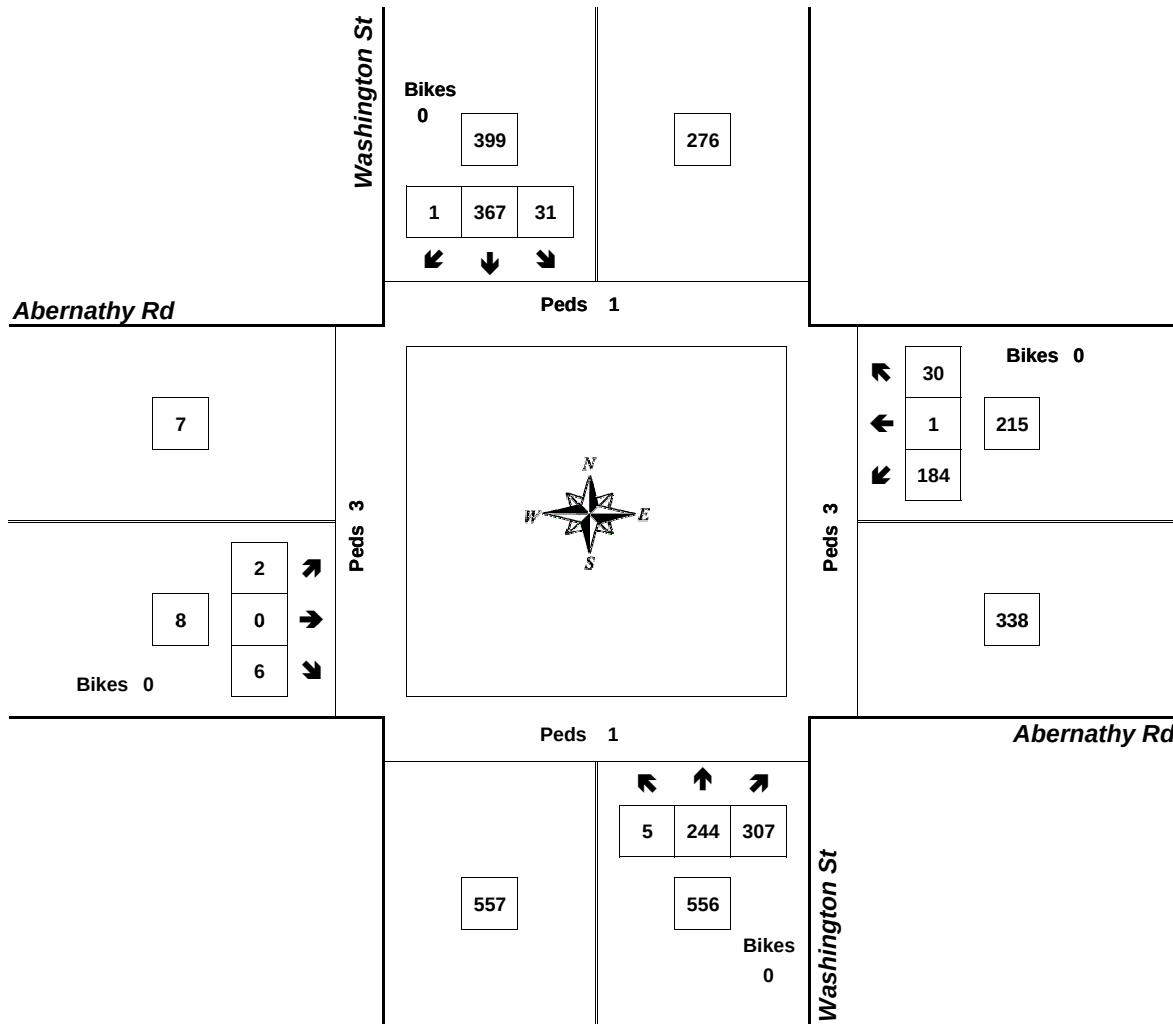


Clay Carney
(503) 833-2740

Washington St & Abernathy Rd

4:05 PM to 5:05 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.33	0.0%	8
WB	0.90	3.7%	215
NB	0.91	1.4%	556
SB	0.78	3.3%	399
Intersection	0.90	2.5%	1,178

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

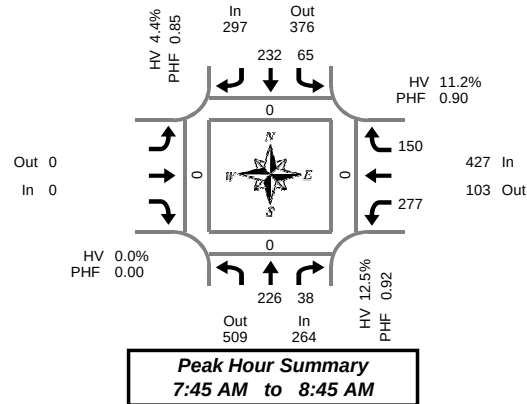


Clay Carney
(503) 833-2740

Washington St & Prairie Schooner Way

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	14	4	0	5	17	0			0	10		7	0	0	0	0	0
7:05 AM	8	0	0	2	10	0			0	15		8	0	0	0	0	0
7:10 AM	8	4	0	1	13	0			0	13		9	0	0	0	0	0
7:15 AM	12	3	1	5	13	0			0	19		18	0	0	0	0	0
7:20 AM	11	2	0	5	16	0			0	21		15	0	0	0	0	0
7:25 AM	12	2	0	5	18	0			0	33		10	0	0	0	0	0
7:30 AM	10	0	0	8	13	0			0	19		18	0	0	0	0	0
7:35 AM	15	2	0	3	20	0			0	17		11	0	0	0	0	0
7:40 AM	11	0	0	8	33	0			0	28		9	0	0	0	0	0
7:45 AM	20	1	0	6	25	0			0	29		12	0	0	0	0	0
7:50 AM	26	1	0	3	24	0			0	21		14	0	0	0	0	0
7:55 AM	18	3	0	10	19	0			0	25		16	0	0	0	0	0
8:00 AM	12	4	0	5	23	0			0	25		11	0	0	0	0	0
8:05 AM	17	7	0	4	15	0			0	19		12	0	0	0	0	0
8:10 AM	22	4	0	7	18	0			0	17		6	0	0	0	0	0
8:15 AM	18	4	0	1	17	0			0	22		15	0	0	0	0	0
8:20 AM	15	1	0	3	13	0			0	20		9	0	0	0	0	0
8:25 AM	16	3	0	7	19	0			0	21		17	0	0	0	0	0
8:30 AM	22	3	0	7	17	0			0	28		13	0	0	0	0	0
8:35 AM	18	4	0	6	16	0			0	24		15	0	0	0	0	0
8:40 AM	22	3	0	6	26	0			0	26		10	0	0	0	0	0
8:45 AM	22	4	0	4	10	0			0	32		12	0	0	0	0	0
8:50 AM	20	4	0	6	9	0			0	26		17	0	0	0	0	0
8:55 AM	19	5	0	8	23	0			0	21		19	0	0	0	0	0
Total Survey	388	68	1	125	427	0			0	531		303	0	0	0	0	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	30	8	0	8	40	0			0	38		24	0	0	0	0	0
7:15 AM	35	7	1	15	47	0			0	73		43	0	0	0	0	0
7:30 AM	36	2	0	19	66	0			0	64		38	0	0	0	0	0
7:45 AM	64	5	0	19	68	0			0	75		42	0	0	0	0	0
8:00 AM	51	15	0	16	56	0			0	61		29	0	0	0	0	0
8:15 AM	49	8	0	11	49	0			0	63		41	0	0	0	0	0
8:30 AM	62	10	0	19	59	0			0	78		38	0	0	0	0	0
8:45 AM	61	13	0	18	42	0			0	79		48	0	0	0	0	0
Total Survey	388	68	1	125	427	0			0	531		303	0	0	0	0	0

Peak Hour Summary

7:45 AM to 8:45 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total	Pedestrians Crosswalk			
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total		North	South	East	West
Volume	264	509	773	0	297	376	673	0	0	0	0	427	103	530	0	0	0
%HV	12.5%			4.4%			0.0%			11.2%			9.5%				
PHF	0.92			0.85			0.00			0.90			0.90				

By Movement	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	226	38	264	65	232	297			0	277	150	427	988
%HV	NA	14.2%	2.6%	12.5%	3.1%	4.7%	NA	4.4%	NA	NA	NA	11.2%	9.5%
PHF	0.88	0.63	0.92	0.81	0.85	0.85			0.00	0.89	0.83	0.90	0.90

Rolling Hour Summary

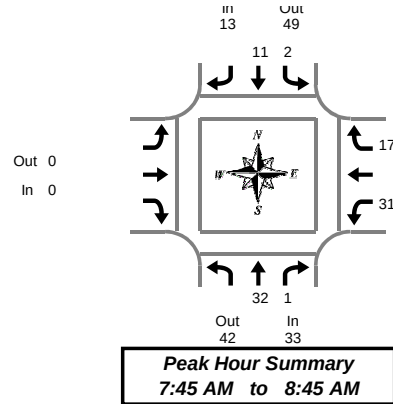
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
7:00 AM	165	22	1	61	221	0			0	250		147	0	0	0	0	0
7:15 AM	186	29	1	69	237	0			0	273		152	0	0	0	0	0
7:30 AM	200	30	0	65	239	0			0	263		150	0	0	0	0	0
7:45 AM	226	38	0	65	232	0			0	277		150	0	0	0	0	0
8:00 AM	223	46	0	64	206	0			0	281		156	0	0	0	0	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & Prairie Schooner Way

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	4	0	4	0	1	1			0	2	0	2	7
7:05 AM	0	0	0	0	1	1			0	1	0	1	2
7:10 AM	3	0	3	0	0	0			0	1	1	2	5
7:15 AM	2	0	2	0	0	0			0	1	3	4	6
7:20 AM	1	0	1	0	2	2			0	1	1	2	5
7:25 AM	2	1	3	0	1	1			0	3	0	3	7
7:30 AM	3	0	3	0	0	0			0	2	2	4	7
7:35 AM	1	0	1	0	0	0			0	1	0	1	2
7:40 AM	2	0	2	0	0	0			0	2	1	3	5
7:45 AM	2	0	2	0	0	0			0	5	1	6	8
7:50 AM	2	0	2	0	0	0			0	2	0	2	4
7:55 AM	2	0	2	1	1	2			0	1	0	1	5
8:00 AM	2	0	2	0	0	0			0	1	0	1	3
8:05 AM	4	0	4	0	1	1			0	3	1	4	9
8:10 AM	3	0	3	0	1	1			0	2	0	2	6
8:15 AM	1	1	2	0	1	1			0	4	4	8	11
8:20 AM	4	0	4	0	0	0			0	3	0	3	7
8:25 AM	2	0	2	1	1	2			0	3	3	6	10
8:30 AM	5	0	5	0	2	2			0	2	4	6	13
8:35 AM	3	0	3	0	2	2			0	2	1	3	8
8:40 AM	2	0	2	0	2	2			0	3	3	6	10
8:45 AM	4	1	5	0	0	0			0	6	0	6	11
8:50 AM	3	0	3	0	2	2			0	3	0	3	8
8:55 AM	4	0	4	2	1	3			0	3	2	5	12
Total Survey	61	3	64	4	19	23			0	57	27	84	171

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	7	0	7	0	2	2			0	4	1	5	14
7:15 AM	5	1	6	0	3	3			0	5	4	9	18
7:30 AM	6	0	6	0	0	0			0	5	3	8	14
7:45 AM	6	0	6	1	1	2			0	8	1	9	17
8:00 AM	9	0	9	0	2	2			0	6	1	7	18
8:15 AM	7	1	8	1	2	3			0	10	7	17	28
8:30 AM	10	0	10	0	6	6			0	7	8	15	31
8:45 AM	11	1	12	2	3	5			0	12	2	14	31
Total Survey	61	3	64	4	19	23			0	57	27	84	171

Heavy Vehicle Peak Hour Summary

7:45 AM to 8:45 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	33	42	75	13	49	62	0	0	0	48	3	51	94
PHF	0.75			0.54			0.00			0.71			0.76

By Movement	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	32	1	33	2	11	13			0	31	17	48	94
PHF	0.73	0.25	0.75	0.50	0.46	0.54			0.00	0.78	0.53	0.71	0.76

Heavy Vehicle Rolling Hour Summary

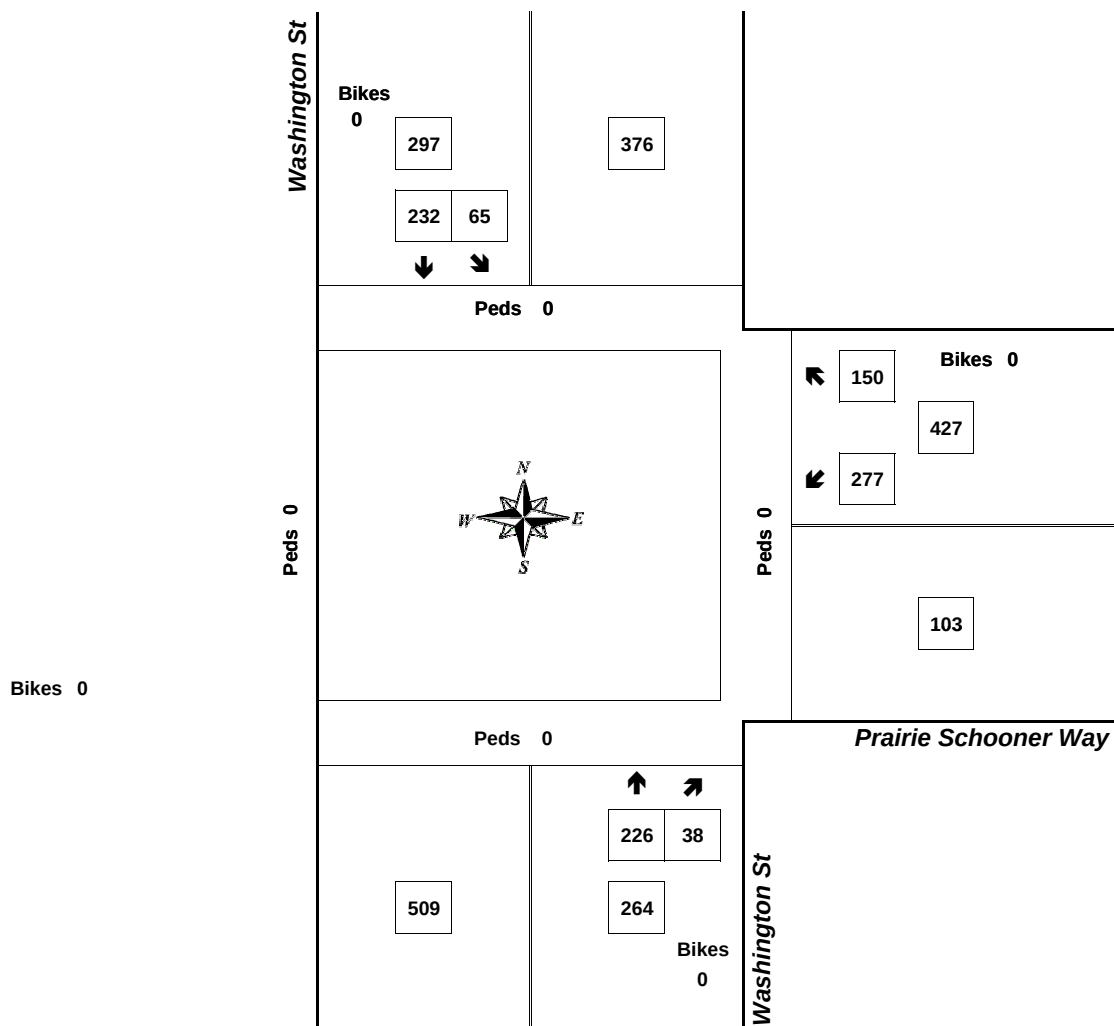
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	24	1	25	1	6	7			0	22	9	31	63
7:15 AM	26	1	27	1	6	7			0	24	9	33	67
7:30 AM	28	1	29	2	5	7			0	29	12	41	77
7:45 AM	32	1	33	2	11	13			0	31	17	48	94
8:00 AM	37	2	39	3	13	16			0	35	18	53	108

All Traffic Data
Services Inc.

Washington St & Prairie Schooner Way

Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.90	11.2%	427
NB	0.92	12.5%	264
SB	0.85	4.4%	297
Intersection	0.90	9.5%	988

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

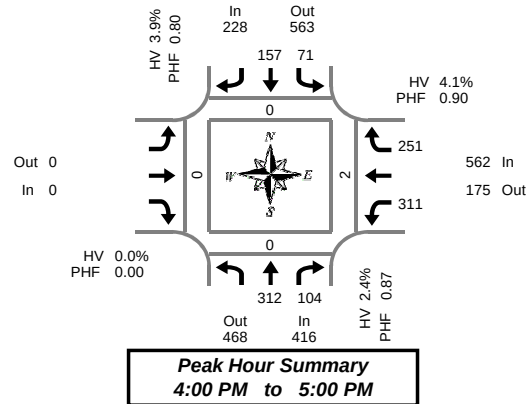


Clay Carney
(503) 833-2740

Washington St & Prairie Schooner Way

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	32	7	0	3	9	0			0	30		15	0	0	0	1	0
4:05 PM	22	7	0	3	8	0			0	37		26	0	0	0	0	0
4:10 PM	29	10	0	3	18	0			0	27		21	0	0	0	0	0
4:15 PM	27	7	0	10	11	0			0	25		16	0	0	0	1	0
4:20 PM	24	9	0	6	9	0			0	31		16	0	0	0	0	0
4:25 PM	28	6	0	0	15	1			0	26		19	0	0	0	0	0
4:30 PM	31	8	0	4	17	0			0	26		23	0	0	0	0	0
4:35 PM	30	12	0	9	17	0			0	27		24	0	0	0	0	0
4:40 PM	23	15	0	9	15	0			0	23		24	0	0	0	0	0
4:45 PM	28	7	0	6	14	0			0	21		24	0	0	0	0	0
4:50 PM	19	9	0	8	12	0			0	24		14	0	0	0	0	0
4:55 PM	19	7	0	10	12	0			0	14		29	0	0	0	0	0
5:00 PM	30	4	0	7	14	0			0	14		21	0	0	0	0	0
5:05 PM	22	7	0	5	15	0			0	17		24	0	0	0	0	0
5:10 PM	20	6	0	4	16	0			0	18		22	0	0	0	0	0
5:15 PM	25	14	0	5	11	0			0	21		22	0	0	0	0	0
5:20 PM	16	5	0	7	10	0			0	17		18	0	0	0	0	0
5:25 PM	13	8	0	5	15	0			0	19		14	0	0	0	0	0
5:30 PM	27	2	0	5	10	0			0	20		18	0	0	0	0	0
5:35 PM	13	7	0	4	9	0			0	23		15	0	0	0	0	0
5:40 PM	11	4	0	5	11	0			0	14		21	0	0	0	0	0
5:45 PM	14	3	0	4	15	0			0	17		13	0	0	0	0	0
5:50 PM	16	6	0	2	7	0			0	21		18	0	0	0	0	0
5:55 PM	15	8	0	4	7	0			0	21		19	0	0	0	0	0
Total Survey	534	178	0	128	297	1			0	533		476	0	0	0	2	0

15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	83	24	0	9	35	0			0	94		62	0	0	0	1	0
4:15 PM	79	22	0	16	35	1			0	82		51	0	0	0	1	0
4:30 PM	84	35	0	22	49	0			0	76		71	0	0	0	0	0
4:45 PM	66	23	0	24	38	0			0	59		67	0	0	0	0	0
5:00 PM	72	17	0	16	45	0			0	49		67	0	0	0	0	0
5:15 PM	54	27	0	17	36	0			0	57		54	0	0	0	0	0
5:30 PM	51	13	0	14	30	0			0	57		54	0	0	0	0	0
5:45 PM	45	17	0	10	29	0			0	59		50	0	0	0	0	0
Total Survey	534	178	0	128	297	1			0	533		476	0	0	0	2	0

Peak Hour Summary 4:00 PM to 5:00 PM

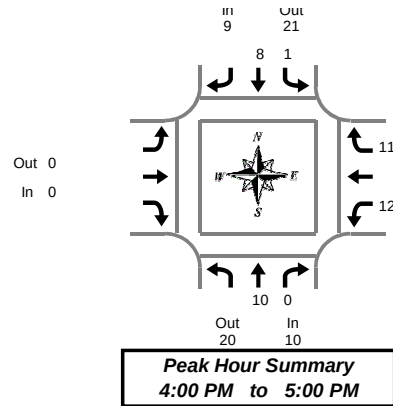
By Approach	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total	Pedestrians Crosswalk			
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total		North	South	East	West
Volume	416	468	884	0	228	563	791	1	0	0	0	0	1,206	0	0	2	0
%HV	2.4%			3.9%			0.0%			4.1%			3.5%				
PHF	0.87			0.80			0.00			0.90			0.89				

By Movement	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total
	T	R	Total	L	T	Total			Total	L		R	Total
Volume	312	104	416	71	157	228			0	311		251	562
%HV	NA	3.2%	0.0%	2.4%	1.4%	5.1%	NA	3.9%	NA	0.0%	3.9%	NA	4.1%
PHF	0.88	0.74	0.87	0.74	0.80	0.80			0.00	0.83		0.87	0.89

Rolling Hour Summary 4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total	Pedestrians Crosswalk			
	T	R	Bikes	L	T	Bikes			Bikes	L		R	Bikes	North	South	East	West
4:00 PM	312	104	0	71	157	1			0	311		251	0	0	0	2	0
4:15 PM	301	97	0	78	167	1			0	266		256	0	0	0	1	0
4:30 PM	276	102	0	79	168	0			0	241		259	0	0	0	0	0
4:45 PM	243	80	0	71	149	0			0	222		242	0	0	0	0	0
5:00 PM	222	74	0	57	140	0			0	222		225	0	0	0	0	0

Heavy Vehicle Summary



Washington St & Prairie Schooner Way

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total
	T	R	Total	L	T	Total			Total	L		R	Total
4:00 PM	2	0	2	0	0	0			0	2		1	3
4:05 PM	2	0	2	0	0	0			0	1		0	1
4:10 PM	0	0	0	1	0	1			0	0		3	3
4:15 PM	1	0	1	0	0	0			0	2		0	2
4:20 PM	1	0	1	0	1	1			0	1		3	4
4:25 PM	0	0	0	0	1	1			0	1		2	3
4:30 PM	0	0	0	0	2	2			0	1		0	1
4:35 PM	0	0	0	0	2	2			0	0		1	1
4:40 PM	2	0	2	0	1	1			0	3		0	3
4:45 PM	1	0	1	0	0	0			0	1		0	1
4:50 PM	1	0	1	0	0	0			0	0		1	1
4:55 PM	0	0	0	0	1	1			0	0		0	0
5:00 PM	1	0	1	0	0	0			0	0		0	0
5:05 PM	0	0	0	0	0	0			0	1		0	1
5:10 PM	0	0	0	0	1	1			0	1		1	2
5:15 PM	1	0	1	0	1	1			0	0		0	0
5:20 PM	1	1	2	0	0	0			0	0		1	1
5:25 PM	0	0	0	0	1	1			0	1		0	1
5:30 PM	1	0	1	0	1	1			0	0		1	1
5:35 PM	1	0	1	0	0	0			0	1		0	1
5:40 PM	0	0	0	0	0	0			0	0		0	0
5:45 PM	0	0	0	0	0	0			0	0		1	1
5:50 PM	0	2	2	1	0	1			0	1		1	2
5:55 PM	0	0	0	0	1	1			0	0		2	2
Total Survey	15	3	18	2	13	15			0	17		18	35

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total
	T	R	Total	L	T	Total			Total	L		R	Total
4:00 PM	4	0	4	1	0	1			0	3		4	7
4:15 PM	2	0	2	0	2	2			0	4		5	9
4:30 PM	2	0	2	0	5	5			0	4		1	5
4:45 PM	2	0	2	0	1	1			0	1		1	2
5:00 PM	1	0	1	0	1	1			0	2		1	3
5:15 PM	2	1	3	0	2	2			0	1		1	2
5:30 PM	2	0	2	0	1	1			0	1		1	2
5:45 PM	0	2	2	1	1	2			0	1		4	5
Total Survey	15	3	18	2	13	15			0	17		18	35

Heavy Vehicle Peak Hour Summary

4:00 PM to 5:00 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	10	20	30	9	21	30	0	0	0	23	1	24	42
PHF	0.63			0.45			0.00			0.64			0.81

By Movement	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Total
	T	R	Total	L	T	Total			Total	L		R	Total
Volume	10	0	10	1	8	9			0	12		11	23
PHF	0.63	0.00	0.63	0.25	0.40	0.45			0.00	0.75		0.46	0.64

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St			Southbound Washington St			Eastbound Prairie Schooner Way			Westbound Prairie Schooner Way			Interval Total
	T	R	Total	L	T	Total			Total	L		R	Total
4:00 PM	10	0	10	1	8	9			0	12		11	23
4:15 PM	7	0	7	0	9	9			0	11		8	19
4:30 PM	7	1	8	0	9	9			0	8		4	12
4:45 PM	7	1	8	0	5	5			0	5		4	9
5:00 PM	5	3	8	1	5	6			0	5		7	12

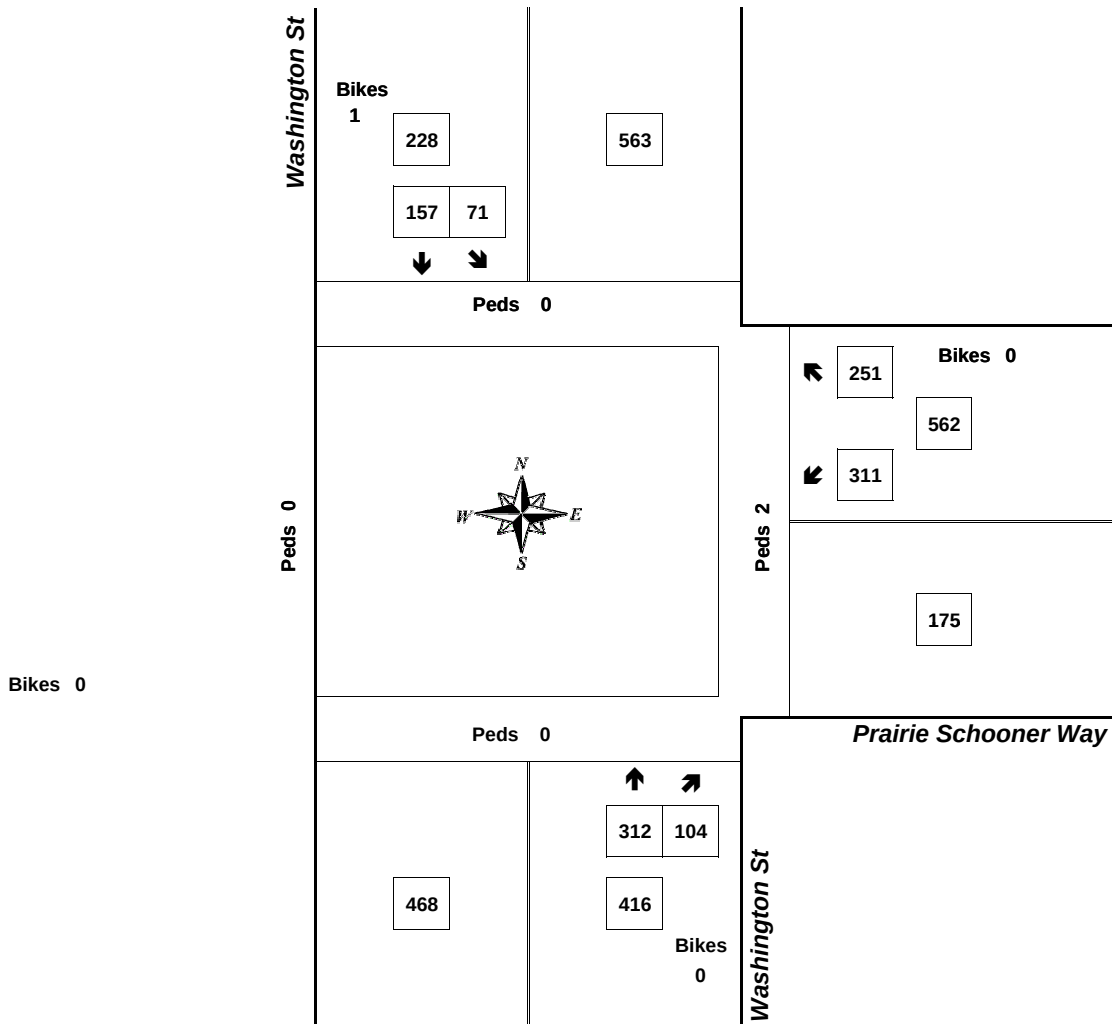
Peak Hour Summary



Clay Carney
(503) 833-2740

Washington St & Prairie Schooner Way

4:00 PM to 5:00 PM
Wednesday, January 25, 2017



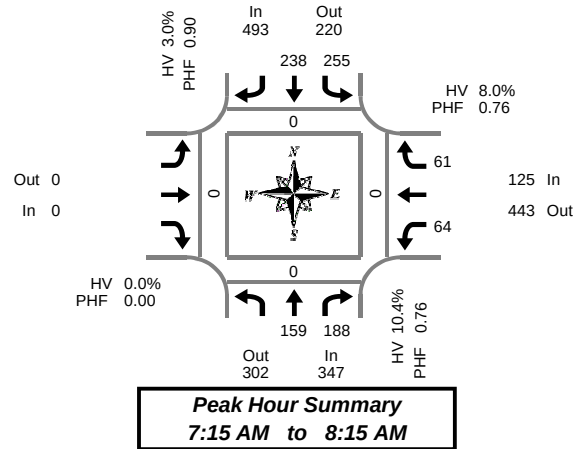
Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.90	4.1%	562
NB	0.87	2.4%	416
SB	0.80	3.9%	228
Intersection	0.89	3.5%	1,206

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & Clackamas River Dr

Thursday, January 26, 2017

7:00 AM to 9:00 AM

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T					Bikes		L		R	Bikes		North	South	East	West
7:00 AM	20	30	0		64	37					0		6		0		167	0	0	0	0
7:15 AM	37	47	0		77	53					0		11		7	0	232	0	0	0	0
7:30 AM	35	39	0		67	70					0		17		11	0	239	0	0	0	0
7:45 AM	53	61	0		58	65					0		16		22	0	275	0	0	0	0
8:00 AM	34	41	0		53	50					0		20		21	0	219	0	0	0	0
8:15 AM	35	56	0		53	44					0		19		16	0	223	0	0	0	0
8:30 AM	42	36	0		44	54					0		26		17	0	219	0	0	0	0
8:45 AM	53	54	0		47	51					0		14		18	0	237	1	0	1	0
Total Survey	309	364	0		463	424					0		133		118	0	1,811	1	0	1	0

Peak Hour Summary

7:15 AM to 8:15 AM

By Approach	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	347	302	649	0	493	220	713	0	0	0	0	0	125	443	568	0	965	0	0	0	0
%HV	10.4%				3.0%				0.0%				8.0%				6.3%				
PHF	0.76				0.90				0.00				0.76				0.88				

By Movement	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	159	188	347		255	238		493				0	64		61	125	965
%HV	NA	2.5%	17.0%	10.4%	5.1%	0.8%	NA	3.0%	NA	NA	NA	0.0%	9.4%	NA	6.6%	8.0%	6.3%
PHF	0.75	0.77	0.76		0.83	0.85		0.90				0.00	0.80		0.69	0.76	0.88

Rolling Hour Summary

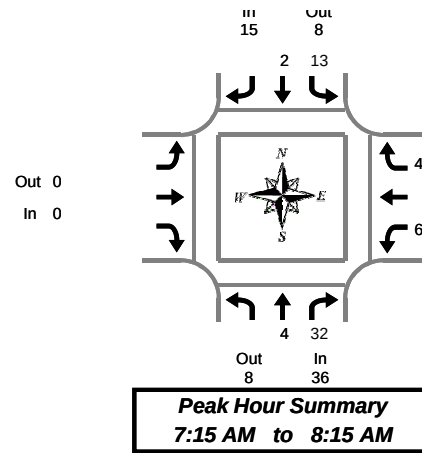
7:00 AM to 9:00 AM

Interval Start Time	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T					Bikes		L		R	Bikes		North	South	East	West
7:00 AM	145	177	0		266	225		0			0		54		46	0	913	0	0	0	0
7:15 AM	159	188	0		255	238		0			0		64		61	0	965	0	0	0	0
7:30 AM	157	197	0		231	229		0			0		72		70	0	956	0	0	0	0
7:45 AM	164	194	0		208	213		0			0		81		76	0	936	0	0	0	0
8:00 AM	164	187	0		197	199		0			0		79		72	0	898	1	0	1	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & Clackamas River Dr

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	2	5	7	4	0	4			0	1	0	1	12
7:15 AM	2	7	9	3	1	4			0	2	2	4	17
7:30 AM	0	8	8	7	0	7			0	0	0	0	15
7:45 AM	0	8	8	1	0	1			0	2	2	4	13
8:00 AM	2	9	11	2	1	3			0	2	0	2	16
8:15 AM	3	10	13	1	2	3			0	1	0	1	17
8:30 AM	7	10	17	1	0	1			0	5	3	8	26
8:45 AM	2	12	14	6	4	10			0	2	1	3	27
Total Survey	18	69	87	25	8	33			0	15	8	23	143

Heavy Vehicle Peak Hour Summary

7:15 AM to 8:15 AM

By Approach	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	36	8	44	15	8	23	0	0	0	10	45	55	61
PHF	0.20			0.25			0.00			0.21			0.22

By Movement	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	4	32	36	13	2	15			0	6	4	10	61
PHF	0.08	0.25	0.20	0.23	0.08	0.25			0.00	0.19	0.25	0.21	0.22

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
7:00 AM	4	28	32	15	1	16			0	5	4	9	57
7:15 AM	4	32	36	13	2	15			0	6	4	10	61
7:30 AM	5	35	40	11	3	14			0	5	2	7	61
7:45 AM	12	37	49	5	3	8			0	10	5	15	72
8:00 AM	14	41	55	10	7	17			0	10	4	14	86

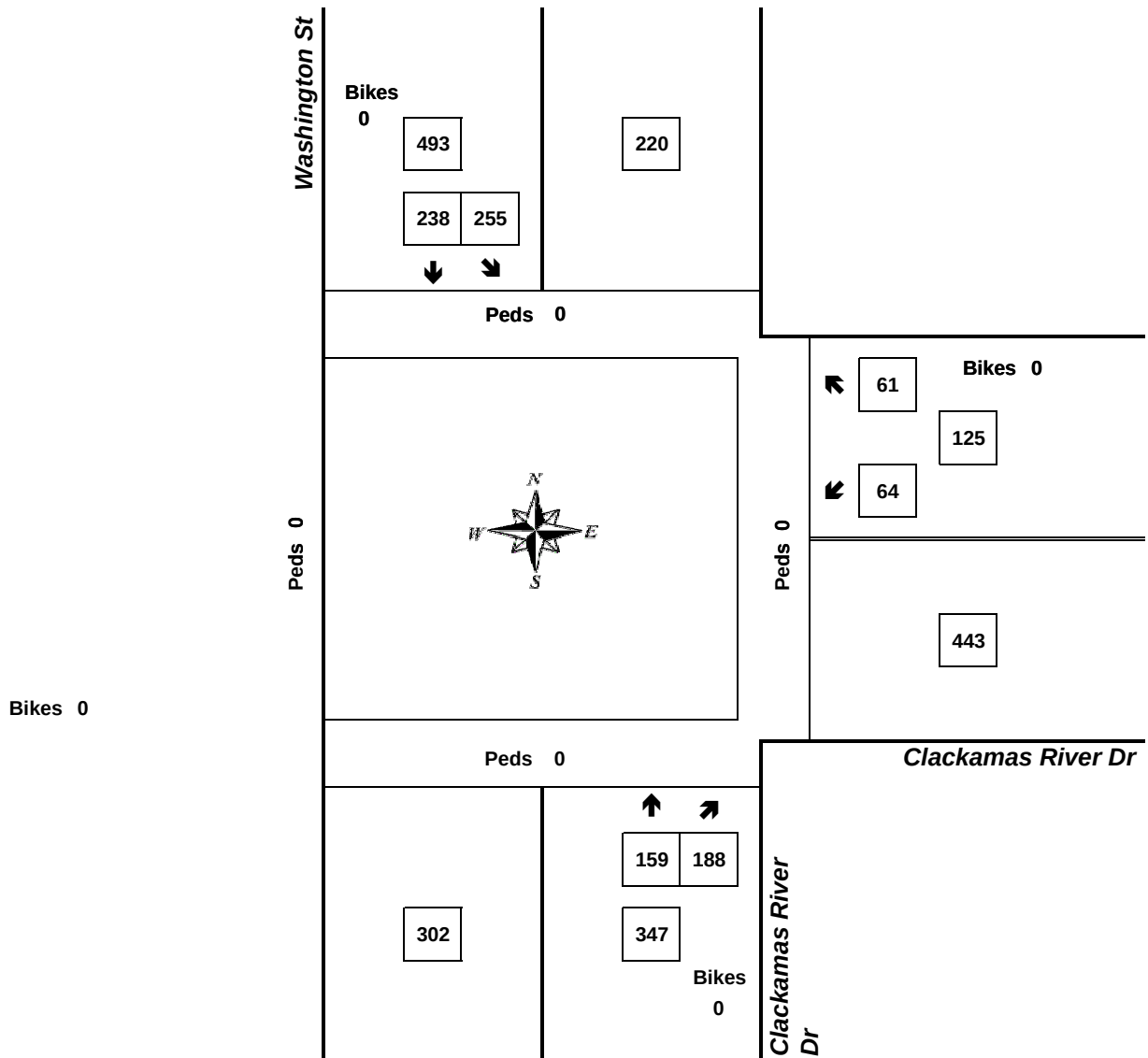
Peak Hour Summary



Clay Carney
(503) 833-2740

Washington St & Clackamas River Dr

7:15 AM to 8:15 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.76	8.0%	125
NB	0.76	10.4%	347
SB	0.90	3.0%	493
Intersection	0.88	6.3%	965

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

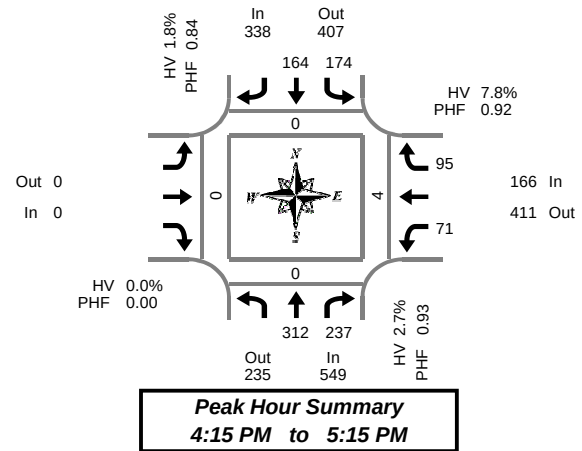


Clay Carney
(503) 833-2740

Washington St & Clackamas River Dr

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T					Bikes		L		R	Bikes		North	South	East	West
4:00 PM	73	66	0		32	28					0		33		0		249	0	0	0	0
4:15 PM	59	72	0		39	26					0		20		25	0	241	0	0	0	0
4:30 PM	88	59	0		50	51					0		22		23	0	293	0	0	0	0
4:45 PM	87	46	0		45	44					0		18		20	0	260	0	0	0	0
5:00 PM	78	60	0		40	43					0		11		27	0	259	0	0	4	0
5:15 PM	68	44	0		38	41					0		17		21	0	229	0	0	0	0
5:30 PM	67	39	0		33	32					0		12		23	0	206	0	0	0	0
5:45 PM	59	45	0		30	25					0		10		19	0	188	0	0	0	0
Total Survey	579	431	0		307	290					0		127		191	0	1,925	0	0	4	0

Peak Hour Summary

4:15 PM to 5:15 PM

By Approach	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	549	235	784	0	338	407	745	0	0	0	0	0	166	411	577	0	1,053	0	0	4	0
%HV	2.7%				1.8%				0.0%				7.8%				3.2%				
PHF	0.93				0.84				0.00				0.92				0.90				

By Movement	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	T	R	Total		L	T	Total				Total		L		R	Total	
Volume	312	237	549		174	164	338				0		71		95	166	1,053
%HV	NA	0.3%	5.9%	2.7%	1.7%	1.8%	NA	1.8%	NA	NA	0.0%	9.9%	NA	6.3%	7.8%	3.2%	
PHF	0.89	0.82	0.93		0.87	0.80	0.84				0.00		0.81		0.88	0.92	0.90

Rolling Hour Summary

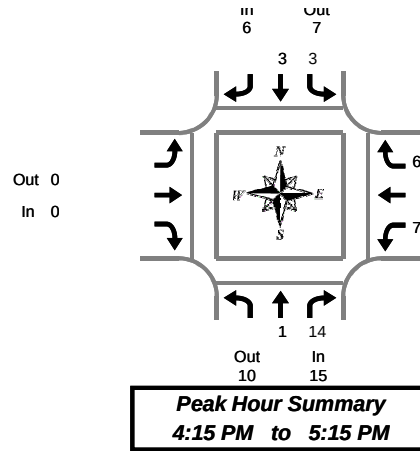
4:00 PM to 6:00 PM

Interval Start Time	Northbound Clackamas River Dr				Southbound Washington St				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T					Bikes		L		R	Bikes		North	South	East	West
4:00 PM	307	243	0		166	149					0		77		101	0	1,043	0	0	0	0
4:15 PM	312	237	0		174	164					0		71		95	0	1,053	0	0	4	0
4:30 PM	321	209	0		173	179					0		68		91	0	1,041	0	0	4	0
4:45 PM	300	189	0		156	160					0		58		91	0	954	0	0	4	0
5:00 PM	272	188	0		141	141					0		50		90	0	882	0	0	4	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Washington St & Clackamas River Dr

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	3	4	7	0	1	1			0	3	3	6	11
4:15 PM	0	7	7	0	0	0			0	3	1	4	11
4:30 PM	0	2	2	1	2	3			0	2	2	4	9
4:45 PM	1	3	4	0	1	1			0	1	1	2	7
5:00 PM	0	2	2	2	0	2			0	1	2	3	7
5:15 PM	0	2	2	0	1	1			0	2	0	2	5
5:30 PM	2	2	4	0	0	0			0	0	1	1	5
5:45 PM	1	2	3	0	1	1			0	1	0	1	5
Total Survey	7	24	31	3	6	9			0	10	10	20	60

Heavy Vehicle Peak Hour Summary

4:15 PM to 5:15 PM

By Approach	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	15	10	25	6	7	13	0	0	0	13	17	30	34
PHF	0.23			0.25			0.00			0.30			0.27

By Movement	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	T	R	Total	L	T	Total			Total	L	R	Total	
Volume	1	14	15	3	3	6			0	7	6	13	34
PHF	0.08	0.27	0.23	0.25	0.25	0.25			0.00	0.29	0.25	0.30	0.27

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Clackamas River Dr			Southbound Washington St			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Interval Total
	T	R	Total	L	T	Total			Total	L	R	Total	
4:00 PM	4	16	20	1	4	5			0	6	7	13	38
4:15 PM	1	14	15	3	3	6			0	7	6	13	34
4:30 PM	1	9	10	3	4	7			0	6	5	11	28
4:45 PM	3	9	12	2	2	4			0	4	4	8	24
5:00 PM	3	8	11	2	2	4			0	4	3	7	22

Peak Hour Summary

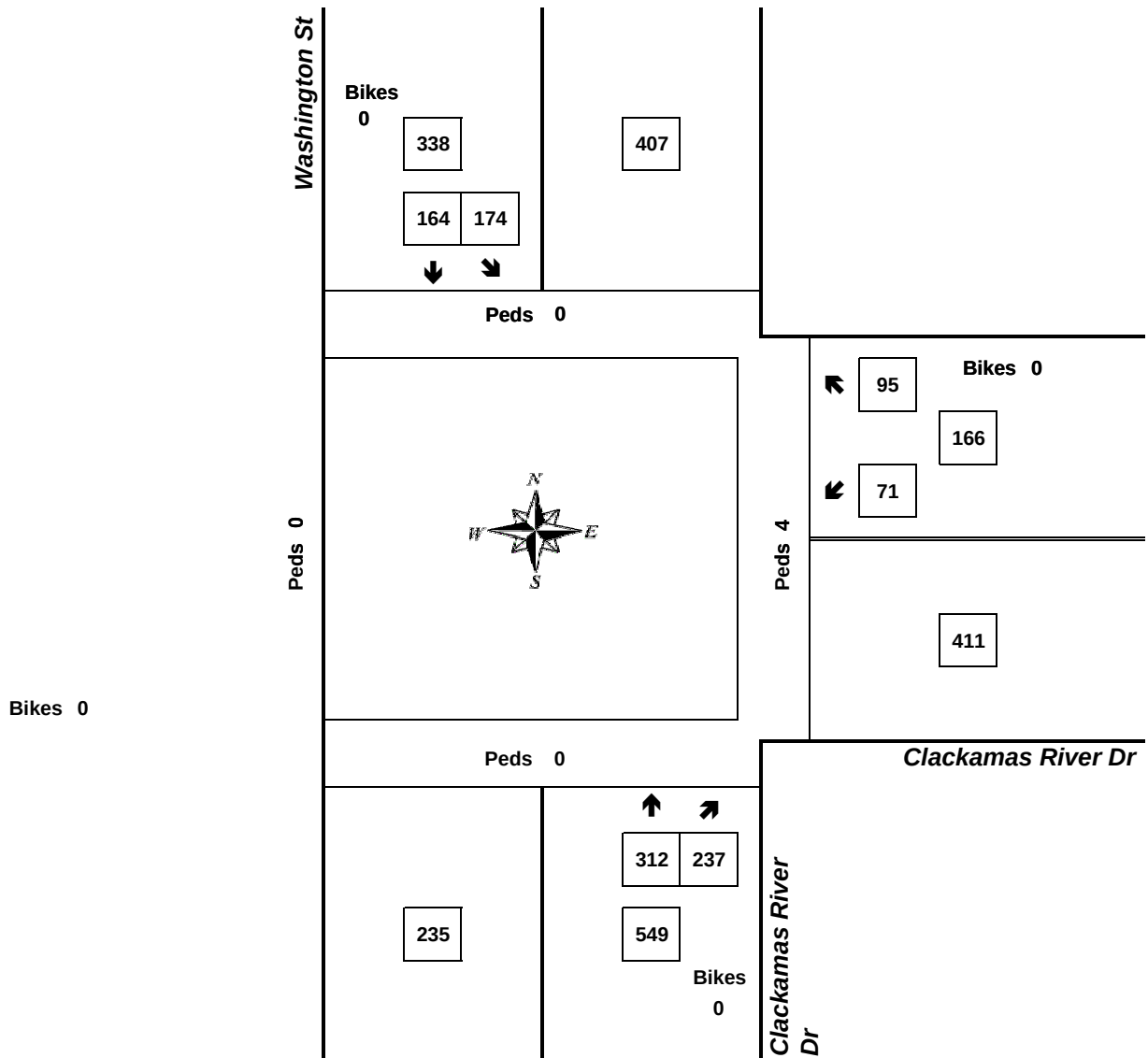


Clay Carney
(503) 833-2740

Washington St & Clackamas River Dr

4:15 PM to 5:15 PM

Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.92	7.8%	166
NB	0.93	2.7%	549
SB	0.84	1.8%	338
Intersection	0.90	3.2%	1,053

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

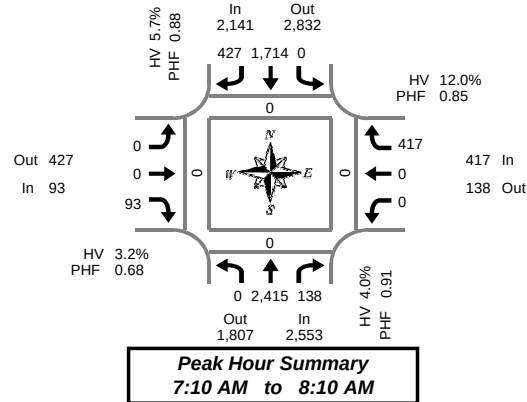


Clay Carney
(503) 833-2740

Hwy 213 & Clackamas River Dr

Thursday, January 26, 2017

7:00 AM to 9:00 AM



5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	215	7	0	0	103	17	0	0	0	5	0	0	0	31	0	378	0	0	0	0
7:05 AM	0	237	8	0	0	95	24	0	0	0	4	0	0	0	33	0	401	0	0	0	0
7:10 AM	0	199	8	0	0	134	21	0	0	0	7	0	0	0	34	0	403	0	0	0	0
7:15 AM	0	239	7	0	0	118	39	0	0	0	6	0	0	0	31	0	440	0	0	0	0
7:20 AM	0	231	12	0	0	147	37	0	0	0	6	0	0	0	36	0	469	0	0	0	0
7:25 AM	0	201	8	1	0	117	40	0	0	0	9	0	0	0	52	0	427	0	0	0	0
7:30 AM	0	220	12	0	0	128	38	0	0	0	9	0	0	0	34	0	441	0	0	0	0
7:35 AM	0	188	13	0	0	146	30	0	0	0	3	0	0	0	32	0	412	0	0	0	0
7:40 AM	0	176	6	0	0	126	35	0	0	0	7	0	0	0	34	0	384	0	0	0	0
7:45 AM	0	158	12	0	0	173	40	0	0	0	10	0	0	0	44	0	437	0	0	0	0
7:50 AM	0	210	12	0	0	159	39	0	0	0	2	0	0	0	22	0	444	0	0	0	0
7:55 AM	0	188	13	0	0	162	38	0	0	0	8	0	0	0	36	0	445	0	0	0	0
8:00 AM	0	195	14	0	0	142	36	0	0	0	14	0	0	0	37	0	438	0	0	0	0
8:05 AM	0	210	21	0	0	162	34	0	0	0	12	0	0	0	25	0	464	0	0	0	0
8:10 AM	0	174	16	0	0	95	26	0	0	0	7	0	0	0	36	0	354	0	0	0	0
8:15 AM	0	150	12	0	0	108	36	1	0	0	11	0	0	0	54	0	371	0	0	0	0
8:20 AM	0	205	11	0	0	126	29	0	0	0	3	0	0	0	27	0	401	0	0	0	0
8:25 AM	0	178	16	0	0	132	37	0	0	0	6	0	0	0	37	0	406	0	0	0	0
8:30 AM	0	152	9	0	0	134	40	0	0	0	12	0	0	0	38	0	385	0	0	0	0
8:35 AM	0	155	13	0	0	173	40	0	0	0	14	0	0	0	37	0	432	0	0	0	0
8:40 AM	0	168	14	0	0	148	34	0	0	0	8	0	0	0	25	0	397	0	0	0	0
8:45 AM	0	145	18	0	0	153	47	0	0	0	3	0	0	0	33	0	399	0	0	1	0
8:50 AM	0	142	13	0	0	138	43	0	0	0	16	0	0	0	45	0	397	0	0	0	0
8:55 AM	0	183	17	0	0	110	37	0	0	0	9	0	0	0	36	0	392	0	0	0	0
Total Survey	0	4,519	292	1	0	3,229	837	1	0	0	191	0	0	0	849	0	9,917	0	0	1	0

15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	651	23	0	0	332	62	0	0	0	16	0	0	0	98	0	1,182	0	0	0	0
7:15 AM	0	671	27	1	0	382	116	0	0	0	21	0	0	0	119	0	1,336	0	0	0	0
7:30 AM	0	584	31	0	0	400	103	0	0	0	19	0	0	0	100	0	1,237	0	0	0	0
7:45 AM	0	556	37	0	0	494	117	0	0	0	20	0	0	0	102	0	1,326	0	0	0	0
8:00 AM	0	579	51	0	0	399	96	0	0	0	33	0	0	0	98	0	1,256	0	0	0	0
8:15 AM	0	533	39	0	0	366	102	1	0	0	20	0	0	0	118	0	1,178	0	0	0	0
8:30 AM	0	475	36	0	0	455	114	0	0	0	34	0	0	0	100	0	1,214	0	0	0	0
8:45 AM	0	470	48	0	0	401	127	0	0	0	28	0	0	0	114	0	1,188	0	0	1	0
Total Survey	0	4,519	292	1	0	3,229	837	1	0	0	191	0	0	0	849	0	9,917	0	0	1	0

Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,553	1,807	4,360	1	2,141	2,832	4,973	0	93	427	520	0	417	138	555	0	5,204	0	0	0	0
%HV	4.0%				5.7%				3.2%				12.0%				5.3%				
PHF	0.91				0.88				0.68				0.85				0.97				

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	2,415	138	2,553	0	1,714	427	2,141	0	0	93	93	0	0	417	417	5,204
%HV	0.0%	3.7%	9.4%	4.0%	0.0%	5.3%	7.3%	5.7%	0.0%	0.0%	3.2%	3.2%	0.0%	0.0%	12.0%	12.0%	5.3%
PHF	0.00	0.90	0.72	0.91	0.00	0.87	0.91	0.88	0.00	0.00	0.68	0.68	0.00	0.00	0.85	0.85	0.97

Rolling Hour Summary

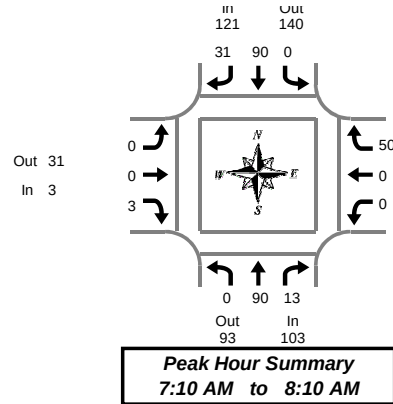
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	2,462	118	1	0	1,608	398	0	0	0	76	0	0	0	419	0	5,081	0	0	0	0
7:15 AM	0	2,390	146	1	0	1,675	432	0	0	0	93	0	0	0	419	0	5,155	0	0	0	0
7:30 AM	0	2,252	158	0	0	1,659	418	1	0	0	92	0	0	0	418	0	4,997	0	0	0	0
7:45 AM	0	2,143	163	0	0	1,714	429	1	0	0	107	0	0	0	418	0	4,974	0	0	0	0
8:00 AM	0	2,057	174	0	0	1,621	439	1	0	0	115	0	0	0	430	0	4,836	0	0	1	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 213 & Clackamas River Dr

Thursday, January 26, 2017

7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	7	0	7	0	6	2	8	0	0	0	0	0	0	1	1	16
7:05 AM	0	4	1	5	0	7	2	9	0	0	0	0	0	0	3	3	17
7:10 AM	0	5	1	6	0	6	1	7	0	0	0	0	0	0	3	3	16
7:15 AM	0	8	0	8	0	11	4	15	0	0	0	0	0	0	7	7	30
7:20 AM	0	8	3	11	0	7	2	9	0	0	0	0	0	0	4	4	24
7:25 AM	0	13	0	13	0	5	3	8	0	0	1	1	0	0	5	5	27
7:30 AM	0	2	2	4	0	6	4	10	0	0	0	0	0	0	2	2	16
7:35 AM	0	7	0	7	0	4	1	5	0	0	0	0	0	0	6	6	18
7:40 AM	0	5	0	5	0	6	3	9	0	0	0	0	0	0	2	2	16
7:45 AM	0	2	0	2	0	14	6	20	0	0	0	0	0	0	7	7	29
7:50 AM	0	5	1	6	0	2	2	4	0	0	0	0	0	0	2	2	12
7:55 AM	0	8	1	9	0	12	1	13	0	0	1	1	0	0	4	4	27
8:00 AM	0	14	2	16	0	9	1	10	0	0	1	1	0	0	4	4	31
8:05 AM	0	13	3	16	0	8	3	11	0	0	0	0	0	0	4	4	31
8:10 AM	0	9	0	9	0	8	3	11	0	0	0	0	0	0	5	5	25
8:15 AM	0	16	2	18	0	10	7	17	0	0	1	1	0	0	2	2	38
8:20 AM	0	12	1	13	0	7	3	10	0	0	0	0	0	0	4	4	27
8:25 AM	0	14	2	16	0	8	6	14	0	0	2	2	0	0	6	6	38
8:30 AM	0	10	1	11	0	11	5	16	0	0	0	0	0	0	6	6	33
8:35 AM	0	5	2	7	0	7	3	10	0	0	0	0	0	0	7	7	24
8:40 AM	0	6	4	10	0	11	4	15	0	0	0	0	0	0	3	3	28
8:45 AM	0	6	5	11	0	8	6	14	0	0	1	1	0	0	4	4	30
8:50 AM	0	10	0	10	0	13	3	16	0	0	1	1	0	0	8	8	35
8:55 AM	0	17	1	18	0	6	6	12	0	0	1	1	0	0	6	6	37
Total Survey	0	206	32	238	0	192	81	273	0	0	9	9	0	0	105	105	625

Heavy Vehicle 15-Minute Interval Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	16	2	18	0	19	5	24	0	0	0	0	0	0	7	7	49
7:15 AM	0	29	3	32	0	23	9	32	0	0	1	1	0	0	16	16	81
7:30 AM	0	14	2	16	0	16	8	24	0	0	0	0	0	0	10	10	50
7:45 AM	0	15	2	17	0	28	9	37	0	0	1	1	0	0	13	13	68
8:00 AM	0	36	5	41	0	25	7	32	0	0	1	1	0	0	13	13	87
8:15 AM	0	42	5	47	0	25	16	41	0	0	3	3	0	0	12	12	103
8:30 AM	0	21	7	28	0	29	12	41	0	0	0	0	0	0	16	16	85
8:45 AM	0	33	6	39	0	27	15	42	0	0	3	3	0	0	18	18	102
Total Survey	0	206	32	238	0	192	81	273	0	0	9	9	0	0	105	105	625

Heavy Vehicle Peak Hour Summary

7:10 AM to 8:10 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	103	93	196	121	140	261	3	31	34	50	13	63	277
PHF	0.63			0.82			0.38			0.78			0.78

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	90	13	103	0	90	31	121	0	0	3	3	0	0	50	50	277
PHF	0.00	0.64	0.54	0.63	0.00	0.78	0.70	0.82	0.00	0.00	0.38	0.38	0.00	0.00	0.78	0.78	0.78

Heavy Vehicle Rolling Hour Summary

7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	74	9	83	0	86	31	117	0	0	2	2	0	0	46	46	248
7:15 AM	0	94	12	106	0	92	33	125	0	0	3	3	0	0	52	52	286
7:30 AM	0	107	14	121	0	94	40	134	0	0	5	5	0	0	48	48	308
7:45 AM	0	114	19	133	0	107	44	151	0	0	5	5	0	0	54	54	343
8:00 AM	0	132	23	155	0	106	50	156	0	0	7	7	0	0	59	59	377

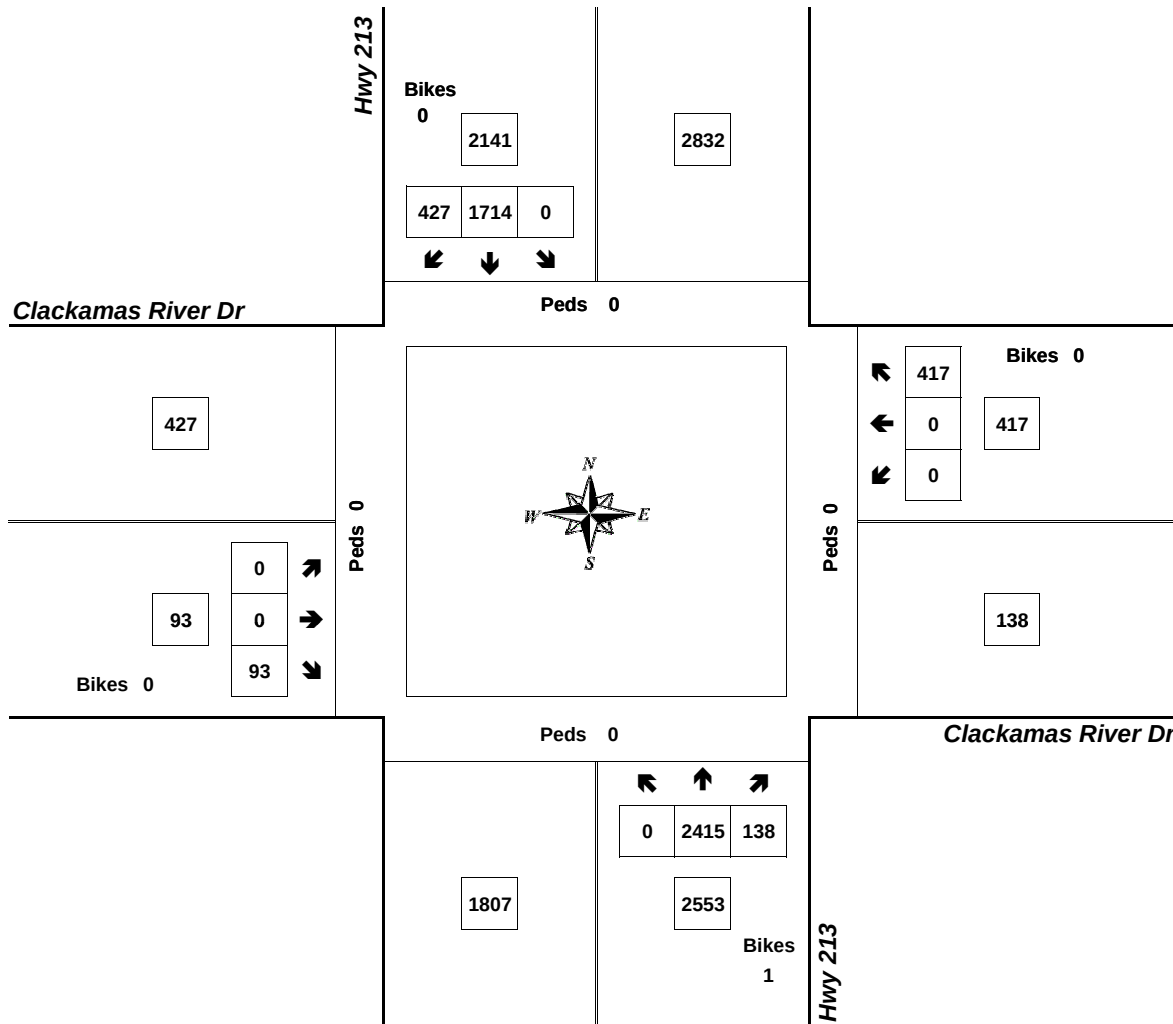
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 213 & Clackamas River Dr

7:10 AM to 8:10 AM
Thursday, January 26, 2017



Approach	PHF	HV%	Volume
EB	0.68	3.2%	93
WB	0.85	12.0%	417
NB	0.91	4.0%	2,553
SB	0.88	5.7%	2,141
Intersection	0.97	5.3%	5,204

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

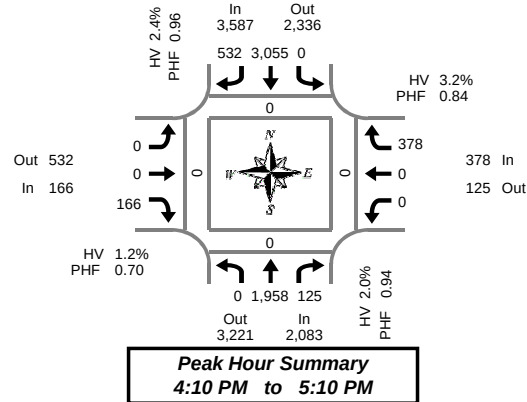


Clay Carney
(503) 833-2740

Hwy 213 & Clackamas River Dr

Wednesday, January 25, 2017

4:00 PM to 6:00 PM



5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	156	13	0	0	249	49	0	0	0	14	0	0	0	24	0	505	0	0	0	0
4:05 PM	0	145	16	0	0	224	54	0	0	0	11	0	0	0	39	0	489	0	0	0	0
4:10 PM	0	194	11	0	0	264	49	0	0	0	11	0	0	0	35	0	564	0	0	0	0
4:15 PM	0	170	14	0	0	283	41	0	0	0	13	0	0	0	24	0	545	0	0	0	0
4:20 PM	0	155	10	0	0	250	46	0	0	0	14	0	0	0	24	0	499	0	0	0	0
4:25 PM	0	141	10	0	0	254	46	0	0	0	11	0	0	0	43	0	505	0	0	0	0
4:30 PM	0	170	12	0	0	241	52	0	0	0	11	0	0	0	35	0	521	0	0	0	0
4:35 PM	0	168	8	0	0	246	52	0	0	0	12	0	0	0	34	0	520	0	0	0	0
4:40 PM	0	139	12	0	0	225	42	0	0	0	34	0	0	0	29	0	481	0	0	0	0
4:45 PM	0	190	7	0	0	277	47	0	0	0	13	0	0	0	33	0	567	0	0	0	0
4:50 PM	0	162	11	0	0	270	36	0	0	0	11	0	0	0	27	0	517	0	0	0	0
4:55 PM	0	128	7	0	0	217	44	0	0	0	21	0	0	0	27	0	444	0	0	0	0
5:00 PM	0	169	9	0	0	271	37	0	0	0	10	0	0	0	31	0	527	0	0	0	0
5:05 PM	0	172	14	0	0	257	40	0	0	0	5	0	0	0	36	0	524	0	0	0	0
5:10 PM	0	172	11	0	0	235	41	0	0	0	16	0	0	0	40	0	515	0	0	0	0
5:15 PM	0	163	14	0	0	261	45	0	0	0	19	0	0	0	33	0	535	0	0	0	0
5:20 PM	0	190	14	0	0	248	37	0	0	0	12	0	0	0	20	0	521	0	0	0	0
5:25 PM	0	148	17	0	0	261	30	0	0	0	8	0	0	0	29	0	493	0	0	0	0
5:30 PM	0	115	10	0	0	238	39	0	0	0	13	0	0	0	27	0	442	0	0	0	0
5:35 PM	0	154	5	0	0	249	36	0	0	0	9	0	0	0	32	0	485	0	0	0	0
5:40 PM	0	167	15	0	0	215	36	0	0	0	10	0	0	0	17	0	460	0	0	0	0
5:45 PM	0	154	9	0	0	214	33	0	0	0	9	0	0	0	21	0	440	0	0	0	0
5:50 PM	0	165	8	0	0	252	36	0	0	0	5	0	0	0	22	0	488	0	0	0	0
5:55 PM	0	114	12	0	0	219	41	0	0	0	14	0	0	0	18	0	418	0	0	0	0
Total Survey	0	3,801	269	0	0	5,920	1,009	0	0	0	306	0	0	0	700	0	12,005	0	0	0	0

15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	495	40	0	0	737	152	0	0	0	36	0	0	0	98	0	1,558	0	0	0	0
4:15 PM	0	466	34	0	0	787	133	0	0	0	38	0	0	0	91	0	1,549	0	0	0	0
4:30 PM	0	477	32	0	0	712	146	0	0	0	57	0	0	0	98	0	1,522	0	0	0	0
4:45 PM	0	480	25	0	0	764	127	0	0	0	45	0	0	0	87	0	1,528	0	0	0	0
5:00 PM	0	513	34	0	0	763	118	0	0	0	31	0	0	0	107	0	1,566	0	0	0	0
5:15 PM	0	501	45	0	0	770	112	0	0	0	39	0	0	0	82	0	1,549	0	0	0	0
5:30 PM	0	436	30	0	0	702	111	0	0	0	32	0	0	0	76	0	1,387	0	0	0	0
5:45 PM	0	433	29	0	0	685	110	0	0	0	28	0	0	0	61	0	1,346	0	0	0	0
Total Survey	0	3,801	269	0	0	5,920	1,009	0	0	0	306	0	0	0	700	0	12,005	0	0	0	0

Peak Hour Summary

4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,083	3,221	5,304	0	3,587	2,336	5,923	0	166	532	698	0	378	125	503	0	6,214	0	0	0	0
%HV	2.0%	2.0%			2.4%	2.4%			1.2%	1.2%			3.2%	3.2%			2.3%				
PHF	0.94	0.94			0.96	0.96			0.70	0.70			0.84	0.84			0.97				

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	1,958	125	2,083	0	3,055	532	3,587	0	0	166	166	0	0	378	378	6,214
%HV	0.0%	1.9%	3.2%	2.0%	0.0%	2.2%	3.6%	2.4%	0.0%	0.0%	1.2%	1.2%	0.0%	0.0%	3.2%	3.2%	2.3%
PHF	0.00	0.94	0.89	0.94	0.00	0.96	0.89	0.96	0.00	0.00	0.70	0.70	0.00	0.00	0.84	0.84	0.97

Rolling Hour Summary

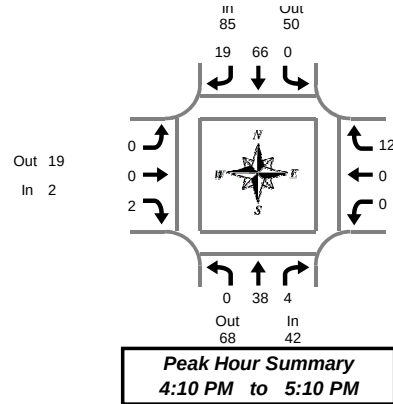
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	1,918	131	0	0	3,000	558	0	0	0	176	0	0	0	374	0	6,157	0	0	0	0
4:15 PM	0	1,936	125	0	0	3,026	524	0	0	0	171	0	0	0	383	0	6,165	0	0	0	0
4:30 PM	0	1,971	136	0	0	3,009	503	0	0	0	172	0	0	0	374	0	6,165	0	0	0	0
4:45 PM	0	1,930	134	0	0	2,999	468	0	0	0	147	0	0	0	352	0	6,030	0	0	0	0
5:00 PM	0	1,883	138	0	0	2,920	451	0	0	0	130	0	0	0	326	0	5,848	0	0	0	0

Heavy Vehicle Summary



Clay Carney
(503) 833-2740



Hwy 213 & Clackamas River Dr

Wednesday, January 25, 2017

4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	6	1	7	0	4	2	6	0	0	0	0	0	0	1	1	14
4:05 PM	0	6	1	7	0	9	1	10	0	0	0	0	0	0	5	5	22
4:10 PM	0	7	0	7	0	10	4	14	0	0	1	1	0	0	1	1	23
4:15 PM	0	5	0	5	0	7	1	8	0	0	1	1	0	0	0	0	14
4:20 PM	0	3	0	3	0	5	4	9	0	0	0	0	0	0	1	1	13
4:25 PM	0	1	0	1	0	7	2	9	0	0	0	0	0	0	2	2	12
4:30 PM	0	4	0	4	0	5	1	6	0	0	0	0	0	0	0	0	10
4:35 PM	0	3	0	3	0	7	1	8	0	0	0	0	0	0	1	1	12
4:40 PM	0	3	1	4	0	3	2	5	0	0	0	0	0	0	1	1	10
4:45 PM	0	2	1	3	0	2	1	3	0	0	0	0	0	0	3	3	9
4:50 PM	0	4	1	5	0	3	1	4	0	0	0	0	0	0	0	0	9
4:55 PM	0	1	0	1	0	7	1	8	0	0	0	0	0	0	1	1	10
5:00 PM	0	3	0	3	0	5	0	5	0	0	0	0	0	0	2	2	10
5:05 PM	0	2	1	3	0	5	1	6	0	0	0	0	0	0	0	0	9
5:10 PM	0	5	2	7	0	6	3	9	0	0	0	0	0	0	1	1	17
5:15 PM	0	4	0	4	0	5	1	6	0	0	0	0	0	0	1	1	11
5:20 PM	0	2	0	2	0	8	1	9	0	0	1	1	0	0	0	0	12
5:25 PM	0	2	0	2	0	5	1	6	0	0	0	0	0	0	2	2	10
5:30 PM	0	3	0	3	0	3	1	4	0	0	0	0	0	0	0	0	7
5:35 PM	0	5	0	5	0	4	1	5	0	0	0	0	0	0	1	1	11
5:40 PM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
5:45 PM	0	2	1	3	0	2	2	4	0	0	0	0	0	0	0	0	7
5:50 PM	0	3	0	3	0	5	0	5	0	0	2	2	0	0	1	1	11
5:55 PM	0	1	0	1	0	1	2	3	0	0	1	1	0	0	0	0	5
Total Survey	0	78	9	87	0	121	34	155	0	0	6	6	0	0	24	24	272

Heavy Vehicle 15-Minute Interval Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	19	2	21	0	23	7	30	0	0	1	1	0	0	7	7	59
4:15 PM	0	9	0	9	0	19	7	26	0	0	1	1	0	0	3	3	39
4:30 PM	0	10	1	11	0	15	4	19	0	0	0	0	0	0	2	2	32
4:45 PM	0	7	2	9	0	12	3	15	0	0	0	0	0	0	4	4	28
5:00 PM	0	10	3	13	0	16	4	20	0	0	0	0	0	0	3	3	36
5:15 PM	0	8	0	8	0	18	3	21	0	0	1	1	0	0	3	3	33
5:30 PM	0	9	0	9	0	10	2	12	0	0	0	0	0	0	1	1	22
5:45 PM	0	6	1	7	0	8	4	12	0	0	3	3	0	0	1	1	23
Total Survey	0	78	9	87	0	121	34	155	0	0	6	6	0	0	24	24	272

Heavy Vehicle Peak Hour Summary

4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	42	68	110	85	50	135	2	19	21	12	4	16	141
PHF	0.70			0.69			0.25			0.60			0.71

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	38	4	42	0	66	19	85	0	0	2	2	0	0	12	12	141
PHF	0.00	0.63	0.33	0.70	0.00	0.75	0.53	0.69	0.00	0.00	0.25	0.25	0.00	0.00	0.60	0.60	0.71

Heavy Vehicle Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	45	5	50	0	69	21	90	0	0	2	2	0	0	16	16	158
4:15 PM	0	36	6	42	0	62	18	80	0	0	1	1	0	0	12	12	135
4:30 PM	0	35	6	41	0	61	14	75	0	0	1	1	0	0	12	12	129
4:45 PM	0	34	5	39	0	56	12	68	0	0	1	1	0	0	11	11	119
5:00 PM	0	33	4	37	0	52	13	65	0	0	4	4	0	0	8	8	114

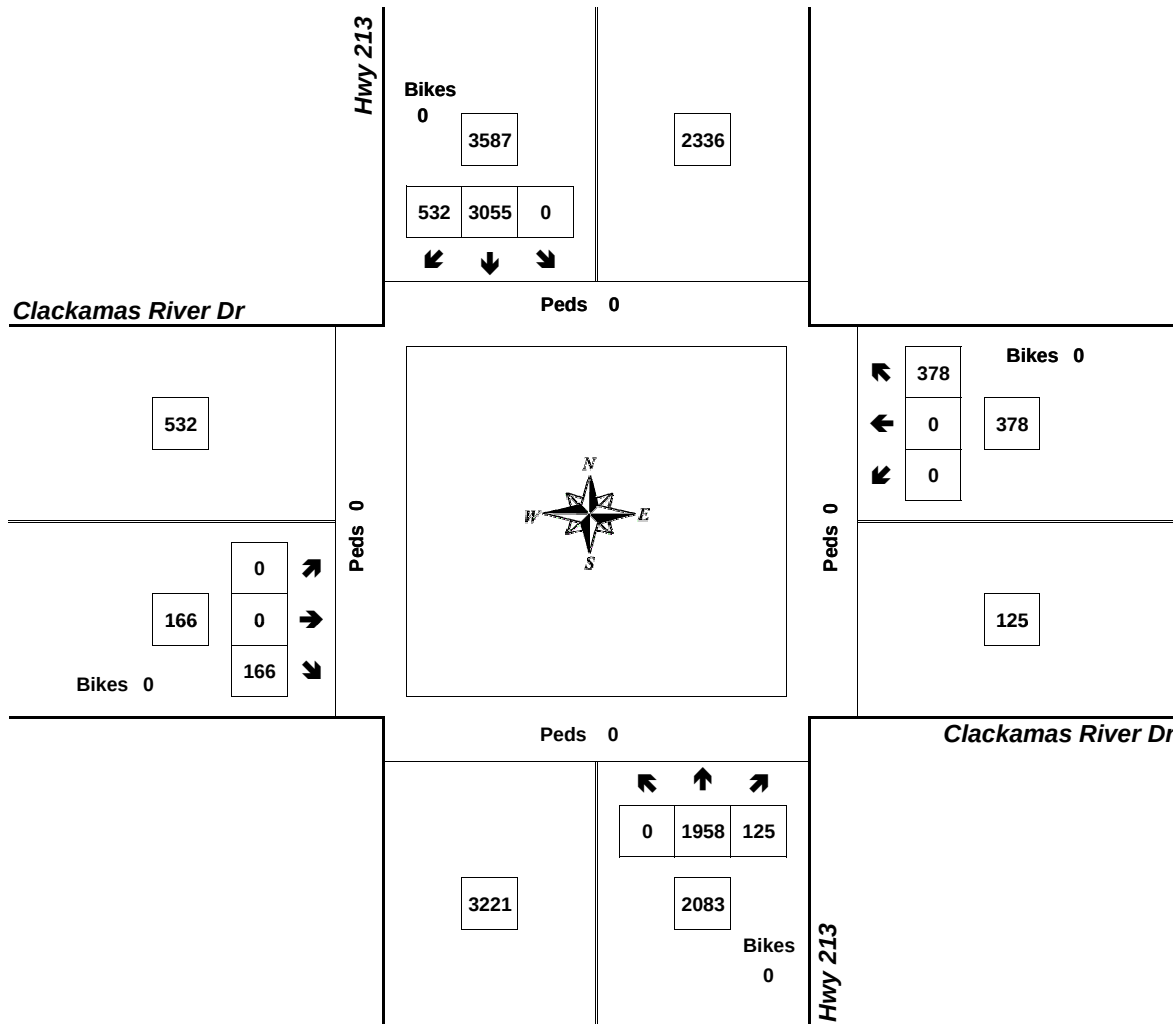
Peak Hour Summary



Clay Carney
(503) 833-2740

Hwy 213 & Clackamas River Dr

4:10 PM to 5:10 PM
Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.70	1.2%	166
WB	0.84	3.2%	378
NB	0.94	2.0%	2,083
SB	0.96	2.4%	3,587
Intersection	0.97	2.3%	6,214

Count Period: 4:00 PM to 6:00 PM



TRIP GENERATION CALCULATIONS

Land Use: Apartment
Land Use Code: 220
Variable: Dwelling Units
Variable Value: 131

AM PEAK HOUR

Trip Rate: 0.51

	Enter	Exit	Total
Directional Distribution	20%	80%	
Trip Ends	13	54	67

PM PEAK HOUR

Trip Rate: 0.62

	Enter	Exit	Total
Directional Distribution	65%	35%	
Trip Ends	53	28	81

WEEKDAY

Trip Rate: 6.65

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	436	436	872

SATURDAY

Trip Rate: 6.39

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	419	419	838

Source: TRIP GENERATION, Ninth Edition



TRIP GENERATION CALCULATIONS

Land Use: Hotel
Land Use Code: 310
Variable: Rooms
Variable Value: 99

AM PEAK HOUR

Trip Rate: 0.53

	Enter	Exit	Total
Directional Distribution	59%	41%	
Trip Ends	31	21	52

PM PEAK HOUR

Trip Rate: 0.6

	Enter	Exit	Total
Directional Distribution	51%	49%	
Trip Ends	30	29	59

WEEKDAY

Trip Rate: 8.17

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	404	404	808

SATURDAY

Trip Rate: 8.19

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	405	405	810

Source: TRIP GENERATION, Ninth Edition



TRIP GENERATION CALCULATIONS

Land Use: Shopping Center
Land Use Code: 820
Variable: 1,000 Sq Ft Gross Leasable Area
Variable Value: 9.5

AM PEAK HOUR

Trip Rate: 0.96

	Enter	Exit	Total
Directional Distribution	62%	38%	
Trip Ends	6	3	9

PM PEAK HOUR

Trip Rate: 3.71

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	17	18	35

WEEKDAY

Trip Rate: 42.7

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	203	203	406

SATURDAY

Trip Rate: 49.97

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	237	237	474

Source: TRIP GENERATION, Ninth Edition



TRIP GENERATION CALCULATIONS

Land Use: Coffee/Donut Shop without Drive-Through Window
Land Use Code: 936
Variable: 1000 Sq Ft Gross Floor Area
Variable Quantity: 2.5

AM PEAK HOUR

Trip Rate: 108.38

	Enter	Exit	Total
Directional Distribution	51%	49%	
Trip Ends	138	133	271

PM PEAK HOUR

Trip Rate: 40.75

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	51	51	102

SATURDAY PEAK

Trip Rate: 65.96

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	79	86	165

Source: TRIP GENERATION, Ninth Edition

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	Abernethy Place Mixed-Use Development	Organization:	Lancaster Engineering		
Project Location:	Oregon City, OR	Performed By:	Daniel Stumpf, EI		
Scenario Description:	Background plus Site Conditions	Date:	18-Apr-17		
Analysis Year:	2022	Checked By:			
Analysis Period:	AM Street Peak Hour	Date:			

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	9,500	Sq.Ft. GFA	9	6	3
Restaurant	936	2,500	Sq.Ft. GFA	271	138	133
Cinema/Entertainment				0		
Residential	220	131	Dwelling Units	67	13	54
Hotel	310	99	Rooms	52	31	21
All Other Land Uses ²				0		
Total				399	188	211

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.25	0%	0%	1.25	0%	0%
Retail						
Restaurant						
Cinema/Entertainment						
Residential	1.25	0%	0%	1.25	0%	0%
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	14	0		0
Hotel	0	0	2	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	416	191	225
Internal Capture Percentage	9%	10%	8%
External Vehicle-Trips ³	364	169	195
External Transit-Trips ⁴	0	0	0
External Non-Motorized Trips ⁴	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	17%	0%
Restaurant	12%	2%
Cinema/Entertainment	N/A	N/A
Residential	6%	22%
Hotel	3%	10%

¹ Land Use Codes (LUCs) from <i>Trip Generation Informational Report</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
³ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
⁴ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
<i>Estimation Tool Developed by the Texas Transportation Institute</i>

Project Name:	Abernethy Place Mixed-Use Development
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.25	0	0	1.25	0	0
Retail	1.00	6	6	1.00	3	3
Restaurant	1.00	138	138	1.00	133	133
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.25	13	16	1.25	54	68
Hotel	1.00	31	31	1.00	21	21

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		0	0	0	0
Restaurant	41	19		0	5	4
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	14	0		0
Hotel	16	3	2	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	32	0	0	0
Retail	0		69	0	0	0
Restaurant	0	0		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	28	0		0
Hotel	0	0	8	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	1	5	6	5	0	0
Restaurant	16	122	138	122	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	15	16	12	0	0
Hotel	1	30	31	30	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	0	3	3	3	0	0
Restaurant	2	131	133	131	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	15	53	68	42	0	0
Hotel	2	19	21	19	0	0
All Other Land Uses ³	0	0	0	0	0	0

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

²Person-Trips

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

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

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	Abernethy Place Mixed-Use Development	Organization:	Lancaster Engineering		
Project Location:	Oregon City, OR	Performed By:	Daniel Stumpf, EI		
Scenario Description:	Background plus Site Conditions	Date:	18-Apr-17		
Analysis Year:	2022	Checked By:			
Analysis Period:	PM Street Peak Hour	Date:			

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	9,500	Sq.Ft. GFA	35	17	18
Restaurant	936	2,500	Sq.Ft. GFA	102	51	51
Cinema/Entertainment				0		
Residential	220	131	Dwelling Units	81	53	28
Hotel	310	99	Rooms	59	30	29
All Other Land Uses ²				0		
Total				277	151	126

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.25	0%	0%	1.25	0%	0%
Retail						
Restaurant						
Cinema/Entertainment						
Residential	1.25	0%	0%	1.25	0%	0%
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0		0	
Retail					0	
Restaurant					0	
Cinema/Entertainment					0	
Residential		0	0			
Hotel					600	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		5	0	5	1
Restaurant	0	9		0	9	4
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	7	0		1
Hotel	0	0	3	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	297	164	133
Internal Capture Percentage	31%	28%	35%
External Vehicle-Trips ³	190	108	82
External Transit-Trips ⁴	0	0	0
External Non-Motorized Trips ⁴	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	65%	61%
Restaurant	29%	43%
Cinema/Entertainment	N/A	N/A
Residential	21%	29%
Hotel	20%	10%

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

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

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

⁴Person-Trips

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

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Abernethy Place Mixed-Use Development
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.25	0	0	1.25	0	0
Retail	1.00	17	17	1.00	18	18
Restaurant	1.00	51	51	1.00	51	51
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.25	53	66	1.25	28	35
Hotel	1.00	30	30	1.00	29	29

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		5	1	5	1
Restaurant	2	21		4	9	4
Cinema/Entertainment	0	0	0		0	0
Residential	1	15	7	0		1
Hotel	0	5	20	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	1	0	3	0
Retail	0		15	0	30	5
Restaurant	0	9		0	11	21
Cinema/Entertainment	0	1	2		3	0
Residential	0	2	7	0		4
Hotel	0	0	3	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	11	6	17	6	0	0
Restaurant	15	36	51	36	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	14	52	66	42	0	0
Hotel	6	24	30	24	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	11	7	18	7	0	0
Restaurant	22	29	51	29	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	25	35	20	0	0
Hotel	3	26	29	26	0	0
All Other Land Uses ³	0	0	0	0	0	0

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

²Person-Trips

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

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

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	42.0%
	To Restaurant	20.0%	21.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development

Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	10.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	14.0%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

*Library Copy***ATTACHMENT A**

Redmond Elks
Starbucks Trip Generation Summary
TENW Project No. 2025

Starbucks Trip Generation Summary

AM PEAK HOUR TRIP GENERATION RATE (Sit-Down + Drive-Thru)							
Location¹	Square Feet	AM Peak Hour Trips²			PM Peak Hour Trip Rates		
		Entering	Exiting	Total	Entering	Exiting	Total
Lynnwood	1,798	89	89	178	49.5	49.5	99
Kenmore	2,782	59	59	118	21.21	21.21	42.42
Federal Way	1,983	53	53	106	26.72	26.73	53.45
Puyallup	1,820	73	73	146	40.11	40.11	80.22
Bonney Lake	1,800	48	48	96	26.66	26.67	53.33
Average =					32.84	32.84	65.68

PERCENT PASS-BY/DIVERTED LINK TRIPS				
Location¹	Total Survey²	Primary Trips²	Percent Pass- Percent Primary by/Diverted Link	
			Trips	Trips
Lynnwood	141	30	21%	79%
Kenmore	100	12	12%	88%
Federal Way	98	25	26%	74%
Puyallup	116	19	16%	84%
Bonney Lake	16	2	13%	87%
Average =			82%	

Notes

1. All Starbucks locations included drive through windows.
2. Data collected by Transportation Planning & Engineering 11/99-12/99.

AM PEAK HOUR TRIP GENERATION RATE (Sit Down Area)							
Location¹	Square Feet	AM Peak Hour Trips²			AM Peak Hour Trip Rates		
		Entering	Exiting	Total	Entering	Exiting	Total
Lynnwood	1,798	40	40	80	22.24	22.25	44.49
Kenmore	2,782	20	20	40	7.19	7.19	14.38
Federal Way	1,983	22	22	44	11.09	11.1	22.19
Puyallup	1,820	28	28	56	15.38	15.39	30.77
Bonney Lake	1,800	24	24	48	13.33	13.34	26.67
Average =					13.85	13.85	27.70

AM PEAK HOUR TRIP GENERATION RATE (Drive-Thru)							
Location¹	Square Feet	AM Peak Hour Trips²			AM Peak Hour Trip Rates		
		Entering	Exiting	Total	Entering	Exiting	Total
Lynnwood	1,798	49	49	98	27.25	27.26	54.51
Kenmore	2,782	39	39	78	14.02	14.02	28.04
Federal Way	1,983	31	31	62	15.63	15.64	31.27
Puyallup	1,820	45	45	90	24.72	24.73	49.45
Bonney Lake	1,800	24	24	48	13.33	13.34	26.67
Average =					18.99	19.00	37.99

Notes

1. All Starbucks locations included drive through windows.
2. Data collected by Transportation Planning & Engineering 11/99-12/99.

ATTACHMENT A

Redmond Elks
Starbucks Trip Generation Summary
TENW Project No. 2025

Starbucks Trip Generation Summary

PM PEAK HOUR TRIP GENERATION RATE (Sit-Down + Drive-Thru)							
Location ¹	Square Feet	PM Peak Hour Trips ²			PM Peak Hour Trip Rates		
		Entering	Exiting	Total	Entering	Exiting	Total
Lynnwood	1,798	47	47	94	26.14	26.14	52.28
Kenmore	2,782	24	24	48	8.62	8.63	17.25
Federal Way	1,983	17	17	34	8.57	8.58	17.15
Puyallup	1,820	44	44	88	24.17	24.18	48.35
Bonney Lake	1,800	31	31	62	17.22	17.22	34.44
Average =					16.94	16.95	33.89

PERCENT PASS-BY/DIVERTED LINK TRIPS				
Location ¹	Total Survey ²	Primary Trips ²	Percent Pass- Percent Primary by/Diverted Link	
			Trips	Trips
Lynnwood	64	12	19%	81%
Kenmore	41	13	32%	68%
Federal Way	33	7	21%	79%
Puyallup	62	9	15%	85%
Bonney Lake	24	11	46%	54%
Average =			73%	

Notes

1. All Starbucks locations included drive through windows.
2. Data collected by Transportation Planning & Engineering 11/99-12/99.

PM PEAK HOUR TRIP GENERATION RATE (Sit Down Area)							
Location ¹	Square Feet	PM Peak Hour Trips ²			PM Peak Hour Trip Rates		
		Entering	Exiting	Total	Entering	Exiting	Total
Lynnwood	1,798	28	28	56	15.57	15.58	31.15
Kenmore	2,782	14	14	28	5.03	5.03	10.06
Federal Way	1,983	5	5	10	2.52	2.52	5.04
Puyallup	1,820	22	22	44	12.09	12.09	24.18
Bonney Lake	1,800	23	23	46	12.78	12.78	25.56
Average =					9.60	9.60	19.20

PM PEAK HOUR TRIP GENERATION RATE (Drive-Thru)							
Location ¹	Square Feet	PM Peak Hour Trips ²			PM Peak Hour Trip Rates		
		Entering	Exiting	Total	Entering	Exiting	Total
Lynnwood	1,798	19	19	38	10.56	10.57	21.13
Kenmore	2,782	10	10	20	3.59	3.6	7.19
Federal Way	1,983	12	12	24	6.05	6.05	12.1
Puyallup	1,820	22	22	44	12.09	12.09	24.18
Bonney Lake	1,800	8	8	16	4.44	4.45	8.89
Average =					7.35	7.35	14.70

Notes

1. All Starbucks locations included drive through windows.
2. Data collected by Transportation Planning & Engineering 11/99-12/99.



LEVEL OF SERVICE

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

Level of service A: Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

Level of service B: Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

Level of service C: Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

Level of service E: Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

Level of service F: Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

*LEVEL OF SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

*LEVEL OF SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

HCM Signalized Intersection Capacity Analysis

1: OR-99E & I-205 SB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	373	224	1415	271	599	918
Future Volume (vph)	373	224	1415	271	599	918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	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)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	405	243	1538	295	651	998
RTOR Reduction (vph)	0	0	0	207	0	0
Lane Group Flow (vph)	405	243	1538	89	651	998
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.7	49.5	27.0	27.0	33.8	65.3
Effective Green, g (s)	15.7	49.5	27.0	27.0	33.8	65.3
Actuated g/C Ratio	0.17	0.55	0.30	0.30	0.38	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	570	905	1496	453	657	3653
v/s Ratio Prot	c0.12	0.10	c0.31		c0.37	0.20
v/s Ratio Perm		0.06		0.06		
v/c Ratio	0.71	0.27	1.03	0.20	0.99	0.27
Uniform Delay, d1	35.0	10.7	31.5	23.4	27.9	4.2
Progression Factor	1.00	1.00	0.93	2.14	1.00	1.00
Incremental Delay, d2	4.2	0.2	28.7	0.8	32.7	0.2
Delay (s)	39.2	10.8	57.9	50.9	60.6	4.4
Level of Service	D	B	E	D	E	A
Approach Delay (s)	28.5		56.8			26.6
Approach LOS	C		E			C
Intersection Summary						
HCM 2000 Control Delay			40.3		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			82.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: OR-99E & I-205 NB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	143	402	1280	880	242	1058
Future Volume (vph)	143	402	1280	880	242	1058
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	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)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	423	1347	926	255	1114
RTOR Reduction (vph)	0	259	0	319	0	0
Lane Group Flow (vph)	151	164	1347	607	255	1114
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	13.9	13.9	46.4	46.4	16.2	67.1
Effective Green, g (s)	13.9	13.9	46.4	46.4	16.2	67.1
Actuated g/C Ratio	0.15	0.15	0.52	0.52	0.18	0.75
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	265	237	2546	771	309	3683
v/s Ratio Prot	0.09		0.27		0.15	0.23
v/s Ratio Perm		0.11		0.41		
v/c Ratio	0.57	0.69	0.53	0.79	0.83	0.30
Uniform Delay, d1	35.3	36.0	14.5	17.8	35.5	3.8
Progression Factor	1.00	1.00	1.00	1.00	0.81	1.38
Incremental Delay, d2	2.8	8.5	0.8	8.0	15.5	0.2
Delay (s)	38.1	44.5	15.3	25.7	44.3	5.4
Level of Service	D	D	B	C	D	A
Approach Delay (s)	42.8		19.6			12.6
Approach LOS	D		B			B
Intersection Summary						
HCM 2000 Control Delay			20.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.78			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			75.7%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

3: OR-99E & 15th Street

04/18/2017

						
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (veh/h)	1950	12	0	1229	0	208
Future Volume (Veh/h)	1950	12	0	1229	0	208
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2097	13	0	1322	0	224
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.57		0.61	0.57
vC, conflicting volume			2110		2544	1055
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1445		1580	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	64
cM capacity (veh/h)			255		61	621
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1398	712	441	441	441	224
Volume Left	0	0	0	0	0	0
Volume Right	0	13	0	0	0	224
cSH	1700	1700	1700	1700	1700	621
Volume to Capacity	0.82	0.42	0.26	0.26	0.26	0.36
Queue Length 95th (ft)	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	14.0
Lane LOS						B
Approach Delay (s)	0.0		0.0			14.0
Approach LOS						B
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			73.8%		ICU Level of Service	D
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.9					
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑↱			↑↑↑↑		↱↑
Traffic Vol, veh/h	1950	12	0	1229	0	208
Future Vol, veh/h	1950	12	0	1229	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2097	13	0	1322	0	224
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1055
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	350
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	350
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	NB		SB		NW	
HCM Control Delay, s	0		0		31.8	
HCM LOS					D	
Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT		
Capacity (veh/h)	-	-	350	-		
HCM Lane V/C Ratio	-	-	0.639	-		
HCM Control Delay (s)	-	-	31.8	-		
HCM Lane LOS	-	-	D	-		
HCM 95th %tile Q(veh)	-	-	4.2	-		

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↙	↑↑	↘	↗
Traffic Volume (vph)	1478	22	293	932	71	465
Future Volume (vph)	1478	22	293	932	71	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3398		1703	3406	1736	1553
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3398		125	3406	1736	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1572	23	312	991	76	495
RTOR Reduction (vph)	1	0	0	0	0	10
Lane Group Flow (vph)	1594	0	312	991	76	485
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	52.8		82.5	82.5	8.5	33.7
Effective Green, g (s)	52.8		82.5	82.5	8.5	33.7
Actuated g/C Ratio	0.53		0.82	0.82	0.08	0.34
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1794		500	2809	147	593
v/s Ratio Prot	c0.47		0.16	0.29	0.04	c0.21
v/s Ratio Perm			0.36			0.11
v/c Ratio	0.89		0.62	0.35	0.52	0.82
Uniform Delay, d1	21.0		25.1	2.2	43.8	30.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0		2.4	0.1	3.1	8.6
Delay (s)	28.0		27.5	2.2	46.8	38.9
Level of Service	C		C	A	D	D
Approach Delay (s)	28.0			8.3	40.0	
Approach LOS	C			A	D	
Intersection Summary						
HCM 2000 Control Delay		22.6		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.90				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		13.5
Intersection Capacity Utilization		77.8%		ICU Level of Service		D
Analysis Period (min)		15				
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	20	265	26	117	521	11	5	23	53	0	11	10
Future Volume (Veh/h)	20	265	26	117	521	11	5	23	53	0	11	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	285	28	126	560	12	5	25	57	0	12	11
Pedestrians		2			10			4				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			0				
Right turn flare (veh)									5			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.94						0.94	0.94		0.94	0.94	0.94
vC, conflicting volume	572			317			1184	1171	313	1198	1179	568
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			317			1165	1151	313	1180	1160	512
tC, single (s)	4.1			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	98			90			96	84	92	100	93	98
cM capacity (veh/h)	980			1233			130	158	702	115	163	533
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1							
Volume Total	22	313	698	87	23							
Volume Left	22	0	126	5	0							
Volume Right	0	28	12	57	11							
cSH	980	1700	1233	446	244							
Volume to Capacity	0.02	0.18	0.10	0.20	0.09							
Queue Length 95th (ft)	2	0	9	18	8							
Control Delay (s)	8.8	0.0	2.5	18.7	21.3							
Lane LOS	A		A	C	C							
Approach Delay (s)	0.6		2.5	18.7	21.3							
Approach LOS				C	C							
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			67.8%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM 2010 TWSC
5: Main Street & 14th Street

04/18/2017

Intersection												
Int Delay, s/veh	3											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	20	265	26	117	521	11	5	23	53	0	11	10
Future Vol, veh/h	20	265	26	117	521	11	5	23	53	0	11	10
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	22	285	28	126	560	12	5	25	57	0	12	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	317	0	0	1177	1170	313	1182	1178	568
Stage 1	-	-	-	-	-	-	346	346	-	818	818	-
Stage 2	-	-	-	-	-	-	831	824	-	364	360	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	991	-	-	1237	-	-	163	187	711	168	192	526
Stage 1	-	-	-	-	-	-	655	623	-	373	393	-
Stage 2	-	-	-	-	-	-	354	378	-	659	630	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	989	-	-	1225	-	-	130	155	702	117	159	525
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	155	-	117	159	-
Stage 1	-	-	-	-	-	-	638	607	-	365	334	-
Stage 2	-	-	-	-	-	-	283	321	-	563	614	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.6	1.5	19	21.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	150	702	1225	-	-	989	-	- 238
HCM Lane V/C Ratio	0.201	0.081	0.103	-	-	0.022	-	- 0.095
HCM Control Delay (s)	34.9	10.6	8.3	0	-	8.7	-	- 21.7
HCM Lane LOS	D	B	A	A	-	A	-	- C
HCM 95th %tile Q(veh)	0.7	0.3	0.3	-	-	0.1	-	- 0.3

HCM Signalized Intersection Capacity Analysis

6: Washington Street & 7th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	322	45	0	353	280	136	254	7	154	126	44
Future Volume (vph)	0	322	45	0	353	280	136	254	7	154	126	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		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		1.00	0.96	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881	1565		1863	1539	1736	1819		1703	1712	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1881	1565		1863	1539	1736	1819		1703	1712	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	379	53	0	415	329	160	299	8	181	148	52
RTOR Reduction (vph)	0	0	37	0	0	227	0	1	0	0	19	0
Lane Group Flow (vph)	0	379	16	0	415	102	160	306	0	181	181	0
Confl. Peds. (#/hr)	5		1	1		5	2		4	4		2
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	4%	4%	4%	6%	6%	6%
Turn Type		NA	Perm		NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases			6			2						
Actuated Green, G (s)		18.0	18.0		18.0	18.0	14.5	14.5		11.9	11.9	
Effective Green, g (s)		18.0	18.0		18.0	18.0	14.5	14.5		11.9	11.9	
Actuated g/C Ratio		0.31	0.31		0.31	0.31	0.25	0.25		0.21	0.21	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		584	486		579	478	434	455		350	351	
v/s Ratio Prot		0.20			c0.22		0.09	c0.17		c0.11	0.11	
v/s Ratio Perm			0.01			0.07						
v/c Ratio		0.65	0.03		0.72	0.21	0.37	0.67		0.52	0.52	
Uniform Delay, d1		17.2	13.9		17.7	14.7	17.9	19.6		20.4	20.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.5	0.0		4.2	0.2	0.5	3.9		1.3	1.3	
Delay (s)		19.7	13.9		21.9	15.0	18.5	23.4		21.7	21.7	
Level of Service		B	B		C	B	B	C		C	C	
Approach Delay (s)		19.0			18.8			21.7			21.7	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			20.1									
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			57.9							13.5		
Intersection Capacity Utilization			52.3%							A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Washington Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	170	32	106	3	37	3	293	188	7	1	260	276
Future Volume (vph)	170	32	106	3	37	3	293	188	7	1	260	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1508		1838		1752	1833		1716	1646	
Flt Permitted		0.73	1.00		0.98		0.17	1.00		0.62	1.00	
Satd. Flow (perm)		1324	1508		1810		309	1833		1119	1646	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	36	120	3	42	3	333	214	8	1	295	314
RTOR Reduction (vph)	0	0	94	0	2	0	0	1	0	0	43	0
Lane Group Flow (vph)	0	229	26	0	46	0	333	221	0	1	566	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		17.2	17.2		17.2		54.3	48.9		35.0	34.1	
Effective Green, g (s)		17.2	17.2		17.2		54.3	48.9		35.0	34.1	
Actuated g/C Ratio		0.21	0.21		0.21		0.67	0.61		0.43	0.42	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		282	322		386		489	1113		493	697	
v/s Ratio Prot							c0.13	0.12		0.00	c0.34	
v/s Ratio Perm		c0.17	0.02		0.03		0.33			0.00		
v/c Ratio		0.81	0.08		0.12		0.68	0.20		0.00	0.81	
Uniform Delay, d1		30.1	25.3		25.5		12.4	7.1		12.9	20.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.1	0.1		0.1		3.9	0.1		0.0	7.1	
Delay (s)		46.2	25.4		25.7		16.2	7.1		12.9	27.5	
Level of Service		D	C		C		B	A		B	C	
Approach Delay (s)		39.1			25.7			12.6			27.5	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay		24.7										
HCM 2000 Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		80.5								13.5		
Intersection Capacity Utilization		76.0%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Washington Street & 15th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	13	14	13	10	64	31	25	262	85	49	500	194
Future Volume (vph)	13	14	13	10	64	31	25	262	85	49	500	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1478			1669		1703	1717		1735	1740	
Flt Permitted		0.91			0.97		0.25	1.00		0.48	1.00	
Satd. Flow (perm)		1368			1621		442	1717		874	1740	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	15	16	15	11	72	35	28	294	96	55	562	218
RTOR Reduction (vph)	0	13	0	0	18	0	0	13	0	0	15	0
Lane Group Flow (vph)	0	33	0	0	100	0	28	377	0	55	765	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.7			7.7		35.5	34.1		38.3	35.5	
Effective Green, g (s)		7.7			7.7		35.5	34.1		38.3	35.5	
Actuated g/C Ratio		0.13			0.13		0.61	0.59		0.66	0.61	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		181			214		300	1007		617	1063	
v/s Ratio Prot							0.00	0.22		c0.00	c0.44	
v/s Ratio Perm		0.02			c0.06		0.05			0.05		
v/c Ratio		0.18			0.47		0.09	0.37		0.09	0.72	
Uniform Delay, d1		22.4			23.3		5.6	6.4		3.6	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			1.6		0.1	0.2		0.1	2.4	
Delay (s)		22.9			24.9		5.8	6.6		3.7	10.2	
Level of Service		C			C		A	A		A	B	
Approach Delay (s)		22.9			24.9			6.5			9.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		58.1			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		54.7%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Washington Street & Abernethy Road

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	1	0	387	1	27	1	150	144	15	365	0
Future Volume (vph)	0	1	0	387	1	27	1	150	144	15	365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1900		1717	1547		1700	1792	1491	1734	1827	
Flt Permitted		1.00		0.76	1.00		0.37	1.00	1.00	0.65	1.00	
Satd. Flow (perm)		1900		1369	1547		654	1792	1491	1181	1827	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	1	0	450	1	31	1	174	167	17	424	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	109	0	0	0
Lane Group Flow (vph)	0	1	0	450	15	0	1	174	58	17	424	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type		NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4				8
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		20.0		20.0	20.0		15.3	15.3	15.3	15.3	15.3	
Effective Green, g (s)		20.0		20.0	20.0		15.3	15.3	15.3	15.3	15.3	
Actuated g/C Ratio		0.45		0.45	0.45		0.35	0.35	0.35	0.35	0.35	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		857		618	698		225	618	514	407	630	
v/s Ratio Prot		0.00			0.01			0.10			c0.23	
v/s Ratio Perm				c0.33			0.00		0.04	0.01		
v/c Ratio		0.00		0.73	0.02		0.00	0.28	0.11	0.04	0.67	
Uniform Delay, d1		6.7		9.9	6.7		9.5	10.5	9.9	9.6	12.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		4.3	0.0		0.0	0.3	0.1	0.0	2.8	
Delay (s)		6.7		14.2	6.7		9.5	10.8	10.0	9.7	15.2	
Level of Service		A		B	A		A	B	A	A	B	
Approach Delay (s)		6.7			13.7			10.4			15.0	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			44.3			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			54.8%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

11: Washington Street & Amtrak Station Access

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	4	0	6	1	0	0	23	151	3	2	373	16
Future Volume (Veh/h)	4	0	6	1	0	0	23	151	3	2	373	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	7	1	0	0	25	164	3	2	405	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								691				
pX, platoon unblocked												
vC, conflicting volume	632	634	414	632	642	166	422			167		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	632	634	414	632	642	166	422			167		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	100	100	100	98			100		
cM capacity (veh/h)	386	387	639	382	383	879	1137			1411		
Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2						
Volume Total	11	1	25	167	2	422						
Volume Left	4	1	25	0	2	0						
Volume Right	7	0	0	3	0	17						
cSH	516	382	1137	1700	1411	1700						
Volume to Capacity	0.02	0.00	0.02	0.10	0.00	0.25						
Queue Length 95th (ft)	2	0	2	0	0	0						
Control Delay (s)	12.1	14.4	8.2	0.0	7.6	0.0						
Lane LOS	B	B	A		A							
Approach Delay (s)	12.1	14.4	1.1		0.0							
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			30.6%		ICU Level of Service		A					
Analysis Period (min)			15									

HCM 2010 TWSC
11: Washington Street & Amtrak Station Access

04/18/2017

Intersection												
Int Delay, s/veh	0.6											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	6	1	0	0	23	151	3	2	373	16
Future Vol, veh/h	4	0	6	1	0	0	23	151	3	2	373	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	7	1	0	0	25	164	3	2	405	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	634	635	414	638	643	166	423	0	0	167	0	0
Stage 1	418	418	-	216	216	-	-	-	-	-	-	-
Stage 2	216	217	-	422	427	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	392	396	638	389	392	878	1136	-	-	1411	-	-
Stage 1	612	591	-	786	724	-	-	-	-	-	-	-
Stage 2	786	723	-	609	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	385	387	638	378	383	878	1136	-	-	1411	-	-
Mov Cap-2 Maneuver	385	387	-	378	383	-	-	-	-	-	-	-
Stage 1	599	590	-	769	708	-	-	-	-	-	-	-
Stage 2	769	707	-	602	584	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	12.3	14.6	1.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1136	-	-	378	505	1411	-
HCM Lane V/C Ratio	0.022	-	-	0.003	0.022	0.002	-
HCM Control Delay (s)	8.2	-	-	14.6	12.3	7.6	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.1	0	-

HCM Signalized Intersection Capacity Analysis

12: Washington Street & Praire Schooner Way

04/18/2017



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	277	150	226	38	65	232
Future Volume (vph)	277	150	226	38	65	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3155	1455	3126		1736	3471
Flt Permitted	0.95	1.00	1.00		0.39	1.00
Satd. Flow (perm)	3155	1455	3126		721	3471
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	308	167	251	42	72	258
RTOR Reduction (vph)	0	105	25	0	0	0
Lane Group Flow (vph)	308	62	268	0	72	258
Heavy Vehicles (%)	11%	11%	13%	13%	4%	4%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.0	13.9	10.0		19.4	19.4
Effective Green, g (s)	9.0	13.9	10.0		19.4	19.4
Actuated g/C Ratio	0.24	0.37	0.27		0.52	0.52
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	759	715	835		506	1800
v/s Ratio Prot	c0.10	0.01	c0.09		0.02	c0.07
v/s Ratio Perm		0.03			0.06	
v/c Ratio	0.41	0.09	0.32		0.14	0.14
Uniform Delay, d1	11.9	7.6	11.0		4.8	4.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.2		0.1	0.0
Delay (s)	12.3	7.7	11.2		4.9	4.7
Level of Service	B	A	B		A	A
Approach Delay (s)	10.7		11.2			4.8
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	37.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

13: Washington Street & Clackamas River Drive

04/18/2017



Movement	NWL	NWR	NET	NER	SWL	SWT
Right Turn Channelized				MOYes		
Traffic Volume (veh/h)	64	61	159	188	255	238
Future Volume (veh/h)	64	61	159	188	255	238
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	73	69	181	214	290	270
Approach Volume (veh/h)	142		181			560
Crossing Volume (veh/h)	181		290			73
High Capacity (veh/h)	1202		1103			1308
High v/c (veh/h)	0.12		0.16			0.43
Low Capacity (veh/h)	995		906			1091
Low v/c (veh/h)	0.14		0.20			0.51
Intersection Summary						
Maximum v/c High			0.43			
Maximum v/c Low			0.51			
Intersection Capacity Utilization			52.3%		ICU Level of Service	A

HCM 2010 Roundabout
13: Washington Street & Clackamas River Drive

04/18/2017

Intersection				
Intersection Delay, s/veh	7.4			
Intersection LOS	A			
Approach	NW	NE	SW	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	142	395	560	
Demand Flow Rate, veh/h	154	434	577	
Vehicles Circulating, veh/h	199	299	79	
Vehicles Exiting, veh/h	299	357	274	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	5.9	3.4	10.6	
Approach LOS	A	A	B	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	T	R	LT
Assumed Moves	LR	T	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	154	199	235	577
Cap Entry Lane, veh/h	926	838	2090	1044
Entry HV Adj Factor	0.922	0.909	0.909	0.970
Flow Entry, veh/h	142	181	214	560
Cap Entry, veh/h	854	762	1900	1013
V/C Ratio	0.166	0.237	0.113	0.553
Control Delay, s/veh	5.9	7.4	0.0	10.6
LOS	A	A	A	B
95th %tile Queue, veh	1	1	0	3

HCM Signalized Intersection Capacity Analysis

14: Praire Schooner Way/Clackamas River Drive

04/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	93	0	0	417	0	2415	138	0	1714	427
Future Volume (vph)	0	0	93	0	0	417	0	2415	138	0	1714	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
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	1.00
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)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	96	0	0	430	0	2490	142	0	1767	440
RTOR Reduction (vph)	0	0	24	0	0	19	0	0	54	0	0	168
Lane Group Flow (vph)	0	0	72	0	0	411	0	2490	88	0	1767	272
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)			14.5			14.5		38.2	38.2		38.2	38.2
Effective Green, g (s)			14.5			14.5		38.2	38.2		38.2	38.2
Actuated g/C Ratio			0.24			0.24		0.62	0.62		0.62	0.62
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			648			596		3088	941		3029	943
v/s Ratio Prot								c0.50			0.36	
v/s Ratio Perm			0.03			c0.16			0.06			0.18
v/c Ratio			0.11			0.69		0.81	0.09		0.58	0.29
Uniform Delay, d1			18.5			21.5		8.9	4.8		7.0	5.5
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.1			3.3		1.6	0.0		0.3	0.2
Delay (s)			18.6			24.9		10.6	4.8		7.3	5.6
Level of Service			B			C		B	A		A	A
Approach Delay (s)		18.6			24.9			10.2			7.0	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.2			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			61.7			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			68.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: OR-99E & I-205 SB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↔↔↔	↔	↔	↔↔↔
Traffic Volume (vph)	819	297	1255	219	463	1647
Future Volume (vph)	819	297	1255	219	463	1647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	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	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	844	306	1294	226	477	1698
RTOR Reduction (vph)	0	1	0	159	0	0
Lane Group Flow (vph)	844	305	1294	67	477	1698
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.1	50.0	26.5	26.5	25.9	56.9
Effective Green, g (s)	24.1	50.0	26.5	26.5	25.9	56.9
Actuated g/C Ratio	0.27	0.56	0.29	0.29	0.29	0.63
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	910	949	1497	449	509	3214
v/s Ratio Prot	c0.25	0.09	c0.25		c0.27	0.33
v/s Ratio Perm		0.10		0.04		
v/c Ratio	0.93	0.32	0.86	0.15	0.94	0.53
Uniform Delay, d1	32.1	10.8	30.0	23.4	31.3	9.1
Progression Factor	1.00	1.00	0.84	1.85	1.00	1.00
Incremental Delay, d2	15.1	0.2	6.0	0.6	24.9	0.6
Delay (s)	47.2	11.0	31.1	44.0	56.2	9.8
Level of Service	D	B	C	D	E	A
Approach Delay (s)	37.6		33.0			19.9
Approach LOS	D		C			B
Intersection Summary						
HCM 2000 Control Delay			28.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.91			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			84.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: OR-99E & I-205 NB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			  
Traffic Volume (vph)	115	412	1112	763	391	2030
Future Volume (vph)	115	412	1112	763	391	2030
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	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)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	117	420	1135	779	399	2071
RTOR Reduction (vph)	0	365	0	305	0	0
Lane Group Flow (vph)	117	55	1135	474	399	2071
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.7	11.7	40.6	40.6	24.2	69.3
Effective Green, g (s)	11.7	11.7	40.6	40.6	24.2	69.3
Actuated g/C Ratio	0.13	0.13	0.45	0.45	0.27	0.77
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	205	2271	681	475	3915
v/s Ratio Prot	c0.07		0.23		c0.23	0.41
v/s Ratio Perm		0.03		c0.31		
v/c Ratio	0.51	0.27	0.50	0.70	0.84	0.53
Uniform Delay, d1	36.5	35.3	17.5	19.8	31.1	4.0
Progression Factor	1.00	1.00	1.00	1.00	1.01	0.72
Incremental Delay, d2	1.8	0.7	0.8	5.8	9.6	0.4
Delay (s)	38.2	36.0	18.3	25.6	40.9	3.3
Level of Service	D	D	B	C	D	A
Approach Delay (s)	36.5		21.3			9.4
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.71			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			77.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

3: OR-99E & 15th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (veh/h)	1654	12	0	2175	0	208
Future Volume (Veh/h)	1654	12	0	2175	0	208
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1741	13	0	2289	0	219
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.69		0.77	0.69
vC, conflicting volume			1757		2514	880
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1204		1096	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	71
cM capacity (veh/h)			393		160	748
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1161	593	763	763	763	219
Volume Left	0	0	0	0	0	0
Volume Right	0	13	0	0	0	219
cSH	1700	1700	1700	1700	1700	748
Volume to Capacity	0.68	0.35	0.45	0.45	0.45	0.29
Queue Length 95th (ft)	0	0	0	0	0	30
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS						B
Approach Delay (s)	0.0		0.0			11.8
Approach LOS						B
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			65.7%		ICU Level of Service	C
Analysis Period (min)			15			

Intersection

Int Delay, s/veh 1.1

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	1654	12	0	2175	0	208
Future Vol, veh/h	1654	12	0	2175	0	208
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1741	13	0	2289	0	219

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

Approach	NB	SB	NW
HCM Control Delay, s	0	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBRNWLn1	SBT
Capacity (veh/h)	-	-	443
HCM Lane V/C Ratio	-	-	0.494
HCM Control Delay (s)	-	-	20.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.7

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↖	↗
Traffic Volume (vph)	1298	46	397	1792	63	341
Future Volume (vph)	1298	46	397	1792	63	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3452		1770	3539	1787	1599
Flt Permitted	1.00		0.09	1.00	0.95	1.00
Satd. Flow (perm)	3452		173	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1338	47	409	1847	65	352
RTOR Reduction (vph)	2	0	0	0	0	14
Lane Group Flow (vph)	1383	0	409	1847	65	338
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	54.6		83.1	83.1	7.9	31.9
Effective Green, g (s)	54.6		83.1	83.1	7.9	31.9
Actuated g/C Ratio	0.55		0.83	0.83	0.08	0.32
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1884		527	2940	141	582
v/s Ratio Prot	0.40		c0.19	0.52	0.04	c0.14
v/s Ratio Perm			c0.46			0.07
v/c Ratio	0.73		0.78	0.63	0.46	0.58
Uniform Delay, d1	17.2		25.0	3.0	44.0	28.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6		7.1	0.4	2.4	1.5
Delay (s)	19.8		32.1	3.4	46.4	30.0
Level of Service	B		C	A	D	C
Approach Delay (s)	19.8			8.6	32.5	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay		14.9		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.80				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		13.5
Intersection Capacity Utilization		74.8%		ICU Level of Service		D
Analysis Period (min)		15				
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	24	389	27	64	384	11	19	19	146	2	16	22
Future Volume (Veh/h)	24	389	27	64	384	11	19	19	146	2	16	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	414	29	68	409	12	20	20	155	2	17	23
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.97						0.97	0.97		0.97	0.97	0.97
vC, conflicting volume	421			452			1073	1046	444	1112	1055	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390			452			1061	1034	444	1100	1042	385
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			88	90	74	98	92	96
cM capacity (veh/h)	1141			1099			162	204	600	118	205	648
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1							
Volume Total	26	443	489	195	42							
Volume Left	26	0	68	20	2							
Volume Right	0	29	12	155	23							
cSH	1141	1700	1099	755	310							
Volume to Capacity	0.02	0.26	0.06	0.26	0.14							
Queue Length 95th (ft)	2	0	5	26	12							
Control Delay (s)	8.2	0.0	1.8	16.6	18.4							
Lane LOS	A		A	C	C							
Approach Delay (s)	0.5		1.8	16.6	18.4							
Approach LOS				C	C							
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			66.3%			ICU Level of Service			C			
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	389	27	64	384	11	19	19	146	2	16	22
Future Vol, veh/h	24	389	27	64	384	11	19	19	146	2	16	22
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	26	414	29	68	409	12	20	20	155	2	17	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	420	0	0	452	0	0	1060	1044	444	1047	1054	415
Stage 1	-	-	-	-	-	-	488	488	-	551	551	-
Stage 2	-	-	-	-	-	-	572	556	-	496	503	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1145	-	-	1109	-	-	200	227	610	208	228	642
Stage 1	-	-	-	-	-	-	558	547	-	522	519	-
Stage 2	-	-	-	-	-	-	502	509	-	559	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1144	-	-	1102	-	-	165	202	601	131	203	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	202	-	131	203	-
Stage 1	-	-	-	-	-	-	541	530	-	510	477	-
Stage 2	-	-	-	-	-	-	428	468	-	387	528	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	1.2	16.7	18.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	182	601	1102	-	-	1144	-	- 312
HCM Lane V/C Ratio	0.222	0.258	0.062	-	-	0.022	-	- 0.136
HCM Control Delay (s)	30.3	13.1	8.5	0	-	8.2	-	- 18.4
HCM Lane LOS	D	B	A	A	-	A	-	- C
HCM 95th %tile Q(veh)	0.8	1	0.2	-	-	0.1	-	- 0.5

HCM Signalized Intersection Capacity Analysis

6: Washington Street & 7th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	472	115	0	321	266	83	165	16	274	242	26
Future Volume (vph)	0	472	115	0	321	266	83	165	16	274	242	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00	0.97	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881	1535		1863	1530	1770	1833		1770	1830	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1881	1535		1863	1530	1770	1833		1770	1830	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	502	122	0	341	283	88	176	17	291	257	28
RTOR Reduction (vph)	0	0	57	0	0	185	0	5	0	0	5	0
Lane Group Flow (vph)	0	502	65	0	341	98	88	188	0	291	280	0
Confl. Peds. (#/hr)	8		12	12		8	7		4	4		7
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases			6			2						
Actuated Green, G (s)		21.4	21.4		21.4	21.4	12.0	12.0		15.1	15.1	
Effective Green, g (s)		21.4	21.4		21.4	21.4	12.0	12.0		15.1	15.1	
Actuated g/C Ratio		0.35	0.35		0.35	0.35	0.19	0.19		0.24	0.24	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		649	529		643	528	342	354		431	445	
v/s Ratio Prot		c0.27			0.18		0.05	c0.10		c0.16	0.15	
v/s Ratio Perm			0.04			0.06						
v/c Ratio		0.77	0.12		0.53	0.19	0.26	0.53		0.68	0.63	
Uniform Delay, d1		18.1	13.9		16.3	14.2	21.2	22.5		21.2	20.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.7	0.1		0.8	0.2	0.4	1.5		4.2	2.8	
Delay (s)		23.9	14.0		17.1	14.4	21.6	24.0		25.4	23.7	
Level of Service		C	B		B	B	C	C		C	C	
Approach Delay (s)		21.9			15.9			23.3			24.6	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			21.0									
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			62.0							13.5		
Intersection Capacity Utilization			61.6%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Washington Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	340	42	180	14	59	8	209	221	9	5	326	143
Future Volume (vph)	340	42	180	14	59	8	209	221	9	5	326	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1537		1797		1787	1868		1745	1744	
Flt Permitted		0.73	1.00		0.92		0.20	1.00		0.60	1.00	
Satd. Flow (perm)		1371	1537		1663		375	1868		1109	1744	
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)	370	46	196	15	64	9	227	240	10	5	354	155
RTOR Reduction (vph)	0	0	130	0	5	0	0	2	0	0	20	0
Lane Group Flow (vph)	0	416	66	0	83	0	227	248	0	5	489	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.6	25.6		25.6		41.1	35.7		28.8	27.9	
Effective Green, g (s)		25.6	25.6		25.6		41.1	35.7		28.8	27.9	
Actuated g/C Ratio		0.34	0.34		0.34		0.54	0.47		0.38	0.37	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		463	519		562		365	880		429	642	
v/s Ratio Prot							c0.07	0.13		0.00	c0.28	
v/s Ratio Perm		c0.30	0.04		0.05		0.27			0.00		
v/c Ratio		0.90	0.13		0.15		0.62	0.28		0.01	0.76	
Uniform Delay, d1		23.8	17.3		17.4		12.2	12.2		14.6	21.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		19.8	0.1		0.1		3.3	0.2		0.0	5.3	
Delay (s)		43.6	17.4		17.6		15.5	12.4		14.6	26.3	
Level of Service		D	B		B		B	B		B	C	
Approach Delay (s)		35.2			17.6			13.8			26.2	
Approach LOS		D			B			B			C	
Intersection Summary												
HCM 2000 Control Delay			25.5				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			75.7				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			76.6%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Washington Street & 15th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	40	8	14	27	114	27	30	484	53	39	430	104
Future Volume (vph)	40	8	14	27	114	27	30	484	53	39	430	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1611			1799		1786	1849		1769	1798	
Flt Permitted		0.74			0.93		0.33	1.00		0.33	1.00	
Satd. Flow (perm)		1223			1695		619	1849		608	1798	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	9	15	29	121	29	32	515	56	41	457	111
RTOR Reduction (vph)	0	12	0	0	12	0	0	6	0	0	12	0
Lane Group Flow (vph)	0	55	0	0	167	0	32	565	0	41	556	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.4			8.4		24.8	23.3		24.8	23.3	
Effective Green, g (s)		8.4			8.4		24.8	23.3		24.8	23.3	
Actuated g/C Ratio		0.18			0.18		0.53	0.50		0.53	0.50	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		219			304		366	922		360	897	
v/s Ratio Prot							0.00	0.31		c0.00	c0.31	
v/s Ratio Perm		0.04			c0.10		0.04			0.06		
v/c Ratio		0.25			0.55		0.09	0.61		0.11	0.62	
Uniform Delay, d1		16.4			17.4		5.7	8.4		5.7	8.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			2.0		0.1	1.2		0.1	1.3	
Delay (s)		17.0			19.4		5.8	9.7		5.9	9.8	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		17.0			19.4			9.5			9.5	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			46.7			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			51.1%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Washington Street & Abernethy Road

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	6	184	1	30	5	244	307	31	367	1
Future Volume (vph)	2	0	6	184	1	30	5	244	307	31	367	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.90		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1654		1734	1529		1784	1881	1562	1749	1844	
Flt Permitted		0.95		0.75	1.00		0.50	1.00	1.00	0.59	1.00	
Satd. Flow (perm)		1591		1372	1529		936	1881	1562	1091	1844	
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)	2	0	7	204	1	33	6	271	341	34	408	1
RTOR Reduction (vph)	0	7	0	0	25	0	0	0	170	0	0	0
Lane Group Flow (vph)	0	2	0	204	9	0	6	271	171	34	409	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4				8
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		9.1		9.1	9.1		18.2	18.2	18.2	18.2	18.2	
Effective Green, g (s)		9.1		9.1	9.1		18.2	18.2	18.2	18.2	18.2	
Actuated g/C Ratio		0.25		0.25	0.25		0.50	0.50	0.50	0.50	0.50	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		398		343	383		469	943	783	547	924	
v/s Ratio Prot					0.01			0.14			c0.22	
v/s Ratio Perm		0.00		c0.15			0.01		0.11	0.03		
v/c Ratio		0.01		0.59	0.02		0.01	0.29	0.22	0.06	0.44	
Uniform Delay, d1		10.2		12.0	10.3		4.5	5.3	5.1	4.7	5.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		2.8	0.0		0.0	0.2	0.1	0.0	0.3	
Delay (s)		10.2		14.7	10.3		4.6	5.4	5.2	4.7	6.1	
Level of Service		B		B	B		A	A	A	A	A	
Approach Delay (s)		10.2			14.1			5.3			6.0	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.2			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			36.3			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			50.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

11: Washington Street & Amtrak Station Access

04/18/2017

																											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR															
Lane Configurations																											
Traffic Volume (veh/h)	14	0	20	2	0	1	20	255	1	0	377	13															
Future Volume (Veh/h)	14	0	20	2	0	1	20	255	1	0	377	13															
Sign Control		Stop			Stop			Free			Free																
Grade		0%			0%			0%			0%																
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92															
Hourly flow rate (vph)	15	0	22	2	0	1	22	277	1	0	410	14															
Pedestrians																											
Lane Width (ft)																											
Walking Speed (ft/s)																											
Percent Blockage																											
Right turn flare (veh)																											
Median type								None			None																
Median storage veh)																											
Upstream signal (ft)								691																			
pX, platoon unblocked																											
vC, conflicting volume	739	739	417	754	746	278	424			278																	
vC1, stage 1 conf vol																											
vC2, stage 2 conf vol																											
vCu, unblocked vol	739	739	417	754	746	278	424			278																	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1																	
tC, 2 stage (s)																											
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2																	
p0 queue free %	95	100	97	99	100	100	98			100																	
cM capacity (veh/h)	328	338	636	310	335	761	1135			1285																	
Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2																					
Volume Total	37	3	22	278	0	424																					
Volume Left	15	2	22	0	0	0																					
Volume Right	22	1	0	1	0	14																					
cSH	460	386	1135	1700	1700	1700																					
Volume to Capacity	0.08	0.01	0.02	0.16	0.00	0.25																					
Queue Length 95th (ft)	7	1	1	0	0	0																					
Control Delay (s)	13.5	14.4	8.2	0.0	0.0	0.0																					
Lane LOS	B	B	A																								
Approach Delay (s)	13.5	14.4	0.6																								
Approach LOS	B	B																									
Intersection Summary																											
Average Delay				0.9																							
Intersection Capacity Utilization				30.6%	ICU Level of Service				A																		
Analysis Period (min)				15																							

HCM 2010 TWSC
11: Washington Street & Amtrak Station Access

04/18/2017

Intersection												
Int Delay, s/veh	0.9											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	14	0	20	2	0	1	20	255	1	0	377	13
Future Vol, veh/h	14	0	20	2	0	1	20	255	1	0	377	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	22	2	0	1	22	277	1	0	410	14
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	739	739	417	749	745	278	424	0	0	278	0	0
Stage 1	417	417	-	321	321	-	-	-	-	-	-	-
Stage 2	322	322	-	428	424	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	333	345	636	328	342	761	1135	-	-	1285	-	-
Stage 1	613	591	-	691	652	-	-	-	-	-	-	-
Stage 2	690	651	-	605	587	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	328	338	636	312	335	761	1135	-	-	1285	-	-
Mov Cap-2 Maneuver	328	338	-	312	335	-	-	-	-	-	-	-
Stage 1	601	591	-	678	639	-	-	-	-	-	-	-
Stage 2	676	638	-	584	587	-	-	-	-	-	-	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	13.5			14.4			0.6			0		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	1135	-	-	388	459	1285	-	-				
HCM Lane V/C Ratio	0.019	-	-	0.008	0.081	-	-	-				
HCM Control Delay (s)	8.2	-	-	14.4	13.5	0	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0	0.3	0	-	-				

HCM Signalized Intersection Capacity Analysis

12: Washington Street & Praire Schooner Way

04/18/2017



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	311	251	312	104	71	157
Future Volume (vph)	311	251	312	104	71	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3367	1553	3395		1735	3471
Flt Permitted	0.95	1.00	1.00		0.33	1.00
Satd. Flow (perm)	3367	1553	3395		607	3471
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	349	282	351	117	80	176
RTOR Reduction (vph)	0	169	61	0	0	0
Lane Group Flow (vph)	349	113	407	0	80	176
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.6	16.1	10.5		21.5	21.5
Effective Green, g (s)	9.6	16.1	10.5		21.5	21.5
Actuated g/C Ratio	0.24	0.40	0.26		0.54	0.54
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	806	797	888		508	1861
v/s Ratio Prot	c0.10	c0.02	c0.12		0.03	0.05
v/s Ratio Perm		0.05			0.06	
v/c Ratio	0.43	0.14	0.46		0.16	0.09
Uniform Delay, d1	12.9	7.6	12.4		4.8	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.4		0.1	0.0
Delay (s)	13.3	7.7	12.8		5.0	4.6
Level of Service	B	A	B		A	A
Approach Delay (s)	10.8		12.8			4.7
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 13: Washington Street & Clackamas River Drive

04/18/2017



Movement	NWL	NWR	NET	NER	SWL	SWT
Right Turn Channelized				MOYes		
Traffic Volume (veh/h)	71	95	312	237	174	164
Future Volume (veh/h)	71	95	312	237	174	164
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	106	347	263	193	182
Approach Volume (veh/h)	185		347			375
Crossing Volume (veh/h)	347		193			79
High Capacity (veh/h)	1054		1191			1302
High v/c (veh/h)	0.18		0.29			0.29
Low Capacity (veh/h)	862		985			1086
Low v/c (veh/h)	0.21		0.35			0.35
Intersection Summary						
Maximum v/c High			0.29			
Maximum v/c Low			0.35			
Intersection Capacity Utilization			54.4%		ICU Level of Service	A

HCM 2010 Roundabout
13: Washington Street & Clackamas River Drive

04/18/2017

Intersection				
Intersection Delay, s/veh	6.1			
Intersection LOS	A			
Approach	NW	NE	SW	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	185	610	375	
Demand Flow Rate, veh/h	199	628	383	
Vehicles Circulating, veh/h	357	197	85	
Vehicles Exiting, veh/h	197	271	471	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	4	0	0	
Ped Cap Adj	0.999	1.000	1.000	
Approach Delay, s/veh	7.8	4.8	7.4	
Approach LOS	A	A	A	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	T	R	LT
Assumed Moves	LR	T	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	199	357	271	383
Cap Entry Lane, veh/h	791	928	1957	1038
Entry HV Adj Factor	0.930	0.971	0.971	0.980
Flow Entry, veh/h	185	347	263	375
Cap Entry, veh/h	735	901	1900	1017
V/C Ratio	0.252	0.385	0.138	0.369
Control Delay, s/veh	7.8	8.4	0.0	7.4
LOS	A	A	A	A
95th %tile Queue, veh	1	2	0	2

HCM Signalized Intersection Capacity Analysis

14: Praire Schooner Way/Clackamas River Drive

04/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	166	0	0	378	0	1958	125	0	3055	532
Future Volume (vph)	0	0	166	0	0	378	0	1958	125	0	3055	532
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	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			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	171	0	0	390	0	2019	129	0	3149	548
RTOR Reduction (vph)	0	0	15	0	0	31	0	0	36	0	0	153
Lane Group Flow (vph)	0	0	156	0	0	359	0	2019	93	0	3149	395
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)			15.5			15.5		63.1	63.1		63.1	63.1
Effective Green, g (s)			15.5			15.5		63.1	63.1		63.1	63.1
Actuated g/C Ratio			0.18			0.18		0.72	0.72		0.72	0.72
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			497			488		3662	1140		3662	1140
v/s Ratio Prot								0.40			c0.62	
v/s Ratio Perm			0.06			c0.13			0.06			0.25
v/c Ratio			0.31			0.74		0.55	0.08		0.86	0.35
Uniform Delay, d1			31.4			34.1		5.7	3.6		9.0	4.6
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.4			5.7		0.2	0.0		2.2	0.2
Delay (s)			31.8			39.8		5.9	3.7		11.2	4.7
Level of Service			C			D		A	A		B	A
Approach Delay (s)		31.8			39.8			5.7			10.3	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			87.6			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			72.3%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: OR-99E & I-205 SB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕↕	↔	↔	↕↕↕
Traffic Volume (vph)	412	247	1466	299	661	951
Future Volume (vph)	412	247	1466	299	661	951
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	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)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	448	268	1593	325	718	1034
RTOR Reduction (vph)	0	0	0	228	0	0
Lane Group Flow (vph)	448	268	1593	98	718	1034
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.3	49.5	27.0	27.0	33.2	64.7
Effective Green, g (s)	16.3	49.5	27.0	27.0	33.2	64.7
Actuated g/C Ratio	0.18	0.55	0.30	0.30	0.37	0.72
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	592	905	1496	453	646	3620
v/s Ratio Prot	c0.14	0.11	c0.32		c0.41	0.21
v/s Ratio Perm		0.07		0.06		
v/c Ratio	0.76	0.30	1.06	0.22	1.11	0.29
Uniform Delay, d1	35.0	10.9	31.5	23.6	28.4	4.5
Progression Factor	1.00	1.00	0.96	2.27	1.00	1.00
Incremental Delay, d2	5.5	0.2	40.4	0.9	70.0	0.2
Delay (s)	40.5	11.1	70.8	54.3	98.4	4.7
Level of Service	D	B	E	D	F	A
Approach Delay (s)	29.5		68.0			43.1
Approach LOS	C		E			D
Intersection Summary						
HCM 2000 Control Delay			51.7		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.02			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			87.9%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: OR-99E & I-205 NB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	158	444	1327	972	267	1097
Future Volume (vph)	158	444	1327	972	267	1097
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	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)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	166	467	1397	1023	281	1155
RTOR Reduction (vph)	0	258	0	325	0	0
Lane Group Flow (vph)	166	209	1397	698	281	1155
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.2	15.2	44.5	44.5	16.8	65.8
Effective Green, g (s)	15.2	15.2	44.5	44.5	16.8	65.8
Actuated g/C Ratio	0.17	0.17	0.49	0.49	0.19	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	290	259	2442	739	320	3611
v/s Ratio Prot	0.10		0.28		0.16	0.23
v/s Ratio Perm		0.14		0.47		
v/c Ratio	0.57	0.81	0.57	0.94	0.88	0.32
Uniform Delay, d1	34.4	36.0	16.0	21.6	35.6	4.2
Progression Factor	1.00	1.00	1.00	1.00	0.79	1.49
Incremental Delay, d2	2.7	16.4	1.0	22.0	21.5	0.2
Delay (s)	37.1	52.4	17.0	43.6	49.6	6.6
Level of Service	D	D	B	D	D	A
Approach Delay (s)	48.4		28.3			15.0
Approach LOS	D		C			B
Intersection Summary						
HCM 2000 Control Delay			26.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			82.8%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

3: OR-99E & 15th Street

04/18/2017

						
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (veh/h)	2021	13	0	1274	0	230
Future Volume (Veh/h)	2021	13	0	1274	0	230
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2173	14	0	1370	0	247
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.52		0.56	0.52
vC, conflicting volume			2187		2637	1094
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1449		1541	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	57
cM capacity (veh/h)			233		60	568
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1449	738	457	457	457	247
Volume Left	0	0	0	0	0	0
Volume Right	0	14	0	0	0	247
cSH	1700	1700	1700	1700	1700	568
Volume to Capacity	0.85	0.43	0.27	0.27	0.27	0.43
Queue Length 95th (ft)	0	0	0	0	0	55
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.1
Lane LOS						C
Approach Delay (s)	0.0		0.0			16.1
Approach LOS						C
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			77.2%		ICU Level of Service	D
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	2.7					
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑↱			↑↑↑↑		↱
Traffic Vol, veh/h	2021	13	0	1274	0	230
Future Vol, veh/h	2021	13	0	1274	0	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2173	14	0	1370	0	247
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1094
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	332
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	332
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	NB		SB		NW	
HCM Control Delay, s	0		0		41.7	
HCM LOS					E	
Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT		
Capacity (veh/h)	-	-	332	-		
HCM Lane V/C Ratio	-	-	0.745	-		
HCM Control Delay (s)	-	-	41.7	-		
HCM Lane LOS	-	-	E	-		
HCM 95th %tile Q(veh)	-	-	5.7	-		

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↖	↗
Traffic Volume (vph)	1532	24	323	966	78	513
Future Volume (vph)	1532	24	323	966	78	513
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3397		1703	3406	1736	1553
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3397		129	3406	1736	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1630	26	344	1028	83	546
RTOR Reduction (vph)	1	0	0	0	0	8
Lane Group Flow (vph)	1655	0	344	1028	83	538
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	51.2		82.1	82.1	8.9	35.3
Effective Green, g (s)	51.2		82.1	82.1	8.9	35.3
Actuated g/C Ratio	0.51		0.82	0.82	0.09	0.35
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1739		521	2796	154	618
v/s Ratio Prot	c0.49		0.17	0.30	0.05	c0.23
v/s Ratio Perm			0.37			0.12
v/c Ratio	0.95		0.66	0.37	0.54	0.87
Uniform Delay, d1	23.2		25.8	2.3	43.6	30.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8		3.1	0.1	3.6	12.8
Delay (s)	36.1		29.0	2.4	47.2	43.0
Level of Service	D		C	A	D	D
Approach Delay (s)	36.1			9.0	43.5	
Approach LOS	D			A	D	
Intersection Summary						
HCM 2000 Control Delay		27.2		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.96				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		13.5
Intersection Capacity Utilization		82.4%		ICU Level of Service		E
Analysis Period (min)		15				
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	22	293	29	129	575	12	6	25	59	0	12	11
Future Volume (Veh/h)	22	293	29	129	575	12	6	25	59	0	12	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	24	315	31	139	618	13	6	27	63	0	13	12
Pedestrians		2			10			4				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			0				
Right turn flare (veh)									5			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	631			350			1306	1292	344	1320	1300	626
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	562			350			1290	1275	344	1306	1285	557
tC, single (s)	4.1			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	97			88			94	79	91	100	90	98
cM capacity (veh/h)	926			1199			101	129	674	86	132	493
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1							
Volume Total	24	346	770	96	25							
Volume Left	24	0	139	6	0							
Volume Right	0	31	13	63	12							
cSH	926	1700	1199	359	204							
Volume to Capacity	0.03	0.20	0.12	0.27	0.12							
Queue Length 95th (ft)	2	0	10	27	10							
Control Delay (s)	9.0	0.0	2.8	22.4	25.1							
Lane LOS	A		A	C	D							
Approach Delay (s)	0.6		2.8	22.4	25.1							
Approach LOS				C	D							
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			73.8%		ICU Level of Service				D			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 3.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	22	293	29	129	575	12	6	25	59	0	12	11
Future Vol, veh/h	22	293	29	129	575	12	6	25	59	0	12	11
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	24	315	31	139	618	13	6	27	63	0	13	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	631	0	0	350	0	0	1299	1291	345	1303	1300	627
Stage 1	-	-	-	-	-	-	382	382	-	902	902	-
Stage 2	-	-	-	-	-	-	917	909	-	401	398	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	942	-	-	1203	-	-	134	158	682	139	163	487
Stage 1	-	-	-	-	-	-	627	601	-	335	359	-
Stage 2	-	-	-	-	-	-	317	345	-	630	606	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	940	-	-	1192	-	-	102	126	673	89	130	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	126	-	89	130	-
Stage 1	-	-	-	-	-	-	609	583	-	326	294	-
Stage 2	-	-	-	-	-	-	242	283	-	525	588	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.6	1.5	22.9	25.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	121	673	1192	-	-	940	-	- 200
HCM Lane V/C Ratio	0.275	0.094	0.116	-	-	0.025	-	- 0.124
HCM Control Delay (s)	45.7	10.9	8.4	0	-	8.9	-	- 25.5
HCM Lane LOS	E	B	A	A	-	A	-	- D
HCM 95th %tile Q(veh)	1	0.3	0.4	-	-	0.1	-	- 0.4

HCM Signalized Intersection Capacity Analysis

6: Washington Street & 7th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	356	50	0	390	309	150	280	8	170	139	49
Future Volume (vph)	0	356	50	0	390	309	150	280	8	170	139	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		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		1.00	0.96	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881	1564		1863	1539	1736	1818		1703	1712	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1881	1564		1863	1539	1736	1818		1703	1712	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	419	59	0	459	364	176	329	9	200	164	58
RTOR Reduction (vph)	0	0	40	0	0	249	0	1	0	0	19	0
Lane Group Flow (vph)	0	419	19	0	459	115	176	337	0	200	203	0
Confl. Peds. (#/hr)	5		1	1		5	2		4	4		2
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	4%	4%	4%	6%	6%	6%
Turn Type		NA	Perm		NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases			6			2						
Actuated Green, G (s)		19.2	19.2		19.2	19.2	15.4	15.4		12.6	12.6	
Effective Green, g (s)		19.2	19.2		19.2	19.2	15.4	15.4		12.6	12.6	
Actuated g/C Ratio		0.32	0.32		0.32	0.32	0.25	0.25		0.21	0.21	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		594	494		589	486	440	461		353	355	
v/s Ratio Prot		0.22			c0.25		0.10	c0.19		0.12	c0.12	
v/s Ratio Perm			0.01			0.07						
v/c Ratio		0.71	0.04		0.78	0.24	0.40	0.73		0.57	0.57	
Uniform Delay, d1		18.3	14.4		18.8	15.3	18.8	20.7		21.6	21.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.8	0.0		6.5	0.3	0.6	5.7		2.1	2.2	
Delay (s)		22.1	14.4		25.3	15.6	19.4	26.5		23.7	23.8	
Level of Service		C	B		C	B	B	C		C	C	
Approach Delay (s)		21.1			21.0			24.1			23.8	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			22.2									
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			60.7							13.5		
Intersection Capacity Utilization			56.4%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Washington Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	188	35	117	3	41	3	323	208	8	1	287	305
Future Volume (vph)	188	35	117	3	41	3	323	208	8	1	287	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1507		1840		1752	1833		1716	1646	
Flt Permitted		0.75	1.00		0.98		0.14	1.00		0.61	1.00	
Satd. Flow (perm)		1361	1507		1814		255	1833		1096	1646	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	214	40	133	3	47	3	367	236	9	1	326	347
RTOR Reduction (vph)	0	0	105	0	2	0	0	2	0	0	43	0
Lane Group Flow (vph)	0	254	28	0	51	0	367	243	0	1	630	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		17.8	17.8		17.8		58.7	53.3		39.1	38.2	
Effective Green, g (s)		17.8	17.8		17.8		58.7	53.3		39.1	38.2	
Actuated g/C Ratio		0.21	0.21		0.21		0.69	0.62		0.46	0.45	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		283	313		377		455	1142		507	735	
v/s Ratio Prot							c0.15	0.13		0.00	0.38	
v/s Ratio Perm		c0.19	0.02		0.03		c0.40			0.00		
v/c Ratio		0.90	0.09		0.13		0.81	0.21		0.00	0.86	
Uniform Delay, d1		33.0	27.3		27.6		18.9	7.0		12.6	21.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		28.4	0.1		0.2		10.1	0.1		0.0	9.7	
Delay (s)		61.4	27.4		27.7		28.9	7.1		12.6	30.9	
Level of Service		E	C		C		C	A		B	C	
Approach Delay (s)		49.7			27.7			20.2			30.9	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			31.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			85.5				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			82.0%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Washington Street & 15th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	14	15	14	11	71	34	28	289	94	54	552	214
Future Volume (vph)	14	15	14	11	71	34	28	289	94	54	552	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1478			1670		1703	1717		1735	1740	
Flt Permitted		0.88			0.97		0.21	1.00		0.46	1.00	
Satd. Flow (perm)		1329			1623		384	1717		837	1740	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	16	17	16	12	80	38	31	325	106	61	620	240
RTOR Reduction (vph)	0	14	0	0	18	0	0	12	0	0	13	0
Lane Group Flow (vph)	0	35	0	0	112	0	31	419	0	61	847	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.5			8.5		43.4	41.9		45.8	43.1	
Effective Green, g (s)		8.5			8.5		43.4	41.9		45.8	43.1	
Actuated g/C Ratio		0.13			0.13		0.65	0.63		0.69	0.65	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		169			207		279	1080		612	1126	
v/s Ratio Prot							0.00	0.24		c0.00	c0.49	
v/s Ratio Perm		0.03			c0.07		0.07			0.06		
v/c Ratio		0.21			0.54		0.11	0.39		0.10	0.75	
Uniform Delay, d1		26.0			27.2		6.1	6.1		3.5	8.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			2.7		0.2	0.2		0.1	2.9	
Delay (s)		26.6			29.9		6.3	6.3		3.6	11.0	
Level of Service		C			C		A	A		A	B	
Approach Delay (s)		26.6			29.9			6.3			10.5	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.4									
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			66.6							13.5		
Intersection Capacity Utilization			59.4%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Washington Street & Abernethy Road

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	1	0	427	1	30	1	166	159	17	403	0
Future Volume (vph)	0	1	0	427	1	30	1	166	159	17	403	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1900		1717	1546		1700	1792	1491	1734	1827	
Flt Permitted		1.00		0.76	1.00		0.30	1.00	1.00	0.64	1.00	
Satd. Flow (perm)		1900		1368	1546		535	1792	1491	1161	1827	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	1	0	497	1	35	1	193	185	20	469	0
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	121	0	0	0
Lane Group Flow (vph)	0	1	0	497	17	0	1	193	64	20	469	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type		NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4				8
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		22.6		22.6	22.6		16.8	16.8	16.8	16.8	16.8	
Effective Green, g (s)		22.6		22.6	22.6		16.8	16.8	16.8	16.8	16.8	
Actuated g/C Ratio		0.47		0.47	0.47		0.35	0.35	0.35	0.35	0.35	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		887		638	721		185	622	517	402	634	
v/s Ratio Prot		0.00			0.01			0.11			c0.26	
v/s Ratio Perm				c0.36			0.00		0.04	0.02		
v/c Ratio		0.00		0.78	0.02		0.01	0.31	0.12	0.05	0.74	
Uniform Delay, d1		6.9		10.8	7.0		10.3	11.6	10.8	10.5	13.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		6.0	0.0		0.0	0.3	0.1	0.1	4.5	
Delay (s)		6.9		16.8	7.0		10.3	11.8	10.9	10.5	18.4	
Level of Service		A		B	A		B	B	B	B	B	
Approach Delay (s)		6.9			16.1			11.4			18.1	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			48.4			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			59.0%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

11: Washington Street & Amtrak Station Access

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	4	0	6	1	0	0	23	170	3	2	413	16
Future Volume (Veh/h)	4	0	6	1	0	0	23	170	3	2	413	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	7	1	0	0	25	185	3	2	449	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								691				
pX, platoon unblocked												
vC, conflicting volume	696	700	458	696	706	186	466			188		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	696	700	458	696	706	186	466			188		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	100	100	100	98			100		
cM capacity (veh/h)	349	355	603	345	352	856	1095			1386		
Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2						
Volume Total	11	1	25	188	2	466						
Volume Left	4	1	25	0	2	0						
Volume Right	7	0	0	3	0	17						
cSH	477	345	1095	1700	1386	1700						
Volume to Capacity	0.02	0.00	0.02	0.11	0.00	0.27						
Queue Length 95th (ft)	2	0	2	0	0	0						
Control Delay (s)	12.7	15.5	8.4	0.0	7.6	0.0						
Lane LOS	B	C	A		A							
Approach Delay (s)	12.7	15.5	1.0		0.0							
Approach LOS	B	C										
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			32.7%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM 2010 TWSC
11: Washington Street & Amtrak Station Access

04/18/2017

Intersection												
Int Delay, s/veh	0.5											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	0	6	1	0	0	23	170	3	2	413	16
Future Vol, veh/h	4	0	6	1	0	0	23	170	3	2	413	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	7	1	0	0	25	185	3	2	449	17
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	698	700	458	701	707	186	466	0	0	188	0	0
Stage 1	462	462	-	236	236	-	-	-	-	-	-	-
Stage 2	236	238	-	465	471	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	355	363	603	353	360	856	1095	-	-	1386	-	-
Stage 1	580	565	-	767	710	-	-	-	-	-	-	-
Stage 2	767	708	-	578	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	348	354	603	343	351	856	1095	-	-	1386	-	-
Mov Cap-2 Maneuver	348	354	-	343	351	-	-	-	-	-	-	-
Stage 1	567	564	-	749	694	-	-	-	-	-	-	-
Stage 2	749	692	-	571	559	-	-	-	-	-	-	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	12.9			15.5			1			0		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	1095	-	-	343	466	1386	-	-				
HCM Lane V/C Ratio	0.023	-	-	0.003	0.023	0.002	-	-				
HCM Control Delay (s)	8.4	-	-	15.5	12.9	7.6	-	-				
HCM Lane LOS	A	-	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0	0.1	0	-	-				

HCM Signalized Intersection Capacity Analysis

12: Washington Street & Praire Schooner Way

04/18/2017



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	306	166	250	42	72	256
Future Volume (vph)	306	166	250	42	72	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3155	1455	3125		1736	3471
Flt Permitted	0.95	1.00	1.00		0.39	1.00
Satd. Flow (perm)	3155	1455	3125		704	3471
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	340	184	278	47	80	284
RTOR Reduction (vph)	0	114	26	0	0	0
Lane Group Flow (vph)	340	70	299	0	80	284
Heavy Vehicles (%)	11%	11%	13%	13%	4%	4%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.6	14.6	10.2		19.7	19.7
Effective Green, g (s)	9.6	14.6	10.2		19.7	19.7
Actuated g/C Ratio	0.25	0.38	0.27		0.51	0.51
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	790	725	832		496	1785
v/s Ratio Prot	c0.11	0.01	c0.10		0.02	c0.08
v/s Ratio Perm		0.04			0.06	
v/c Ratio	0.43	0.10	0.36		0.16	0.16
Uniform Delay, d1	12.1	7.6	11.4		5.0	4.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.3		0.2	0.0
Delay (s)	12.4	7.7	11.7		5.2	5.0
Level of Service	B	A	B		A	A
Approach Delay (s)	10.8		11.7			5.0
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis 13: Washington Street & Clackamas River Drive

04/18/2017



Movement	NWL	NWR	NET	NER	SWL	SWT
Right Turn Channelized				MOYes		
Traffic Volume (veh/h)	71	67	176	208	282	263
Future Volume (veh/h)	71	67	176	208	282	263
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	81	76	200	236	320	299
Approach Volume (veh/h)	157		200			619
Crossing Volume (veh/h)	200		320			81
High Capacity (veh/h)	1184		1077			1300
High v/c (veh/h)	0.13		0.19			0.48
Low Capacity (veh/h)	979		883			1084
Low v/c (veh/h)	0.16		0.23			0.57
Intersection Summary						
Maximum v/c High			0.48			
Maximum v/c Low			0.57			
Intersection Capacity Utilization			56.7%		ICU Level of Service	B

HCM 2010 Roundabout
13: Washington Street & Clackamas River Drive

04/18/2017

Intersection				
Intersection Delay, s/veh	8.4			
Intersection LOS	A			
Approach	NW	NE	SW	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	157	436	619	
Demand Flow Rate, veh/h	169	480	638	
Vehicles Circulating, veh/h	220	330	87	
Vehicles Exiting, veh/h	330	395	302	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	6.2	3.7	12.2	
Approach LOS	A	A	B	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	T	R	LT
Assumed Moves	LR	T	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	169	220	260	638
Cap Entry Lane, veh/h	907	812	2090	1036
Entry HV Adj Factor	0.929	0.909	0.909	0.970
Flow Entry, veh/h	157	200	236	619
Cap Entry, veh/h	842	738	1900	1005
V/C Ratio	0.186	0.271	0.124	0.616
Control Delay, s/veh	6.2	8.0	0.0	12.2
LOS	A	A	A	B
95th %tile Queue, veh	1	1	0	4

HCM Signalized Intersection Capacity Analysis

14: Praire Schooner Way/Clackamas River Drive

04/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	103	0	0	460	0	2558	152	0	1816	471
Future Volume (vph)	0	0	103	0	0	460	0	2558	152	0	1816	471
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
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	1.00
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)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	106	0	0	474	0	2637	157	0	1872	486
RTOR Reduction (vph)	0	0	19	0	0	19	0	0	61	0	0	189
Lane Group Flow (vph)	0	0	87	0	0	455	0	2637	96	0	1872	297
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)			15.2			15.2		38.1	38.1		38.1	38.1
Effective Green, g (s)			15.2			15.2		38.1	38.1		38.1	38.1
Actuated g/C Ratio			0.24			0.24		0.61	0.61		0.61	0.61
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			673			619		3050	930		2992	932
v/s Ratio Prot								c0.53			0.38	
v/s Ratio Perm			0.03			c0.18			0.06			0.20
v/c Ratio			0.13			0.74		0.86	0.10		0.63	0.32
Uniform Delay, d1			18.4			21.7		10.0	5.0		7.6	5.8
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.1			4.5		2.8	0.0		0.4	0.2
Delay (s)			18.5			26.2		12.8	5.1		8.0	6.0
Level of Service			B			C		B	A		A	A
Approach Delay (s)		18.5			26.2			12.3			7.6	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.7			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			62.3			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			73.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: OR-99E & I-205 SB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↔↔↔	↔	↔	↔↔↔
Traffic Volume (vph)	904	328	1301	242	511	1707
Future Volume (vph)	904	328	1301	242	511	1707
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	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	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	932	338	1341	249	527	1760
RTOR Reduction (vph)	0	0	0	178	0	0
Lane Group Flow (vph)	932	338	1341	71	527	1760
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.5	51.0	25.5	25.5	26.5	56.5
Effective Green, g (s)	24.5	51.0	25.5	25.5	26.5	56.5
Actuated g/C Ratio	0.27	0.57	0.28	0.28	0.29	0.63
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	925	966	1440	432	521	3192
v/s Ratio Prot	c0.27	0.10	c0.26		c0.30	0.35
v/s Ratio Perm		0.11		0.05		
v/c Ratio	1.01	0.35	0.93	0.16	1.01	0.55
Uniform Delay, d1	32.8	10.5	31.4	24.2	31.8	9.5
Progression Factor	1.00	1.00	0.92	2.24	1.00	1.00
Incremental Delay, d2	31.5	0.2	10.3	0.7	42.3	0.7
Delay (s)	64.2	10.8	39.2	55.1	74.1	10.2
Level of Service	E	B	D	E	E	B
Approach Delay (s)	50.0		41.7			24.9
Approach LOS	D		D			C
Intersection Summary						
HCM 2000 Control Delay			36.3		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.98			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			90.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: OR-99E & I-205 NB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	455	1152	842	432	2104
Future Volume (vph)	127	455	1152	842	432	2104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	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)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	130	464	1176	859	441	2147
RTOR Reduction (vph)	0	391	0	312	0	0
Lane Group Flow (vph)	130	73	1176	547	441	2147
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	12.2	12.2	37.9	37.9	26.4	68.8
Effective Green, g (s)	12.2	12.2	37.9	37.9	26.4	68.8
Actuated g/C Ratio	0.14	0.14	0.42	0.42	0.29	0.76
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	239	214	2120	635	519	3887
v/s Ratio Prot	c0.07		0.23		c0.25	0.42
v/s Ratio Perm		0.05		c0.36		
v/c Ratio	0.54	0.34	0.55	0.86	0.85	0.55
Uniform Delay, d1	36.3	35.3	19.7	23.7	29.9	4.3
Progression Factor	1.00	1.00	1.00	1.00	0.94	0.79
Incremental Delay, d2	2.5	1.0	1.1	14.3	8.9	0.4
Delay (s)	38.8	36.2	20.7	38.0	36.9	3.8
Level of Service	D	D	C	D	D	A
Approach Delay (s)	36.8		28.0			9.4
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			19.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			84.3%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

3: OR-99E & 15th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (veh/h)	1714	13	0	2254	0	230
Future Volume (Veh/h)	1714	13	0	2254	0	230
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1804	14	0	2373	0	242
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.64		0.73	0.64
vC, conflicting volume			1821		2605	912
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1172		992	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	65
cM capacity (veh/h)			377		178	697
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1203	615	791	791	791	242
Volume Left	0	0	0	0	0	0
Volume Right	0	14	0	0	0	242
cSH	1700	1700	1700	1700	1700	697
Volume to Capacity	0.71	0.36	0.47	0.47	0.47	0.35
Queue Length 95th (ft)	0	0	0	0	0	39
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	12.9
Lane LOS						B
Approach Delay (s)	0.0		0.0			12.9
Approach LOS						B
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			68.7%		ICU Level of Service	C
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.3					
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑↱			↑↑↑↑		↱
Traffic Vol, veh/h	1714	13	0	2254	0	230
Future Vol, veh/h	1714	13	0	2254	0	230
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1804	14	0	2373	0	242
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	912
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	425
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	424
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	NB		SB		NW	
HCM Control Delay, s	0		0		24.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT		
Capacity (veh/h)	-	-	424	-		
HCM Lane V/C Ratio	-	-	0.571	-		
HCM Control Delay (s)	-	-	24.2	-		
HCM Lane LOS	-	-	C	-		
HCM 95th %tile Q(veh)	-	-	3.5	-		

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↖	↗
Traffic Volume (vph)	1345	51	438	1857	70	376
Future Volume (vph)	1345	51	438	1857	70	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3450		1770	3539	1787	1599
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3450		134	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1387	53	452	1914	72	388
RTOR Reduction (vph)	2	0	0	0	0	11
Lane Group Flow (vph)	1438	0	452	1914	72	377
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	51.1		82.8	82.8	8.2	35.4
Effective Green, g (s)	51.1		82.8	82.8	8.2	35.4
Actuated g/C Ratio	0.51		0.83	0.83	0.08	0.35
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1762		555	2930	146	638
v/s Ratio Prot	0.42		c0.22	0.54	0.04	c0.16
v/s Ratio Perm			c0.45			0.08
v/c Ratio	0.82		0.81	0.65	0.49	0.59
Uniform Delay, d1	20.5		27.5	3.2	43.9	26.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3		8.9	0.5	2.6	1.5
Delay (s)	24.8		36.4	3.8	46.5	27.9
Level of Service	C		D	A	D	C
Approach Delay (s)	24.8			10.0	30.8	
Approach LOS	C			A	C	
Intersection Summary						
HCM 2000 Control Delay			17.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.83			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			78.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	26	429	30	71	424	12	21	21	161	2	18	24
Future Volume (Veh/h)	26	429	30	71	424	12	21	21	161	2	18	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	28	456	32	76	451	13	22	22	171	2	19	26
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.95						0.95	0.95		0.95	0.95	0.95
vC, conflicting volume	464			497			1183	1153	488	1225	1162	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	411			497			1167	1135	488	1211	1145	405
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			93			83	87	70	98	89	96
cM capacity (veh/h)	1097			1058			129	171	567	88	172	618
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1							
Volume Total	28	488	540	215	47							
Volume Left	28	0	76	22	2							
Volume Right	0	32	13	171	26							
cSH	1097	1700	1058	713	268							
Volume to Capacity	0.03	0.29	0.07	0.30	0.18							
Queue Length 95th (ft)	2	0	6	32	16							
Control Delay (s)	8.4	0.0	2.0	19.1	21.3							
Lane LOS	A		A	C	C							
Approach Delay (s)	0.5		2.0	19.1	21.3							
Approach LOS				C	C							
Intersection Summary												
Average Delay			4.9									
Intersection Capacity Utilization			71.3%		ICU Level of Service				C			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 4.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	26	429	30	71	424	12	21	21	161	2	18	24
Future Vol, veh/h	26	429	30	71	424	12	21	21	161	2	18	24
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	28	456	32	76	451	13	22	22	171	2	19	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	464	0	0	497	0	0	1169	1152	488	1155	1162	458
Stage 1	-	-	-	-	-	-	537	537	-	609	609	-
Stage 2	-	-	-	-	-	-	632	615	-	546	553	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1103	-	-	1067	-	-	169	196	576	175	197	607
Stage 1	-	-	-	-	-	-	524	520	-	486	488	-
Stage 2	-	-	-	-	-	-	465	479	-	526	518	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1102	-	-	1060	-	-	133	171	567	99	172	606
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	171	-	99	172	-
Stage 1	-	-	-	-	-	-	506	502	-	474	441	-
Stage 2	-	-	-	-	-	-	384	433	-	340	501	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	1.2	19.2	21.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	150	567	1060	-	-	1102	-	- 268
HCM Lane V/C Ratio	0.298	0.302	0.071	-	-	0.025	-	- 0.175
HCM Control Delay (s)	38.9	14.1	8.7	0	-	8.4	-	- 21.3
HCM Lane LOS	E	B	A	A	-	A	-	- C
HCM 95th %tile Q(veh)	1.2	1.3	0.2	-	-	0.1	-	- 0.6

HCM Signalized Intersection Capacity Analysis

6: Washington Street & 7th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	521	127	0	354	294	92	182	18	303	267	29
Future Volume (vph)	0	521	127	0	354	294	92	182	18	303	267	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00	0.97	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881	1533		1863	1529	1770	1833		1770	1829	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1881	1533		1863	1529	1770	1833		1770	1829	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	554	135	0	377	313	98	194	19	322	284	31
RTOR Reduction (vph)	0	0	56	0	0	202	0	5	0	0	5	0
Lane Group Flow (vph)	0	554	79	0	377	111	98	208	0	322	310	0
Confl. Peds. (#/hr)	8		12	12		8	7		4	4		7
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases			6			2						
Actuated Green, G (s)		23.2	23.2		23.2	23.2	12.7	12.7		16.0	16.0	
Effective Green, g (s)		23.2	23.2		23.2	23.2	12.7	12.7		16.0	16.0	
Actuated g/C Ratio		0.35	0.35		0.35	0.35	0.19	0.19		0.24	0.24	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		667	543		660	542	343	355		433	447	
v/s Ratio Prot		c0.29			0.20		0.06	c0.11		c0.18	0.17	
v/s Ratio Perm			0.05			0.07						
v/c Ratio		0.83	0.15		0.57	0.20	0.29	0.59		0.74	0.69	
Uniform Delay, d1		19.3	14.4		17.1	14.7	22.5	24.0		22.8	22.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.7	0.1		1.2	0.2	0.5	2.5		6.8	4.6	
Delay (s)		28.0	14.5		18.3	14.9	22.9	26.4		29.6	27.1	
Level of Service		C	B		B	B	C	C		C	C	
Approach Delay (s)		25.3			16.7			25.3			28.3	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			23.6									
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			65.4							13.5		
Intersection Capacity Utilization			66.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Washington Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	375	46	199	15	65	9	231	244	10	6	360	158
Future Volume (vph)	375	46	199	15	65	9	231	244	10	6	360	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1535		1798		1787	1868		1745	1743	
Flt Permitted		0.72	1.00		0.91		0.15	1.00		0.59	1.00	
Satd. Flow (perm)		1345	1535		1649		281	1868		1083	1743	
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)	408	50	216	16	71	10	251	265	11	7	391	172
RTOR Reduction (vph)	0	0	141	0	5	0	0	2	0	0	19	0
Lane Group Flow (vph)	0	458	75	0	92	0	251	274	0	7	544	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		28.0	28.0		28.0		43.6	38.1		30.9	29.9	
Effective Green, g (s)		28.0	28.0		28.0		43.6	38.1		30.9	29.9	
Actuated g/C Ratio		0.35	0.35		0.35		0.54	0.47		0.38	0.37	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		467	533		572		323	883		423	646	
v/s Ratio Prot							c0.09	0.15		0.00	c0.31	
v/s Ratio Perm		c0.34	0.05		0.06		0.33			0.01		
v/c Ratio		0.98	0.14		0.16		0.78	0.31		0.02	0.84	
Uniform Delay, d1		26.0	18.0		18.2		14.6	13.1		15.4	23.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		36.5	0.1		0.1		11.2	0.2		0.0	9.7	
Delay (s)		62.5	18.2		18.3		25.7	13.3		15.4	32.9	
Level of Service		E	B		B		C	B		B	C	
Approach Delay (s)		48.3			18.3			19.2			32.7	
Approach LOS		D			B			B			C	
Intersection Summary												
HCM 2000 Control Delay			33.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			80.6				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			82.6%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Washington Street & 15th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	44	9	15	30	126	30	33	534	59	43	475	115
Future Volume (vph)	44	9	15	30	126	30	33	534	59	43	475	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1612			1799		1786	1849		1769	1798	
Flt Permitted		0.76			0.94		0.27	1.00		0.26	1.00	
Satd. Flow (perm)		1261			1706		499	1849		488	1798	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	10	16	32	134	32	35	568	63	46	505	122
RTOR Reduction (vph)	0	13	0	0	12	0	0	6	0	0	12	0
Lane Group Flow (vph)	0	60	0	0	186	0	35	625	0	46	615	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.1			11.1		26.7	25.1		26.7	25.1	
Effective Green, g (s)		11.1			11.1		26.7	25.1		26.7	25.1	
Actuated g/C Ratio		0.22			0.22		0.52	0.49		0.52	0.49	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		272			369		299	904		293	879	
v/s Ratio Prot							0.00	0.34		c0.00	c0.34	
v/s Ratio Perm		0.05			c0.11		0.06			0.08		
v/c Ratio		0.22			0.50		0.12	0.69		0.16	0.70	
Uniform Delay, d1		16.5			17.7		6.9	10.1		7.0	10.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			1.1		0.2	2.3		0.3	2.5	
Delay (s)		17.0			18.8		7.1	12.4		7.3	12.6	
Level of Service		B			B		A	B		A	B	
Approach Delay (s)		17.0			18.8			12.1			12.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.2									
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			51.3									
Intersection Capacity Utilization			55.3%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Washington Street & Abernethy Road

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	7	203	1	33	6	269	339	34	405	1
Future Volume (vph)	2	0	7	203	1	33	6	269	339	34	405	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.89		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1649		1734	1528		1784	1881	1562	1749	1844	
Flt Permitted		0.96		0.75	1.00		0.43	1.00	1.00	0.58	1.00	
Satd. Flow (perm)		1607		1371	1528		813	1881	1562	1063	1844	
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)	2	0	8	226	1	37	7	299	377	38	450	1
RTOR Reduction (vph)	0	7	0	0	26	0	0	0	200	0	0	0
Lane Group Flow (vph)	0	3	0	226	12	0	7	299	177	38	451	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4				8
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		12.2		12.2	12.2		18.7	18.7	18.7	18.7	18.7	
Effective Green, g (s)		12.2		12.2	12.2		18.7	18.7	18.7	18.7	18.7	
Actuated g/C Ratio		0.31		0.31	0.31		0.47	0.47	0.47	0.47	0.47	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		491		419	467		381	881	732	498	864	
v/s Ratio Prot					0.01			0.16			c0.24	
v/s Ratio Perm		0.00		c0.16			0.01		0.11	0.04		
v/c Ratio		0.01		0.54	0.03		0.02	0.34	0.24	0.08	0.52	
Uniform Delay, d1		9.6		11.5	9.7		5.7	6.7	6.4	5.8	7.5	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		1.3	0.0		0.0	0.2	0.2	0.1	0.6	
Delay (s)		9.6		12.9	9.7		5.7	6.9	6.5	5.9	8.0	
Level of Service		A		B	A		A	A	A	A	A	
Approach Delay (s)		9.6			12.4			6.7			7.9	
Approach LOS		A			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.2			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			39.9			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			53.7%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

11: Washington Street & Amtrak Station Access

04/18/2017

																											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR															
Lane Configurations																											
Traffic Volume (veh/h)	14	0	20	2	0	1	20	283	1	0	418	13															
Future Volume (Veh/h)	14	0	20	2	0	1	20	283	1	0	418	13															
Sign Control		Stop			Stop			Free			Free																
Grade		0%			0%			0%			0%																
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92															
Hourly flow rate (vph)	15	0	22	2	0	1	22	308	1	0	454	14															
Pedestrians																											
Lane Width (ft)																											
Walking Speed (ft/s)																											
Percent Blockage																											
Right turn flare (veh)																											
Median type								None			None																
Median storage (veh)																											
Upstream signal (ft)								691																			
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99																	
vC, conflicting volume	814	814	461	828	820	308	468			309																	
vC1, stage 1 conf vol																											
vC2, stage 2 conf vol																											
vCu, unblocked vol	806	806	461	821	813	295	468			295																	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1																	
tC, 2 stage (s)																											
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2																	
p0 queue free %	95	100	96	99	100	100	98			100																	
cM capacity (veh/h)	292	306	600	275	303	736	1094			1252																	
Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2																					
Volume Total	37	3	22	309	0	468																					
Volume Left	15	2	22	0	0	0																					
Volume Right	22	1	0	1	0	14																					
cSH	420	348	1094	1700	1700	1700																					
Volume to Capacity	0.09	0.01	0.02	0.18	0.00	0.28																					
Queue Length 95th (ft)	7	1	2	0	0	0																					
Control Delay (s)	14.4	15.4	8.4	0.0	0.0	0.0																					
Lane LOS	B	C	A																								
Approach Delay (s)	14.4	15.4	0.6																								
Approach LOS	B	C																									
Intersection Summary																											
Average Delay				0.9																							
Intersection Capacity Utilization				32.8%	ICU Level of Service				A																		
Analysis Period (min)				15																							

HCM 2010 TWSC
11: Washington Street & Amtrak Station Access

04/18/2017

Intersection												
Int Delay, s/veh	0.9											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↙	↗		↙	↗	
Traffic Vol, veh/h	14	0	20	2	0	1	20	283	1	0	418	13
Future Vol, veh/h	14	0	20	2	0	1	20	283	1	0	418	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	22	2	0	1	22	308	1	0	454	14
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	813	813	461	824	820	308	468	0	0	309	0	0
Stage 1	461	461	-	352	352	-	-	-	-	-	-	-
Stage 2	352	352	-	472	468	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	297	313	600	292	310	732	1094	-	-	1252	-	-
Stage 1	581	565	-	665	632	-	-	-	-	-	-	-
Stage 2	665	632	-	573	561	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	292	307	600	277	304	732	1094	-	-	1252	-	-
Mov Cap-2 Maneuver	292	307	-	277	304	-	-	-	-	-	-	-
Stage 1	569	565	-	652	619	-	-	-	-	-	-	-
Stage 2	651	619	-	552	561	-	-	-	-	-	-	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	14.4			15.4			0.5			0		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	1094	-	-	349	418	1252	-	-				
HCM Lane V/C Ratio	0.02	-	-	0.009	0.088	-	-	-				
HCM Control Delay (s)	8.4	-	-	15.4	14.4	0	-	-				
HCM Lane LOS	A	-	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0	0.3	0	-	-				

HCM Signalized Intersection Capacity Analysis

12: Washington Street & Praire Schooner Way

04/18/2017



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	343	277	344	115	78	173
Future Volume (vph)	343	277	344	115	78	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3367	1553	3395		1735	3471
Flt Permitted	0.95	1.00	1.00		0.31	1.00
Satd. Flow (perm)	3367	1553	3395		560	3471
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	385	311	387	129	88	194
RTOR Reduction (vph)	0	145	59	0	0	0
Lane Group Flow (vph)	385	166	457	0	88	194
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	10.2	16.9	11.6		22.8	22.8
Effective Green, g (s)	10.2	16.9	11.6		22.8	22.8
Actuated g/C Ratio	0.24	0.40	0.28		0.54	0.54
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	817	791	937		491	1884
v/s Ratio Prot	c0.11	c0.03	c0.13		0.03	0.06
v/s Ratio Perm		0.07			0.07	
v/c Ratio	0.47	0.21	0.49		0.18	0.10
Uniform Delay, d1	13.6	8.2	12.7		5.0	4.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.4		0.2	0.0
Delay (s)	14.0	8.3	13.1		5.2	4.7
Level of Service	B	A	B		A	A
Approach Delay (s)	11.5		13.1			4.8
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

13: Washington Street & Clackamas River Drive

04/18/2017



Movement	NWL	NWR	NET	NER	SWL	SWT
Right Turn Channelized				MOYes		
Traffic Volume (veh/h)	78	105	344	262	192	181
Future Volume (veh/h)	78	105	344	262	192	181
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	87	117	382	291	213	201
Approach Volume (veh/h)	204		382			414
Crossing Volume (veh/h)	382		213			87
High Capacity (veh/h)	1025		1172			1294
High v/c (veh/h)	0.20		0.33			0.32
Low Capacity (veh/h)	836		968			1079
Low v/c (veh/h)	0.24		0.39			0.38
Intersection Summary						
Maximum v/c High			0.33			
Maximum v/c Low			0.39			
Intersection Capacity Utilization			59.0%		ICU Level of Service	B

HCM 2010 Roundabout
13: Washington Street & Clackamas River Drive

04/18/2017

Intersection				
Intersection Delay, s/veh	6.7			
Intersection LOS	A			
Approach	NW	NE	SW	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	204	673	414	
Demand Flow Rate, veh/h	220	693	422	
Vehicles Circulating, veh/h	393	217	94	
Vehicles Exiting, veh/h	217	299	519	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	4	0	0	
Ped Cap Adj	0.999	1.000	1.000	
Approach Delay, s/veh	8.6	5.3	8.1	
Approach LOS	A	A	A	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	T	R	LT
Assumed Moves	LR	T	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	220	393	300	422
Cap Entry Lane, veh/h	763	910	1957	1029
Entry HV Adj Factor	0.927	0.971	0.971	0.981
Flow Entry, veh/h	204	382	291	414
Cap Entry, veh/h	707	883	1900	1009
V/C Ratio	0.289	0.432	0.153	0.410
Control Delay, s/veh	8.6	9.3	0.0	8.1
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	2

HCM Signalized Intersection Capacity Analysis

14: Praire Schooner Way/Clackamas River Drive

04/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	183	0	0	417	0	2074	138	0	3236	587
Future Volume (vph)	0	0	183	0	0	417	0	2074	138	0	3236	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	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			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	189	0	0	430	0	2138	142	0	3336	605
RTOR Reduction (vph)	0	0	15	0	0	24	0	0	41	0	0	174
Lane Group Flow (vph)	0	0	174	0	0	406	0	2138	101	0	3336	431
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)			16.5			16.5		63.0	63.0		63.0	63.0
Effective Green, g (s)			16.5			16.5		63.0	63.0		63.0	63.0
Actuated g/C Ratio			0.19			0.19		0.71	0.71		0.71	0.71
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			524			514		3619	1126		3619	1126
v/s Ratio Prot								0.42			c0.66	
v/s Ratio Perm			0.06			c0.15			0.06			0.27
v/c Ratio			0.33			0.79		0.59	0.09		0.92	0.38
Uniform Delay, d1			31.2			34.3		6.3	3.9		10.7	5.0
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.4			7.9		0.3	0.0		4.5	0.2
Delay (s)			31.6			42.2		6.6	4.0		15.2	5.3
Level of Service			C			D		A	A		B	A
Approach Delay (s)		31.6			42.2			6.4			13.7	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.6			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			88.5			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			76.4%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: OR-99E & I-205 SB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕↕	↔	↔	↕↕↕
Traffic Volume (vph)	416	247	1477	301	661	959
Future Volume (vph)	416	247	1477	301	661	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	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)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	452	268	1605	327	718	1042
RTOR Reduction (vph)	0	0	0	229	0	0
Lane Group Flow (vph)	452	268	1605	98	718	1042
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.4	49.5	27.0	27.0	33.1	64.6
Effective Green, g (s)	16.4	49.5	27.0	27.0	33.1	64.6
Actuated g/C Ratio	0.18	0.55	0.30	0.30	0.37	0.72
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	596	905	1496	453	644	3614
v/s Ratio Prot	c0.14	0.11	c0.32		c0.41	0.21
v/s Ratio Perm		0.07		0.06		
v/c Ratio	0.76	0.30	1.07	0.22	1.11	0.29
Uniform Delay, d1	34.9	10.9	31.5	23.6	28.4	4.5
Progression Factor	1.00	1.00	0.97	2.31	1.00	1.00
Incremental Delay, d2	5.5	0.2	43.3	0.9	71.4	0.2
Delay (s)	40.4	11.1	73.8	55.3	99.8	4.7
Level of Service	D	B	E	E	F	A
Approach Delay (s)	29.5		70.7			43.5
Approach LOS	C		E			D
Intersection Summary						
HCM 2000 Control Delay			53.1		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.02			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			88.3%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: OR-99E & I-205 NB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	159	444	1340	977	267	1109
Future Volume (vph)	159	444	1340	977	267	1109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	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)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	467	1411	1028	281	1167
RTOR Reduction (vph)	0	258	0	325	0	0
Lane Group Flow (vph)	167	209	1411	703	281	1167
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.2	15.2	44.5	44.5	16.8	65.8
Effective Green, g (s)	15.2	15.2	44.5	44.5	16.8	65.8
Actuated g/C Ratio	0.17	0.17	0.49	0.49	0.19	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	290	259	2442	739	320	3611
v/s Ratio Prot	0.10		0.29		0.16	0.24
v/s Ratio Perm		0.14		0.47		
v/c Ratio	0.58	0.81	0.58	0.95	0.88	0.32
Uniform Delay, d1	34.4	36.0	16.1	21.7	35.6	4.3
Progression Factor	1.00	1.00	1.00	1.00	0.79	1.49
Incremental Delay, d2	2.8	16.7	1.0	23.1	21.4	0.2
Delay (s)	37.2	52.7	17.1	44.8	49.5	6.6
Level of Service	D	D	B	D	D	A
Approach Delay (s)	48.6		28.8			14.9
Approach LOS	D		C			B
Intersection Summary						
HCM 2000 Control Delay			27.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.91			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			83.1%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

3: OR-99E & 15th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (veh/h)	1973	61	0	1287	0	296
Future Volume (Veh/h)	1973	61	0	1287	0	296
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2122	66	0	1384	0	318
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.52		0.56	0.52
vC, conflicting volume			2188		2616	1094
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1441		1484	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	44
cM capacity (veh/h)			233		65	565
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1415	773	461	461	461	318
Volume Left	0	0	0	0	0	0
Volume Right	0	66	0	0	0	318
cSH	1700	1700	1700	1700	1700	565
Volume to Capacity	0.83	0.45	0.27	0.27	0.27	0.56
Queue Length 95th (ft)	0	0	0	0	0	87
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	19.3
Lane LOS						C
Approach Delay (s)	0.0		0.0			19.3
Approach LOS						C
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			81.5%		ICU Level of Service	D
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	6.2					
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	1973	61	0	1287	0	296
Future Vol, veh/h	1973	61	0	1287	0	296
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2122	66	0	1384	0	318
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1094
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	332
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	332
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	NB		SB		NW	
HCM Control Delay, s	0		0		75.6	
HCM LOS					F	
Minor Lane/Major Mvmt	NBT	NBRNWLn1	SBT			
Capacity (veh/h)	-	-	332		-	
HCM Lane V/C Ratio	-	-	0.959		-	
HCM Control Delay (s)	-	-	75.6		-	
HCM Lane LOS	-	-	F		-	
HCM 95th %tile Q(veh)	-	-	10.1		-	

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↖	↗
Traffic Volume (vph)	1532	25	336	966	80	513
Future Volume (vph)	1532	25	336	966	80	513
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3397		1703	3406	1736	1553
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3397		129	3406	1736	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1630	27	357	1028	85	546
RTOR Reduction (vph)	1	0	0	0	0	7
Lane Group Flow (vph)	1656	0	357	1028	85	539
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	50.9		82.0	82.0	9.0	35.6
Effective Green, g (s)	50.9		82.0	82.0	9.0	35.6
Actuated g/C Ratio	0.51		0.82	0.82	0.09	0.36
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1729		524	2792	156	622
v/s Ratio Prot	c0.49		0.18	0.30	0.05	c0.23
v/s Ratio Perm			0.38			0.12
v/c Ratio	0.96		0.68	0.37	0.54	0.87
Uniform Delay, d1	23.5		26.2	2.3	43.5	30.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	13.7		3.6	0.1	3.9	12.1
Delay (s)	37.2		29.8	2.4	47.4	42.1
Level of Service	D		C	A	D	D
Approach Delay (s)	37.2			9.5	42.8	
Approach LOS	D			A	D	
Intersection Summary						
HCM 2000 Control Delay		27.7		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.96				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		13.5
Intersection Capacity Utilization		82.4%		ICU Level of Service		E
Analysis Period (min)		15				
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations													
Traffic Volume (veh/h)	22	307	29	133	577	12	6	25	62	0	12	11	
Future Volume (Veh/h)	22	307	29	133	577	12	6	25	62	0	12	11	
Sign Control	Free				Free				Stop		Stop		
Grade	0%				0%				0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	24	330	31	143	620	13	6	27	67	0	13	12	
Pedestrians	2				10				4				
Lane Width (ft)	12.0				12.0				12.0				
Walking Speed (ft/s)	3.5				3.5				3.5				
Percent Blockage	0				1				0				
Right turn flare (veh)									5				
Median type	None				None								
Median storage (veh)													
Upstream signal (ft)	187				537								
pX, platoon unblocked	0.92							0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	633			365				1330	1316	360	1348	1326	628
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	561			365				1316	1301	360	1335	1311	556
tC, single (s)	4.1			4.1				7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	2.2			2.2				3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	97			88				94	78	90	100	90	98
cM capacity (veh/h)	924			1184				95	123	661	80	126	492
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1								
Volume Total	24	361	776	100	25								
Volume Left	24	0	143	6	0								
Volume Right	0	31	13	67	12								
cSH	924	1700	1184	357	196								
Volume to Capacity	0.03	0.21	0.12	0.28	0.13								
Queue Length 95th (ft)	2	0	10	28	11								
Control Delay (s)	9.0	0.0	2.9	22.9	26.0								
Lane LOS	A		A	C	D								
Approach Delay (s)	0.6		2.9	22.9	26.0								
Approach LOS				C	D								
Intersection Summary													
Average Delay			4.2										
Intersection Capacity Utilization			74.8%		ICU Level of Service				D				
Analysis Period (min)			15										

Intersection												
Int Delay, s/veh	3.5											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	22	307	29	133	577	12	6	25	62	0	12	11
Future Vol, veh/h	22	307	29	133	577	12	6	25	62	0	12	11
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	24	330	31	143	620	13	6	27	67	0	13	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	633	0	0	365	0	0	1324	1316	360	1329	1326	629
Stage 1	-	-	-	-	-	-	397	397	-	913	913	-
Stage 2	-	-	-	-	-	-	927	919	-	416	413	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	940	-	-	1188	-	-	129	153	669	133	157	486
Stage 1	-	-	-	-	-	-	615	591	-	330	355	-
Stage 2	-	-	-	-	-	-	313	341	-	618	597	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	938	-	-	1177	-	-	97	121	660	83	124	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	97	121	-	83	124	-
Stage 1	-	-	-	-	-	-	597	574	-	322	288	-
Stage 2	-	-	-	-	-	-	236	277	-	511	580	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.5	1.6	23.6	26.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	115	660	1177	-	-	938	-	- 193
HCM Lane V/C Ratio	0.29	0.101	0.122	-	-	0.025	-	- 0.128
HCM Control Delay (s)	48.6	11.1	8.5	0	-	8.9	-	- 26.4
HCM Lane LOS	E	B	A	A	-	A	-	- D
HCM 95th %tile Q(veh)	1.1	0.3	0.4	-	-	0.1	-	- 0.4

HCM Signalized Intersection Capacity Analysis

6: Washington Street & 7th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	356	50	0	390	316	150	286	8	179	147	49
Future Volume (vph)	0	356	50	0	390	316	150	286	8	179	147	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		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		1.00	0.96	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881	1564		1863	1538	1736	1819		1703	1715	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1881	1564		1863	1538	1736	1819		1703	1715	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	419	59	0	459	372	176	336	9	211	173	58
RTOR Reduction (vph)	0	0	41	0	0	256	0	1	0	0	18	0
Lane Group Flow (vph)	0	419	18	0	459	116	176	344	0	211	213	0
Confl. Peds. (#/hr)	5		1	1		5	2		4	4		2
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	4%	4%	4%	6%	6%	6%
Turn Type		NA	Perm		NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases			6			2						
Actuated Green, G (s)		19.2	19.2		19.2	19.2	15.6	15.6		13.1	13.1	
Effective Green, g (s)		19.2	19.2		19.2	19.2	15.6	15.6		13.1	13.1	
Actuated g/C Ratio		0.31	0.31		0.31	0.31	0.25	0.25		0.21	0.21	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		588	489		582	480	441	462		363	365	
v/s Ratio Prot		0.22			c0.25		0.10	c0.19		0.12	c0.12	
v/s Ratio Perm			0.01			0.08						
v/c Ratio		0.71	0.04		0.79	0.24	0.40	0.74		0.58	0.58	
Uniform Delay, d1		18.7	14.7		19.2	15.7	19.0	21.1		21.7	21.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.1	0.0		7.0	0.3	0.6	6.4		2.4	2.4	
Delay (s)		22.7	14.7		26.3	16.0	19.6	27.4		24.1	24.1	
Level of Service		C	B		C	B	B	C		C	C	
Approach Delay (s)		21.7			21.6			24.8			24.1	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			22.9									
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			61.4							13.5		
Intersection Capacity Utilization			57.2%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Washington Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	205	35	117	3	41	3	323	221	8	1	304	311
Future Volume (vph)	205	35	117	3	41	3	323	221	8	1	304	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749	1507		1840		1752	1834		1716	1649	
Flt Permitted		0.75	1.00		0.98		0.12	1.00		0.60	1.00	
Satd. Flow (perm)		1373	1507		1813		222	1834		1081	1649	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	233	40	133	3	47	3	367	251	9	1	345	353
RTOR Reduction (vph)	0	0	104	0	2	0	0	1	0	0	40	0
Lane Group Flow (vph)	0	273	29	0	51	0	367	259	0	1	658	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		19.2	19.2		19.2		60.3	54.9		40.6	39.7	
Effective Green, g (s)		19.2	19.2		19.2		60.3	54.9		40.6	39.7	
Actuated g/C Ratio		0.22	0.22		0.22		0.68	0.62		0.46	0.45	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		297	326		393		429	1137		502	739	
v/s Ratio Prot							c0.16	0.14		0.00	0.40	
v/s Ratio Perm		c0.20	0.02		0.03		c0.43			0.00		
v/c Ratio		0.92	0.09		0.13		0.86	0.23		0.00	0.89	
Uniform Delay, d1		33.9	27.7		27.9		22.2	7.4		13.0	22.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		31.6	0.1		0.1		15.3	0.1		0.0	12.9	
Delay (s)		65.5	27.8		28.1		37.5	7.5		13.0	35.3	
Level of Service		E	C		C		D	A		B	D	
Approach Delay (s)		53.1			28.1			25.1			35.3	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay		35.5			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.90										
Actuated Cycle Length (s)		88.5			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		84.2%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Washington Street & 15th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	62	15	14	11	71	38	28	319	94	59	575	280
Future Volume (vph)	62	15	14	11	71	38	28	319	94	59	575	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.96		1.00	0.97		1.00	0.95	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1493			1663		1703	1722		1735	1725	
Flt Permitted		0.66			0.97		0.15	1.00		0.41	1.00	
Satd. Flow (perm)		1016			1619		260	1722		748	1725	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	70	17	16	12	80	43	31	358	106	66	646	315
RTOR Reduction (vph)	0	8	0	0	19	0	0	12	0	0	17	0
Lane Group Flow (vph)	0	95	0	0	116	0	31	452	0	66	944	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.1			12.1		47.0	45.3		52.0	47.8	
Effective Green, g (s)		12.1			12.1		47.0	45.3		52.0	47.8	
Actuated g/C Ratio		0.16			0.16		0.63	0.60		0.69	0.64	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		163			260		195	1038		573	1097	
v/s Ratio Prot							0.00	0.26		c0.01	c0.55	
v/s Ratio Perm		c0.09			0.07		0.10			0.07		
v/c Ratio		0.59			0.45		0.16	0.44		0.12	0.86	
Uniform Delay, d1		29.2			28.5		9.5	8.0		4.2	11.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.3			1.2		0.4	0.3		0.1	7.0	
Delay (s)		34.5			29.7		9.9	8.3		4.3	18.0	
Level of Service		C			C		A	A		A	B	
Approach Delay (s)		34.5			29.7			8.4			17.1	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay		16.7			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		75.1			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		68.4%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Washington Street & Abernethy Road

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	3	6	408	2	54	6	250	152	31	510	4
Future Volume (vph)	5	3	6	408	2	54	6	250	152	31	510	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.94		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1738		1717	1546		1701	1792	1491	1734	1824	
Flt Permitted		0.94		0.75	1.00		0.21	1.00	1.00	0.54	1.00	
Satd. Flow (perm)		1672		1350	1546		369	1792	1491	984	1824	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	6	3	7	474	2	63	7	291	177	36	593	5
RTOR Reduction (vph)	0	4	0	0	36	0	0	0	106	0	1	0
Lane Group Flow (vph)	0	12	0	474	29	0	7	291	71	36	597	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4				8
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		22.3		22.3	22.3		20.9	20.9	20.9	20.9	20.9	
Effective Green, g (s)		22.3		22.3	22.3		20.9	20.9	20.9	20.9	20.9	
Actuated g/C Ratio		0.43		0.43	0.43		0.40	0.40	0.40	0.40	0.40	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		714		576	660		147	717	596	393	730	
v/s Ratio Prot					0.02			0.16			c0.33	
v/s Ratio Perm		0.01		c0.35			0.02		0.05	0.04		
v/c Ratio		0.02		0.82	0.04		0.05	0.41	0.12	0.09	0.82	
Uniform Delay, d1		8.6		13.2	8.7		9.6	11.2	9.9	9.7	14.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		9.3	0.0		0.1	0.4	0.1	0.1	7.1	
Delay (s)		8.6		22.5	8.8		9.7	11.6	9.9	9.8	21.1	
Level of Service		A		C	A		A	B	A	A	C	
Approach Delay (s)		8.6			20.8			10.9			20.4	
Approach LOS		A			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			17.7			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			52.2			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			63.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

10: Washington Street & Site Access

04/18/2017



Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	15	63	54	255	482	18
Future Volume (Veh/h)	15	63	54	255	482	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	68	59	277	524	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				212		
pX, platoon unblocked	0.89					
vC, conflicting volume	929	534	544			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	860	534	544			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	88	94			
cM capacity (veh/h)	274	546	1025			
Direction, Lane #	SE 1	NE 1	SW 1			
Volume Total	84	336	544			
Volume Left	16	59	0			
Volume Right	68	0	20			
cSH	459	1025	1700			
Volume to Capacity	0.18	0.06	0.32			
Queue Length 95th (ft)	17	5	0			
Control Delay (s)	14.6	2.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.6	2.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			57.6%	ICU Level of Service		B
Analysis Period (min)			15			

HCM 2010 TWSC
10: Washington Street & Site Access

04/18/2017

Intersection

Int Delay, s/veh 1.8

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	15	63	54	255	482	18
Future Vol, veh/h	15	63	54	255	482	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	68	59	277	524	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	929	534	543	0	-	0
Stage 1	534	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	297	546	1026	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	277	546	1026	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	635	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	14.6	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1026	-	460	-	-
HCM Lane V/C Ratio	0.057	-	0.184	-	-
HCM Control Delay (s)	8.7	0	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

HCM Unsignalized Intersection Capacity Analysis

11: Washington Street & Amtrak Station Access

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	0	82	1	0	0	87	180	3	2	417	41
Future Volume (Veh/h)	29	0	82	1	0	0	87	180	3	2	417	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	0	89	1	0	0	95	196	3	2	453	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								691				
pX, platoon unblocked												
vC, conflicting volume	866	868	476	934	890	198	498			199		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	866	868	476	934	890	198	498			199		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	85	99	100	100	91			100		
cM capacity (veh/h)	255	264	589	195	257	844	1066			1373		
Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2						
Volume Total	121	1	95	199	2	498						
Volume Left	32	1	95	0	2	0						
Volume Right	89	0	0	3	0	45						
cSH	437	195	1066	1700	1373	1700						
Volume to Capacity	0.28	0.01	0.09	0.12	0.00	0.29						
Queue Length 95th (ft)	28	0	7	0	0	0						
Control Delay (s)	16.3	23.6	8.7	0.0	7.6	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	16.3	23.6	2.8		0.0							
Approach LOS	C	C										
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			45.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM 2010 TWSC
11: Washington Street & Amtrak Station Access

04/18/2017

Intersection												
Int Delay, s/veh	3.1											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	29	0	82	1	0	0	87	180	3	2	417	41
Future Vol, veh/h	29	0	82	1	0	0	87	180	3	2	417	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	89	1	0	0	95	196	3	2	453	45
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	866	868	476	910	888	197	498	0	0	199	0	0
Stage 1	480	480	-	386	386	-	-	-	-	-	-	-
Stage 2	386	388	-	524	502	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	290	589	255	283	844	1066	-	-	1373	-	-
Stage 1	567	554	-	637	610	-	-	-	-	-	-	-
Stage 2	637	609	-	537	542	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	255	264	589	201	257	844	1066	-	-	1373	-	-
Mov Cap-2 Maneuver	255	264	-	201	257	-	-	-	-	-	-	-
Stage 1	516	553	-	580	556	-	-	-	-	-	-	-
Stage 2	580	555	-	455	541	-	-	-	-	-	-	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	16.3			23			2.8			0		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	1066	-	-	201	439	1373	-	-				
HCM Lane V/C Ratio	0.089	-	-	0.005	0.275	0.002	-	-				
HCM Control Delay (s)	8.7	-	-	23	16.3	7.6	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	0	1.1	0	-	-				

HCM Signalized Intersection Capacity Analysis

12: Washington Street & Praire Schooner Way

04/18/2017



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	327	166	281	46	72	264
Future Volume (vph)	327	166	281	46	72	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3155	1455	3127		1736	3471
Flt Permitted	0.95	1.00	1.00		0.38	1.00
Satd. Flow (perm)	3155	1455	3127		686	3471
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	363	184	312	51	80	293
RTOR Reduction (vph)	0	113	24	0	0	0
Lane Group Flow (vph)	363	71	339	0	80	293
Heavy Vehicles (%)	11%	11%	13%	13%	4%	4%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	10.1	15.0	10.6		20.0	20.0
Effective Green, g (s)	10.1	15.0	10.6		20.0	20.0
Actuated g/C Ratio	0.26	0.38	0.27		0.51	0.51
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	814	725	847		482	1775
v/s Ratio Prot	c0.12	0.01	c0.11		0.02	c0.08
v/s Ratio Perm		0.04			0.06	
v/c Ratio	0.45	0.10	0.40		0.17	0.17
Uniform Delay, d1	12.2	7.7	11.7		5.2	5.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.3		0.2	0.0
Delay (s)	12.5	7.8	12.0		5.3	5.1
Level of Service	B	A	B		A	A
Approach Delay (s)	10.9		12.0			5.2
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

13: Washington Street & Clackamas River Drive

04/18/2017



Movement	NWL	NWR	NET	NER	SWL	SWT
Right Turn Channelized				MOYes		
Traffic Volume (veh/h)	75	67	180	235	282	267
Future Volume (veh/h)	75	67	180	235	282	267
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	85	76	205	267	320	303
Approach Volume (veh/h)	161		205			623
Crossing Volume (veh/h)	205		320			85
High Capacity (veh/h)	1179		1077			1296
High v/c (veh/h)	0.14		0.19			0.48
Low Capacity (veh/h)	975		883			1080
Low v/c (veh/h)	0.17		0.23			0.58
Intersection Summary						
Maximum v/c High			0.48			
Maximum v/c Low			0.58			
Intersection Capacity Utilization			57.4%		ICU Level of Service	B

HCM 2010 Roundabout
13: Washington Street & Clackamas River Drive

04/18/2017

Intersection				
Intersection Delay, s/veh	8.3			
Intersection LOS	A			
Approach	NW	NE	SW	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	161	472	623	
Demand Flow Rate, veh/h	174	520	642	
Vehicles Circulating, veh/h	225	330	92	
Vehicles Exiting, veh/h	330	404	307	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	6.3	3.5	12.5	
Approach LOS	A	A	B	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	T	R	LT
Assumed Moves	LR	T	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	174	226	294	642
Cap Entry Lane, veh/h	902	812	2090	1031
Entry HV Adj Factor	0.925	0.909	0.909	0.970
Flow Entry, veh/h	161	205	267	623
Cap Entry, veh/h	835	738	1900	1000
V/C Ratio	0.193	0.278	0.141	0.623
Control Delay, s/veh	6.3	8.1	0.0	12.5
LOS	A	A	A	B
95th %tile Queue, veh	1	1	0	5

HCM Signalized Intersection Capacity Analysis

14: Praire Schooner Way/Clackamas River Drive

04/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗↘			↗↘		↗↘↗	↘		↗↘↗	↘
Traffic Volume (vph)	0	0	107	0	0	487	0	2558	156	0	1816	492
Future Volume (vph)	0	0	107	0	0	487	0	2558	156	0	1816	492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
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	1.00
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)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	110	0	0	502	0	2637	161	0	1872	507
RTOR Reduction (vph)	0	0	19	0	0	19	0	0	63	0	0	199
Lane Group Flow (vph)	0	0	91	0	0	483	0	2637	98	0	1872	308
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)			15.7			15.7		38.1	38.1		38.1	38.1
Effective Green, g (s)			15.7			15.7		38.1	38.1		38.1	38.1
Actuated g/C Ratio			0.25			0.25		0.61	0.61		0.61	0.61
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			690			634		3026	922		2968	924
v/s Ratio Prot								c0.53			0.38	
v/s Ratio Perm			0.03			c0.19			0.06			0.20
v/c Ratio			0.13			0.76		0.87	0.11		0.63	0.33
Uniform Delay, d1			18.3			21.8		10.3	5.2		7.9	6.1
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.1			5.4		3.0	0.1		0.4	0.2
Delay (s)			18.4			27.2		13.3	5.2		8.3	6.3
Level of Service			B			C		B	A		A	A
Approach Delay (s)		18.4			27.2			12.9			7.9	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.2			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			62.8			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			74.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: OR-99E & I-205 SB Ramps

04/18/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰	↰↰↰	↰	↰	↰↰↰
Traffic Volume (vph)	909	328	1309	243	511	1717
Future Volume (vph)	909	328	1309	243	511	1717
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	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	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	937	338	1349	251	527	1770
RTOR Reduction (vph)	0	0	0	180	0	0
Lane Group Flow (vph)	937	338	1349	71	527	1770
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.6	51.1	25.4	25.4	26.5	56.4
Effective Green, g (s)	24.6	51.1	25.4	25.4	26.5	56.4
Actuated g/C Ratio	0.27	0.57	0.28	0.28	0.29	0.63
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	929	968	1435	430	521	3186
v/s Ratio Prot	c0.28	0.10	c0.27		c0.30	0.35
v/s Ratio Perm		0.11		0.05		
v/c Ratio	1.01	0.35	0.94	0.16	1.01	0.56
Uniform Delay, d1	32.7	10.5	31.6	24.3	31.8	9.6
Progression Factor	1.00	1.00	0.93	2.28	1.00	1.00
Incremental Delay, d2	31.7	0.2	11.2	0.7	42.3	0.7
Delay (s)	64.4	10.7	40.4	56.0	74.1	10.3
Level of Service	E	B	D	E	E	B
Approach Delay (s)	50.1		42.9			25.0
Approach LOS	D		D			C
Intersection Summary						
HCM 2000 Control Delay			36.7		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.99			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			90.8%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

2: OR-99E & I-205 NB Ramps

04/18/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	129	455	1161	846	432	2119
Future Volume (vph)	129	455	1161	846	432	2119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	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)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	132	464	1185	863	441	2162
RTOR Reduction (vph)	0	389	0	313	0	0
Lane Group Flow (vph)	132	75	1185	550	441	2162
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	12.3	12.3	37.8	37.8	26.4	68.7
Effective Green, g (s)	12.3	12.3	37.8	37.8	26.4	68.7
Actuated g/C Ratio	0.14	0.14	0.42	0.42	0.29	0.76
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	241	216	2115	634	519	3881
v/s Ratio Prot	c0.07		0.24		c0.25	0.43
v/s Ratio Perm		0.05		c0.36		
v/c Ratio	0.55	0.35	0.56	0.87	0.85	0.56
Uniform Delay, d1	36.3	35.2	19.8	23.8	29.9	4.4
Progression Factor	1.00	1.00	1.00	1.00	0.94	0.79
Incremental Delay, d2	2.5	1.0	1.1	14.9	8.9	0.4
Delay (s)	38.8	36.2	20.9	38.8	37.0	3.9
Level of Service	D	D	C	D	D	A
Approach Delay (s)	36.7		28.4			9.5
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			20.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			84.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

3: OR-99E & 15th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (veh/h)	1714	13	0	2271	0	243
Future Volume (Veh/h)	1714	13	0	2271	0	243
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1804	14	0	2391	0	256
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.64		0.73	0.64
vC, conflicting volume			1821		2611	912
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1159		966	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	63
cM capacity (veh/h)			379		184	693
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1203	615	797	797	797	256
Volume Left	0	0	0	0	0	0
Volume Right	0	14	0	0	0	256
cSH	1700	1700	1700	1700	1700	693
Volume to Capacity	0.71	0.36	0.47	0.47	0.47	0.37
Queue Length 95th (ft)	0	0	0	0	0	43
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	13.2
Lane LOS						B
Approach Delay (s)	0.0		0.0			13.2
Approach LOS						B
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			69.5%		ICU Level of Service	C
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.5					
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑↱			↑↑↑↑		↱↑
Traffic Vol, veh/h	1714	13	0	2271	0	243
Future Vol, veh/h	1714	13	0	2271	0	243
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1804	14	0	2391	0	256
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	912
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	425
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	424
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	NB		SB		NW	
HCM Control Delay, s	0		0		25.6	
HCM LOS					D	
Minor Lane/Major Mvmt	NBT	NBRNWLn1	SBT			
Capacity (veh/h)	-	- 424	-			
HCM Lane V/C Ratio	-	- 0.603	-			
HCM Control Delay (s)	-	- 25.6	-			
HCM Lane LOS	-	- D	-			
HCM 95th %tile Q(veh)	-	- 3.9	-			

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↖	↗
Traffic Volume (vph)	1345	53	455	1857	71	376
Future Volume (vph)	1345	53	455	1857	71	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3449		1770	3539	1787	1599
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3449		135	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1387	55	469	1914	73	388
RTOR Reduction (vph)	2	0	0	0	0	9
Lane Group Flow (vph)	1440	0	469	1914	73	379
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	50.6		82.7	82.7	8.3	35.9
Effective Green, g (s)	50.6		82.7	82.7	8.3	35.9
Actuated g/C Ratio	0.51		0.83	0.83	0.08	0.36
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1745		562	2926	148	645
v/s Ratio Prot	0.42		c0.23	0.54	0.04	c0.16
v/s Ratio Perm			c0.46			0.08
v/c Ratio	0.82		0.83	0.65	0.49	0.59
Uniform Delay, d1	20.9		27.7	3.3	43.8	26.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6		10.3	0.5	2.6	1.4
Delay (s)	25.5		38.0	3.8	46.4	27.4
Level of Service	C		D	A	D	C
Approach Delay (s)	25.5			10.5	30.4	
Approach LOS	C			B	C	
Intersection Summary						
HCM 2000 Control Delay			17.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			79.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	26	448	30	74	425	12	21	21	164	2	18	24
Future Volume (Veh/h)	26	448	30	74	425	12	21	21	164	2	18	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	28	477	32	79	452	13	22	22	174	2	19	26
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.95						0.95	0.95		0.95	0.95	0.95
vC, conflicting volume	465			518			1211	1181	509	1254	1190	460
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408			518			1195	1164	509	1241	1174	402
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			82	87	68	98	88	96
cM capacity (veh/h)	1096			1039			122	163	552	81	164	618
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1							
Volume Total	28	509	544	218	47							
Volume Left	28	0	79	22	2							
Volume Right	0	32	13	174	26							
cSH	1096	1700	1039	691	257							
Volume to Capacity	0.03	0.30	0.08	0.32	0.18							
Queue Length 95th (ft)	2	0	6	34	16							
Control Delay (s)	8.4	0.0	2.1	19.9	22.1							
Lane LOS	A		A	C	C							
Approach Delay (s)	0.4		2.1	19.9	22.1							
Approach LOS				C	C							
Intersection Summary												
Average Delay			5.0									
Intersection Capacity Utilization			72.5%		ICU Level of Service				C			
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	4.7											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	26	448	30	74	425	12	21	21	164	2	18	24
Future Vol, veh/h	26	448	30	74	425	12	21	21	164	2	18	24
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	28	477	32	79	452	13	22	22	174	2	19	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	465	0	0	518	0	0	1196	1179	509	1182	1189	460
Stage 1	-	-	-	-	-	-	557	557	-	616	616	-
Stage 2	-	-	-	-	-	-	639	622	-	566	573	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1102	-	-	1048	-	-	161	189	560	168	190	605
Stage 1	-	-	-	-	-	-	511	509	-	481	485	-
Stage 2	-	-	-	-	-	-	461	476	-	513	507	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1101	-	-	1041	-	-	126	164	551	92	165	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	126	164	-	92	165	-
Stage 1	-	-	-	-	-	-	494	492	-	469	435	-
Stage 2	-	-	-	-	-	-	378	427	-	324	490	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	1.3	19.9	22
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	143	551	1041	-	-	1101	-	- 258
HCM Lane V/C Ratio	0.312	0.317	0.076	-	-	0.025	-	- 0.181
HCM Control Delay (s)	41.2	14.5	8.7	0	-	8.4	-	- 22
HCM Lane LOS	E	B	A	A	-	A	-	- C
HCM 95th %tile Q(veh)	1.2	1.4	0.2	-	-	0.1	-	- 0.6

HCM Signalized Intersection Capacity Analysis

6: Washington Street & 7th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	521	127	0	354	303	92	190	18	310	273	29
Future Volume (vph)	0	521	127	0	354	303	92	190	18	310	273	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00	0.97	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881	1533		1863	1529	1770	1834		1770	1830	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1881	1533		1863	1529	1770	1834		1770	1830	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	554	135	0	377	322	98	202	19	330	290	31
RTOR Reduction (vph)	0	0	56	0	0	208	0	5	0	0	5	0
Lane Group Flow (vph)	0	554	79	0	377	114	98	216	0	330	316	0
Confl. Peds. (#/hr)	8		12	12		8	7		4	4		7
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases			6			2						
Actuated Green, G (s)		23.3	23.3		23.3	23.3	13.0	13.0		16.2	16.2	
Effective Green, g (s)		23.3	23.3		23.3	23.3	13.0	13.0		16.2	16.2	
Actuated g/C Ratio		0.35	0.35		0.35	0.35	0.20	0.20		0.25	0.25	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		664	541		657	539	348	361		434	449	
v/s Ratio Prot		c0.29			0.20		0.06	c0.12		c0.19	0.17	
v/s Ratio Perm			0.05			0.07						
v/c Ratio		0.83	0.15		0.57	0.21	0.28	0.60		0.76	0.70	
Uniform Delay, d1		19.6	14.6		17.3	14.9	22.5	24.1		23.1	22.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.9	0.1		1.2	0.2	0.4	2.7		7.7	4.9	
Delay (s)		28.5	14.7		18.5	15.1	23.0	26.8		30.8	27.7	
Level of Service		C	B		B	B	C	C		C	C	
Approach Delay (s)		25.8			17.0			25.6			29.2	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.1									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			66.0							13.5		
Intersection Capacity Utilization			67.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Washington Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	397	46	199	15	65	9	231	261	10	6	373	162
Future Volume (vph)	397	46	199	15	65	9	231	261	10	6	373	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1794	1535		1798		1787	1868		1745	1744	
Flt Permitted		0.71	1.00		0.89		0.13	1.00		0.58	1.00	
Satd. Flow (perm)		1340	1535		1613		249	1868		1065	1744	
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)	432	50	216	16	71	10	251	284	11	7	405	176
RTOR Reduction (vph)	0	0	139	0	5	0	0	2	0	0	19	0
Lane Group Flow (vph)	0	482	77	0	92	0	251	293	0	7	562	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.3	29.3		29.3		43.8	38.3		31.5	30.5	
Effective Green, g (s)		29.3	29.3		29.3		43.8	38.3		31.5	30.5	
Actuated g/C Ratio		0.36	0.36		0.36		0.53	0.47		0.38	0.37	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		478	547		575		297	871		416	647	
v/s Ratio Prot							c0.09	0.16		0.00	0.32	
v/s Ratio Perm		c0.36	0.05		0.06		c0.36			0.01		
v/c Ratio		1.01	0.14		0.16		0.85	0.34		0.02	0.87	
Uniform Delay, d1		26.4	17.9		18.0		15.8	13.9		15.7	23.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		43.3	0.1		0.1		19.3	0.2		0.0	11.9	
Delay (s)		69.7	18.0		18.1		35.1	14.1		15.7	35.8	
Level of Service		E	B		B		D	B		B	D	
Approach Delay (s)		53.7			18.1			23.7			35.6	
Approach LOS		D			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			37.9				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			82.1				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			84.8%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Washington Street & 15th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	44	9	15	30	126	34	33	573	59	46	492	128
Future Volume (vph)	44	9	15	30	126	34	33	573	59	46	492	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1612			1794		1786	1851		1769	1794	
Flt Permitted		0.73			0.94		0.26	1.00		0.22	1.00	
Satd. Flow (perm)		1216			1703		492	1851		412	1794	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	10	16	32	134	36	35	610	63	49	523	136
RTOR Reduction (vph)	0	13	0	0	13	0	0	5	0	0	13	0
Lane Group Flow (vph)	0	60	0	0	189	0	35	668	0	49	646	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.3			11.3		28.6	26.9		30.4	27.8	
Effective Green, g (s)		11.3			11.3		28.6	26.9		30.4	27.8	
Actuated g/C Ratio		0.21			0.21		0.53	0.50		0.56	0.51	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		253			354		299	916		295	918	
v/s Ratio Prot							0.00	c0.36		c0.01	0.36	
v/s Ratio Perm		0.05			c0.11		0.06			0.08		
v/c Ratio		0.24			0.53		0.12	0.73		0.17	0.70	
Uniform Delay, d1		17.9			19.1		7.1	10.8		7.0	10.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			1.5		0.2	2.9		0.3	2.5	
Delay (s)		18.4			20.7		7.3	13.8		7.3	12.6	
Level of Service		B			C		A	B		A	B	
Approach Delay (s)		18.4			20.7			13.4			12.2	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			14.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			54.3			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			57.9%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Washington Street & Abernethy Road

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	6	1	12	203	3	40	12	307	338	40	433	6
Future Volume (vph)	6	1	12	203	3	40	12	307	338	40	433	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.92		1.00	0.86		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1690		1734	1539		1784	1881	1562	1749	1840	
Flt Permitted		0.93		0.74	1.00		0.40	1.00	1.00	0.54	1.00	
Satd. Flow (perm)		1601		1357	1539		753	1881	1562	997	1840	
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)	7	1	13	226	3	44	13	341	376	44	481	7
RTOR Reduction (vph)	0	9	0	0	31	0	0	0	195	0	1	0
Lane Group Flow (vph)	0	12	0	226	16	0	13	341	181	44	487	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4				8
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		12.4		12.4	12.4		19.8	19.8	19.8	19.8	19.8	
Effective Green, g (s)		12.4		12.4	12.4		19.8	19.8	19.8	19.8	19.8	
Actuated g/C Ratio		0.30		0.30	0.30		0.48	0.48	0.48	0.48	0.48	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		481		408	463		361	903	750	479	884	
v/s Ratio Prot					0.01			0.18				c0.26
v/s Ratio Perm		0.01		c0.17			0.02		0.12	0.04		
v/c Ratio		0.02		0.55	0.04		0.04	0.38	0.24	0.09	0.55	
Uniform Delay, d1		10.1		12.1	10.2		5.7	6.8	6.3	5.8	7.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		1.6	0.0		0.0	0.3	0.2	0.1	0.7	
Delay (s)		10.2		13.7	10.2		5.7	7.1	6.5	5.9	8.3	
Level of Service		B		B	B		A	A	A	A	A	
Approach Delay (s)		10.2			13.1			6.7			8.1	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.4			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			41.2			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			56.5%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

10: Washington Street & Site Access

04/18/2017



Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	15	22	24	329	457	20
Future Volume (Veh/h)	15	22	24	329	457	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	24	26	358	497	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				212		
pX, platoon unblocked	0.89					
vC, conflicting volume	918	508	519			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	843	508	519			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	96	98			
cM capacity (veh/h)	289	565	1047			
Direction, Lane #	SE 1	NE 1	SW 1			
Volume Total	40	384	519			
Volume Left	16	26	0			
Volume Right	24	0	22			
cSH	408	1047	1700			
Volume to Capacity	0.10	0.02	0.31			
Queue Length 95th (ft)	8	2	0			
Control Delay (s)	14.8	0.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.8	0.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			47.1%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	0.9					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	15	22	24	329	457	20
Future Vol, veh/h	15	22	24	329	457	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	24	26	358	497	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	918	508	518	0	-	0
Stage 1	508	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	302	565	1048	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	293	565	1048	-	-	-
Mov Cap-2 Maneuver	293	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	14.7	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1048	-	411	-	-	
HCM Lane V/C Ratio	0.025	-	0.098	-	-	
HCM Control Delay (s)	8.5	0	14.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

HCM Unsignalized Intersection Capacity Analysis

11: Washington Street & Amtrak Station Access

04/18/2017

																											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR															
Lane Configurations																											
Traffic Volume (veh/h)	35	0	52	2	0	1	55	288	1	0	423	42															
Future Volume (Veh/h)	35	0	52	2	0	1	55	288	1	0	423	42															
Sign Control		Stop			Stop			Free			Free																
Grade		0%			0%			0%			0%																
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92															
Hourly flow rate (vph)	38	0	57	2	0	1	60	313	1	0	460	46															
Pedestrians																											
Lane Width (ft)																											
Walking Speed (ft/s)																											
Percent Blockage																											
Right turn flare (veh)																											
Median type								None			None																
Median storage (veh)																											
Upstream signal (ft)								691																			
pX, platoon unblocked																											
vC, conflicting volume	917	917	483	950	940	314	506			314																	
vC1, stage 1 conf vol																											
vC2, stage 2 conf vol																											
vCu, unblocked vol	917	917	483	950	940	314	506			314																	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1																	
tC, 2 stage (s)																											
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2																	
p0 queue free %	84	100	90	99	100	100	94			100																	
cM capacity (veh/h)	241	257	584	207	249	727	1059			1246																	
Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2																					
Volume Total	95	3	60	314	0	506																					
Volume Left	38	2	60	0	0	0																					
Volume Right	57	1	0	1	0	46																					
cSH	372	272	1059	1700	1700	1700																					
Volume to Capacity	0.26	0.01	0.06	0.18	0.00	0.30																					
Queue Length 95th (ft)	25	1	4	0	0	0																					
Control Delay (s)	17.9	18.4	8.6	0.0	0.0	0.0																					
Lane LOS	C	C	A																								
Approach Delay (s)	17.9	18.4	1.4																								
Approach LOS	C	C																									
Intersection Summary																											
Average Delay			2.3																								
Intersection Capacity Utilization			43.4%	ICU Level of Service					A																		
Analysis Period (min)			15																								

HCM 2010 TWSC
11: Washington Street & Amtrak Station Access

04/18/2017

Intersection												
Int Delay, s/veh	2.3											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	35	0	52	2	0	1	55	288	1	0	423	42
Future Vol, veh/h	35	0	52	2	0	1	55	288	1	0	423	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	0	57	2	0	1	60	313	1	0	460	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	917	917	483	944	938	314	505	0	0	314	0	0
Stage 1	483	483	-	433	433	-	-	-	-	-	-	-
Stage 2	434	434	-	511	505	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	253	272	584	242	264	726	1060	-	-	1246	-	-
Stage 1	565	553	-	601	582	-	-	-	-	-	-	-
Stage 2	600	581	-	545	540	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	242	257	584	209	249	726	1060	-	-	1246	-	-
Mov Cap-2 Maneuver	242	257	-	209	249	-	-	-	-	-	-	-
Stage 1	533	553	-	567	549	-	-	-	-	-	-	-
Stage 2	565	548	-	492	540	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	17.9	18.3	1.4	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1060	-	-	274	372	1246	-
HCM Lane V/C Ratio	0.056	-	-	0.012	0.254	-	-
HCM Control Delay (s)	8.6	-	-	18.3	17.9	0	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	1	0	-

HCM Signalized Intersection Capacity Analysis

12: Washington Street & Praire Schooner Way

04/18/2017



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	369	277	367	118	78	181
Future Volume (vph)	369	277	367	118	78	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	0.97	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3367	1553	3398		1735	3471
Flt Permitted	0.95	1.00	1.00		0.29	1.00
Satd. Flow (perm)	3367	1553	3398		536	3471
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	415	311	412	133	88	203
RTOR Reduction (vph)	0	131	56	0	0	0
Lane Group Flow (vph)	415	180	489	0	88	203
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	4%	4%	2%	2%	4%	4%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	10.8	17.5	12.5		23.7	23.7
Effective Green, g (s)	10.8	17.5	12.5		23.7	23.7
Actuated g/C Ratio	0.25	0.40	0.29		0.54	0.54
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	835	785	976		476	1891
v/s Ratio Prot	c0.12	c0.04	c0.14		0.03	0.06
v/s Ratio Perm		0.08			0.07	
v/c Ratio	0.50	0.23	0.50		0.18	0.11
Uniform Delay, d1	14.0	8.6	12.9		5.2	4.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.1	0.4		0.2	0.0
Delay (s)	14.5	8.7	13.3		5.4	4.8
Level of Service	B	A	B		A	A
Approach Delay (s)	12.0		13.3			5.0
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 13: Washington Street & Clackamas River Drive

04/18/2017



Movement	NWL	NWR	NET	NER	SWL	SWT
Right Turn Channelized				MOYes		
Traffic Volume (veh/h)	82	105	347	282	192	185
Future Volume (veh/h)	82	105	347	282	192	185
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	91	117	386	313	213	206
Approach Volume (veh/h)	208		386			419
Crossing Volume (veh/h)	386		213			91
High Capacity (veh/h)	1022		1172			1290
High v/c (veh/h)	0.20		0.33			0.32
Low Capacity (veh/h)	834		968			1075
Low v/c (veh/h)	0.25		0.40			0.39
Intersection Summary						
Maximum v/c High			0.33			
Maximum v/c Low			0.40			
Intersection Capacity Utilization			59.6%		ICU Level of Service	B

HCM 2010 Roundabout
13: Washington Street & Clackamas River Drive

04/18/2017

Intersection				
Intersection Delay, s/veh	6.7			
Intersection LOS	A			
Approach	NW	NE	SW	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	208	699	419	
Demand Flow Rate, veh/h	224	720	427	
Vehicles Circulating, veh/h	398	217	98	
Vehicles Exiting, veh/h	217	308	524	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	4	0	0	
Ped Cap Adj	0.999	1.000	1.000	
Approach Delay, s/veh	8.7	5.2	8.2	
Approach LOS	A	A	A	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	T	R	LT
Assumed Moves	LR	T	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	224	398	322	427
Cap Entry Lane, veh/h	759	910	1957	1024
Entry HV Adj Factor	0.929	0.971	0.971	0.981
Flow Entry, veh/h	208	386	313	419
Cap Entry, veh/h	704	883	1900	1005
V/C Ratio	0.295	0.438	0.165	0.417
Control Delay, s/veh	8.7	9.4	0.0	8.2
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	2

HCM Signalized Intersection Capacity Analysis

14: Praire Schooner Way/Clackamas River Drive

04/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	186	0	0	437	0	2074	142	0	3236	613
Future Volume (vph)	0	0	186	0	0	437	0	2074	142	0	3236	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	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			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	192	0	0	451	0	2138	146	0	3336	632
RTOR Reduction (vph)	0	0	15	0	0	24	0	0	42	0	0	184
Lane Group Flow (vph)	0	0	177	0	0	427	0	2138	104	0	3336	448
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)			16.8			16.8		63.0	63.0		63.0	63.0
Effective Green, g (s)			16.8			16.8		63.0	63.0		63.0	63.0
Actuated g/C Ratio			0.19			0.19		0.71	0.71		0.71	0.71
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			532			522		3607	1123		3607	1123
v/s Ratio Prot								0.42			c0.66	
v/s Ratio Perm			0.06			c0.15			0.07			0.28
v/c Ratio			0.33			0.82		0.59	0.09		0.92	0.40
Uniform Delay, d1			31.2			34.5		6.5	4.0		10.9	5.2
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.4			9.6		0.3	0.0		4.7	0.2
Delay (s)			31.5			44.1		6.7	4.0		15.6	5.5
Level of Service			C			D		A	A		B	A
Approach Delay (s)		31.5			44.1			6.6			14.0	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			14.0			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			88.8			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			76.5%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↘	↗
Traffic Volume (vph)	1532	25	336	966	80	533
Future Volume (vph)	1532	25	336	966	80	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	0.95
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	0.89	0.85
Flt Protected	1.00		0.95	1.00	0.99	1.00
Satd. Flow (prot)	3397		1703	3406	1603	1475
Flt Permitted	1.00		0.07	1.00	0.99	1.00
Satd. Flow (perm)	3397		128	3406	1603	1475
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1630	27	357	1028	85	567
RTOR Reduction (vph)	1	0	0	0	105	8
Lane Group Flow (vph)	1656	0	357	1028	224	315
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	51.7		74.5	74.5	16.5	34.8
Effective Green, g (s)	51.7		74.5	74.5	16.5	34.8
Actuated g/C Ratio	0.52		0.74	0.74	0.16	0.35
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1756		383	2537	264	579
v/s Ratio Prot	0.49		c0.17	0.30	c0.14	0.10
v/s Ratio Perm			c0.52			0.11
v/c Ratio	0.94		0.93	0.41	0.85	0.54
Uniform Delay, d1	22.8		32.2	4.7	40.5	26.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	11.7		29.3	0.1	21.5	1.0
Delay (s)	34.4		61.5	4.8	62.0	27.3
Level of Service	C		E	A	E	C
Approach Delay (s)	34.4			19.4	44.8	
Approach LOS	C			B	D	
Intersection Summary						
HCM 2000 Control Delay			30.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.94			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			88.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	22	307	29	133	597	12	6	25	62	0	12	11
Future Volume (vph)	22	307	29	133	597	12	6	25	62	0	12	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	24	330	31	143	642	13	6	27	67	0	13	12
Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2	SW 1					
Volume Total (vph)	189	196	464	334	33	67	25					
Volume Left (vph)	24	0	143	0	6	0	0					
Volume Right (vph)	0	31	0	13	0	67	12					
Hadj (s)	0.13	-0.04	0.21	0.02	0.24	-0.55	-0.29					
Departure Headway (s)	6.0	5.8	5.6	5.4	7.3	6.5	6.7					
Degree Utilization, x	0.31	0.32	0.72	0.50	0.07	0.12	0.05					
Capacity (veh/h)	576	599	636	654	452	503	488					
Control Delay (s)	10.5	10.3	20.3	12.5	9.6	9.2	10.1					
Approach Delay (s)	10.4		17.1		9.4		10.1					
Approach LOS	B		C		A		B					
Intersection Summary												
Delay			14.4									
Level of Service			B									
Intersection Capacity Utilization			49.7%	ICU Level of Service				A				
Analysis Period (min)			15									

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	SEU	SEL	SET	SER	NWU	NWL	NWT	NWR	NEU	NEL	NET	NER
Lane Configurations												
Traffic Vol, veh/h	0	22	307	29	0	133	597	12	0	6	25	62
Future Vol, veh/h	0	22	307	29	0	133	597	12	0	6	25	62
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	4	4	4	2	3	3	3	2	9	9	9
Mvmt Flow	0	24	330	31	0	143	642	13	0	6	27	67
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	1

Approach	SE	NW	NE
Opposing Approach	NW	SE	SW
Opposing Lanes	2	2	1
Conflicting Approach Left	SW	NE	SE
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NE	SW	NW
Conflicting Lanes Right	2	1	2
HCM Control Delay	11.4	18.2	10.4
HCM LOS	B	C	B

Lane	NELn1	NELn2	NWLn1	NWLn2	SELn1	SELn2	SWLn1
Vol Left, %	19%	0%	31%	0%	13%	0%	0%
Vol Thru, %	81%	0%	69%	96%	87%	84%	52%
Vol Right, %	0%	100%	0%	4%	0%	16%	48%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	62	432	311	176	183	23
LT Vol	6	0	133	0	22	0	0
Through Vol	25	0	299	299	154	154	12
RT Vol	0	62	0	12	0	29	11
Lane Flow Rate	33	67	464	334	189	196	25
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.069	0.122	0.722	0.503	0.315	0.318	0.048
Departure Headway (Hd)	7.419	6.607	5.605	5.422	6.009	5.833	6.917
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	483	543	645	664	598	616	518
Service Time	5.159	4.347	3.329	3.146	3.742	3.566	4.956
HCM Lane V/C Ratio	0.068	0.123	0.719	0.503	0.316	0.318	0.048
HCM Control Delay	10.7	10.3	21.6	13.5	11.5	11.3	10.3
HCM Lane LOS	B	B	C	B	B	B	B
HCM 95th-tile Q	0.2	0.4	6.1	2.8	1.3	1.4	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SWU	SWL	SWT	SWR
Lane Configurations				
Traffic Vol, veh/h	0	0	12	11
Future Vol, veh/h	0	0	12	11
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	13	12
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	2
Conflicting Approach Left	NW
Conflicting Lanes Left	2
Conflicting Approach Right	SE
Conflicting Lanes Right	2
HCM Control Delay	10.3
HCM LOS	B

HCM Signalized Intersection Capacity Analysis

4: OR-99E & 14th Street

04/18/2017

	↑	↖	↙	↓	↘	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↑↑		↖	↑↑	↘	↗
Traffic Volume (vph)	1345	53	455	1857	71	376
Future Volume (vph)	1345	53	455	1857	71	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	0.95
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	0.90	0.85
Flt Protected	1.00		0.95	1.00	0.98	1.00
Satd. Flow (prot)	3449		1770	3539	1661	1519
Flt Permitted	1.00		0.08	1.00	0.98	1.00
Satd. Flow (perm)	3449		141	3539	1661	1519
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1387	55	469	1914	73	388
RTOR Reduction (vph)	3	0	0	0	85	9
Lane Group Flow (vph)	1439	0	469	1914	151	216
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	48.3		77.6	77.6	13.4	38.2
Effective Green, g (s)	48.3		77.6	77.6	13.4	38.2
Actuated g/C Ratio	0.48		0.78	0.78	0.13	0.38
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1665		513	2746	222	648
v/s Ratio Prot	0.42		c0.23	0.54	c0.09	0.08
v/s Ratio Perm			c0.48			0.06
v/c Ratio	0.86		0.91	0.70	0.68	0.33
Uniform Delay, d1	22.9		29.9	5.5	41.3	21.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3		20.8	0.8	8.3	0.3
Delay (s)	29.2		50.7	6.3	49.6	22.2
Level of Service	C		D	A	D	C
Approach Delay (s)	29.2			15.0	36.2	
Approach LOS	C			B	D	
Intersection Summary						
HCM 2000 Control Delay			22.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.91			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			87.0%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: Main Street & 14th Street

04/18/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	26	448	30	74	425	12	21	21	164	2	18	24
Future Volume (vph)	26	448	30	74	425	12	21	21	164	2	18	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	28	477	32	79	452	13	22	22	174	2	19	26
Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2	SW 1					
Volume Total (vph)	267	271	305	239	44	174	47					
Volume Left (vph)	28	0	79	0	22	0	2					
Volume Right (vph)	0	32	0	13	0	174	26					
Hadj (s)	0.07	-0.07	0.16	0.00	0.32	-0.63	-0.32					
Departure Headway (s)	6.2	6.1	6.3	6.1	7.5	6.5	7.0					
Degree Utilization, x	0.46	0.46	0.53	0.41	0.09	0.31	0.09					
Capacity (veh/h)	557	575	557	570	448	513	458					
Control Delay (s)	13.2	12.9	15.0	12.0	10.0	11.2	10.8					
Approach Delay (s)	13.0		13.7		11.0		10.8					
Approach LOS	B		B		B		B					
Intersection Summary												
Delay			12.9									
Level of Service			B									
Intersection Capacity Utilization			48.3%	ICU Level of Service					A			
Analysis Period (min)			15									

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	SEU	SEL	SET	SER	NWU	NWL	NWT	NWR	NEU	NEL	NET	NER
Lane Configurations												
Traffic Vol, veh/h	0	26	448	30	0	74	425	12	0	21	21	164
Future Vol, veh/h	0	26	448	30	0	74	425	12	0	21	21	164
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	1	1	1	2	2	2	2	2	4	4	4
Mvmt Flow	0	28	477	32	0	79	452	13	0	22	22	174
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	1

Approach	SE	NW	NE
Opposing Approach	NW	SE	SW
Opposing Lanes	2	2	1
Conflicting Approach Left	SW	NE	SE
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NE	SW	NW
Conflicting Lanes Right	2	1	2
HCM Control Delay	14.1	14.8	12.1
HCM LOS	B	B	B

Lane	NELn1	NELn2	NWLn1	NWLn2	SELn1	SELn2	SWLn1
Vol Left, %	50%	0%	26%	0%	10%	0%	5%
Vol Thru, %	50%	0%	74%	95%	90%	88%	41%
Vol Right, %	0%	100%	0%	5%	0%	12%	55%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	164	287	225	250	254	44
LT Vol	21	0	74	0	26	0	2
Through Vol	21	0	213	213	224	224	18
RT Vol	0	164	0	12	0	30	24
Lane Flow Rate	45	174	305	239	266	270	47
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.094	0.318	0.535	0.408	0.461	0.459	0.095
Departure Headway (Hd)	7.538	6.569	6.321	6.152	6.246	6.109	7.279
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	474	544	567	583	574	586	489
Service Time	5.312	4.342	4.086	3.916	4.01	3.873	5.37
HCM Lane V/C Ratio	0.095	0.32	0.538	0.41	0.463	0.461	0.096
HCM Control Delay	11.1	12.4	16.2	13.1	14.3	14	11.1
HCM Lane LOS	B	B	C	B	B	B	B
HCM 95th-tile Q	0.3	1.4	3.1	2	2.4	2.4	0.3

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SWU	SWL	SWT	SWR
Lane Configurations				
Traffic Vol, veh/h	0	2	18	24
Future Vol, veh/h	0	2	18	24
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	2	19	26
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	2
Conflicting Approach Left	NW
Conflicting Lanes Left	2
Conflicting Approach Right	SE
Conflicting Lanes Right	2
HCM Control Delay	11.1
HCM LOS	B

Queuing and Blocking Report
2022 Mitigated Conditions - AM Peak Hour

04/18/2017

Intersection: 4: OR-99E & 14th Street

Movement	NB	NB	SB	SB	SB	NW	NW
Directions Served	T	TR	L	T	T	LR	R
Maximum Queue (ft)	618	610	312	199	180	126	133
Average Queue (ft)	458	408	176	99	54	115	113
95th Queue (ft)	657	627	279	168	125	123	133
Link Distance (ft)	569	569	665	665	665	109	109
Upstream Blk Time (%)	11	8				36	23
Queuing Penalty (veh)	0	0				111	72
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Main Street & 14th Street

Movement	SE	SE	NW	NW	NE	NE	SW
Directions Served	LT	TR	LT	TR	LT	R	LTR
Maximum Queue (ft)	130	117	413	383	67	73	40
Average Queue (ft)	64	70	239	175	24	33	19
95th Queue (ft)	104	109	406	347	56	61	44
Link Distance (ft)	109	109	461	461	296		163
Upstream Blk Time (%)	0	0	1	0			
Queuing Penalty (veh)	0	1	0	0			
Storage Bay Dist (ft)						130	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 184

Queuing and Blocking Report
2022 Mitigated Conditions - PM Peak Hour

04/18/2017

Intersection: 4: OR-99E & 14th Street

Movement	NB	NB	SB	SB	SB	NW	NW
Directions Served	T	TR	L	T	T	LR	R
Maximum Queue (ft)	595	597	469	401	275	121	127
Average Queue (ft)	444	397	239	179	122	110	92
95th Queue (ft)	651	611	381	304	223	131	134
Link Distance (ft)	569	569	580	580	580	109	109
Upstream Blk Time (%)	9	6	0	0		18	4
Queuing Penalty (veh)	0	0	0	0		43	9
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Main Street & 14th Street

Movement	SE	SE	NW	NW	NE	NE	SW
Directions Served	LT	TR	LT	TR	LT	R	LTR
Maximum Queue (ft)	133	141	227	187	68	86	41
Average Queue (ft)	81	84	96	44	29	46	25
95th Queue (ft)	123	126	180	123	57	73	48
Link Distance (ft)	109	109	468	468	296		163
Upstream Blk Time (%)	1	1					
Queuing Penalty (veh)	1	2					
Storage Bay Dist (ft)						130	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 56

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

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	4	0	4	0	8	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	2	1	3	0	2	0	2	1	3	0	3	0	0
YEAR 2015 TOTAL	0	6	1	7	0	10	0	6	1	7	0	7	0	0
YEAR: 2014														
REAR-END	0	2	0	2	0	3	0	2	0	1	1	2	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	3	0	2	1	3	0	0
YEAR 2014 TOTAL	0	3	2	5	0	4	0	5	0	3	2	5	0	0
YEAR: 2013														
REAR-END	0	0	1	1	0	0	0	0	0	1	0	1	0	0
YEAR 2013 TOTAL	0	0	1	1	0	0	0	0	0	1	0	1	0	0
YEAR: 2012														
PEDESTRIAN	0	1	0	1	0	1	0	0	1	1	0	1	0	0
REAR-END	0	2	2	4	0	2	0	2	2	2	2	4	0	0
TURNING MOVEMENTS	0	4	2	6	0	6	0	4	2	2	4	6	0	0
YEAR 2012 TOTAL	0	7	4	11	0	9	0	6	5	5	6	11	0	0
YEAR: 2011														
REAR-END	0	4	1	5	0	6	0	3	2	5	0	5	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2011 TOTAL	0	4	2	6	0	6	0	3	3	6	0	6	0	0
FINAL TOTAL	0	20	10	30	0	29	0	20	9	22	8	30	0	0

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CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-BEL	OFFRD	WTHR	CRASH	SPCL USE	TRLR QTY	OWNER	V# TYPE	TO	MOVE	PRTC	INJ	A S	E X RES	LOC	ERROR	ACT EVENT	CAUSE
00210	N N N	01/18/2011	14		PACIFIC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	RAIN	S-1STOP	01 NONE	0	STRGHT	N -S	01 DRIVER	NONE	00 M	UNK	UNK	026	000	00	07
NONE		TU 10A			WB EX PAC HY 99E	06	1		N	WET	REAR	PSNGR CAR	PSNGR CAR		02 NONE	0	STOP	N -S				012	000	00	00
															01 DRIVER	NONE	45 M	OR-Y	OR<25		000	000	00	00	00
02676	N N N	07/27/2011	14		PACIFIC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	S-1STOP	01 NONE	0	STRGHT	N -S	01 DRIVER	NONE	28 M	OR-Y	OR<25	026	000	00	07
NO RPT		WE 12P			WB EX PAC HY 99E	06	1		N	DAY	INJ	PSNGR CAR	PSNGR CAR		02 NONE	0	STOP	N -S				011	000	00	00
															01 DRIVER	NONE	20 M	OR-Y	OR<25		000	000	00	00	00
															02 NONE	0	STOP	N -S				011	000	00	00
															01 DRIVER	NONE	55 M	OR-Y	OR<25		000	000	00	00	00
03094	N N N	08/24/2011	14		PACIFIC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	S-1STOP	01 NONE	0	STRGHT	N -S	01 DRIVER	NONE	52 F	OR-Y	OR<25	026	000	00	07
NONE		WE 9A			WB EX PAC HY 99E	06	1		N	DAY	INJ	PSNGR CAR	PSNGR CAR		02 NONE	0	STOP	N -S				012	000	00	00
															01 DRIVER	NONE	38 F	OR-Y	OR<25		000	000	00	00	00
01210	Y Y N N N	03/31/2012	14		PACIFIC HY 99E	INTER	3-LEG	N	L-TURN REF	N	UNK	S-1STOP	01 NONE	0	STRGHT	N -S	01 DRIVER	NONE	64 F	OR-Y	OR<25	026,047	000	00	01,07
STATE		SA 1A			WB EX PAC HY 99E	06	1		N	DLIT	INJ	PSNGR CAR	PSNGR CAR		02 NONE	0	STOP	N -S				012	000	00	00
															01 DRIVER	NONE	48 F	OR-Y	OR<25		000	000	00	00	00
05299	N N N	12/30/2014	14		PACIFIC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	S-1STOP	01 NONE	0	STRGHT	N -S	01 DRIVER	NONE	22 F	OR-Y	OR<25	016,026	038 099	27,29	27,29
NO RPT		TU 6P			WB EX PAC HY 99E	06	2		N	DLIT	INJ	PSNGR CAR	PSNGR CAR		02 NONE	0	STOP	N -S				011 013	000	00	00
															01 DRIVER	NONE	26 M	OR-Y	OR<25		000	000	00	00	00
															03 NONE	0	STOP	N -S				022	000	00	00
															01 DRIVER	NONE	77 M	OR-Y	OR<25		000	000	00	00	00
01064	N N N	03/27/2015	14		PACIFIC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	S-1STOP	01 NONE	0	STRGHT	E-W	01 DRIVER	NONE	00	UNK	UNK	026	000	00	29
NO RPT		FR 11A			WB EX PAC HY 99E	06	1		N	DAY	INJ	UNKNOWN	UNKNOWN		02 NONE	0	STOP	N -S				011 013	000	00	29

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 30

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE		INT-REL	OFFRD	WTHR	CRASH	SPL USE		MOVE	PRTC	INJ	A S	PED	LOC	ERROR	ACT EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
							LEG	(LANES)					CONTL	DRVWY										LIGHT	SVRTY	PDO	V#	TYPE	PSNGR	CAR	TO	FROM	OWNER	COLL	SURF	TRAP-	SIGNAL	N	DAY	S-1STOP	REAR	PDO	PSNGR	CAR	E -W	STOP	PRVTE	NONE	0	02	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W	PRVTE	NONE	0	STOP	E -W

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY
URBAN NON-SYSTEM CRASH LISTING
PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 30

S P R S W			CLASS			CITY STREET			INT-TYPE			SPLC USE			MOVE			A S			CAUSE								
SER#	E L G H R D A Y	DATE	DIST	FIRST STREET	RD CHAR	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	OWNER	FROM	PH TYPE	INJ	G	E	LICNS	PED	LOC	ERROR	ACT	EVENT	CAUSE						
INVEST	D C S L K T I M E	MO	TIME	SECOND STREET	LOCN	LEG (PLANES)	CONTIL	TRF SIGNAL	N	DAY	DRVWY	SVTY	REAR	DAY	INJ	PSNGR CAR	0	STOP	E -W	01 DRIVER	NONE	41	M	OR-Y	OR<25	000	000	00	29
02606	N N N	07/18/2012	14	PACIFIC HY 99E	WB EX PAC HY 99E	06	3-LEG	TRF SIGNAL	N	CLR	S-1STOP	01 NONE	0	STRGHT	S -N	01 DRIVER	NONE	17	M	OR-Y	OR<25	000	000	00	07				
01678	N N N	05/07/2012	11	PACIFIC HY 99E	WB EX PAC HY 99E	06	3-LEG	TRF SIGNAL	N	CLR	BIKE	01 NONE	0	TURN-R	E -N	01 DRIVER	NONE	41	M	OR-Y	OR<25	000	000	00	18,19,04				
00891	N N N	03/15/2011	14	PACIFIC HY 99E	WB EX PAC HY 99E	03	3-LEG	TRF SIGNAL	N	RAIN	ANG-OTH	01 NONE	0	STRGHT	N -S	01 DRIVER	NONE	28	M	OR-Y	OR<25	000	000	00	04				
00905	N N N	03/14/2011	14	PACIFIC HY 99E	WB EX PAC HY 99E	04	3-LEG	TRF SIGNAL	N	CLD	S-1STOP	01 NONE	0	STRGHT	S -N	01 DRIVER	INJC	54	F	SUSP	OR<25	000	000	00	07				
01007	N N N	03/17/2012	14	PACIFIC HY 99E	WB EX PAC HY 99E	01	3-LEG	TRF SIGNAL	N	RAIN	ANG-OTH	01 NONE	0	TURN-L	E -S	01 DRIVER	INJC	58	F	OR-Y	OR<25	000	000	00	04				

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

URBAN NON-SYSTEM CRASH LISTING

Total crash records: 30

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-BEL LEGS (#LANES)	CONTL	DRVWY	LIGHT	SURFT	COLL	WTHR	CRASH	SPCL USE	TRLR QTY	OWNER	MOVE	FROM	PRTC	INJ	A S	E X RES	LOC	ERROR	ACT EVENT	CAUSE
01096	NONE	N N N	03/23/2012	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	01 NONE	0	TURN-L	E -S	02 PSNG	INJC	43 F	000	000	00	00	00
01120	STATE	N N N	03/24/2012	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	L-GRN-SIG	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	01 NONE	0	TURN-L	E -S	01 PSNG	INJC	45 M	000	000	00	00	00
01120	STATE	N N N	03/24/2012	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	L-GRN-SIG	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	02 NONE	0	TURN-L	E -S	01 PSNG	INJC	44 F	000	000	00	00	00
03764	CITY	N N N	10/10/2012	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	01 NONE	0	TURN-L	E -S	01 PSNG	INJC	52 M	000	000	00	00	00
04671	NONE	N N N	12/04/2012	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	02 NONE	0	TURN-L	E -S	01 PSNG	INJC	67 M	000	000	02	00	00
04671	NONE	N N N	12/04/2012	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	02 NONE	0	TURN-L	E -S	01 PSNG	INJC	42 F	000	000	00	00	00
01191	STATE	N N N	03/27/2014	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	01 NONE	0	TURN-L	E -S	01 PSNG	INJC	23 M	000	000	04	00	00
01191	STATE	N N N	03/27/2014	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	0	STRGHT	S -N	0	02 NONE	0	TURN-L	E -S	01 PSNG	INJC	66 F	000	000	00	00	00

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

URBAN NON-SYSTEM CRASH LISTING

Total crash records: 30

[illegible]

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	2	2	4	0	2	0	2	1	3	1	4	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	0	2	2	0	0
YEAR 2015 TOTAL	0	4	2	6	0	5	0	4	1	3	3	6	0	0
YEAR: 2014														
REAR-END	0	1	0	1	0	2	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	0	2	2	0	0
YEAR 2014 TOTAL	0	1	2	3	0	2	0	2	1	0	3	3	0	0
YEAR: 2013														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	0
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	0	1	2	3	0	1	0	2	1	0	3	3	0	0
YEAR: 2012														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2011														
REAR-END	0	0	2	2	0	0	0	1	1	1	1	2	0	0

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

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- PROPERTY		TOTAL CRASHES	PEOPLE		TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
		FATAL CRASHES	DAMAGE ONLY		KILLED	INJURED								
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR 2011 TOTAL	0	1	3	4	0	1	0	2	2	2	2	4	0	0
FINAL TOTAL	0	7	10	17	0	9	0	10	6	6	11	17	0	0

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 17

[illegible]

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 17

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE		INT-REL	OFFRD	WTHR	CRASH	SPL USE		MOVE	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE
							LEG	(PLANES)					CONTI	TRAF-								

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

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	1	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	1	1	2	0	0
YEAR 2015 TOTAL	0	3	0	3	0	4	0	2	1	1	2	3	0	0
YEAR: 2014														
REAR-END	0	1	3	4	0	1	0	4	0	3	1	4	0	0
YEAR 2014 TOTAL	0	1	3	4	0	1	0	4	0	3	1	4	0	0
YEAR: 2013														
REAR-END	0	2	1	3	0	2	0	1	1	0	3	3	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	0	2	2	4	0	2	0	2	1	0	4	4	0	0
YEAR: 2012														
REAR-END	0	0	5	5	0	0	0	4	1	5	0	5	0	0
TURNING MOVEMENTS	0	2	0	2	0	2	0	1	1	1	1	2	0	0
YEAR 2012 TOTAL	0	2	5	7	0	2	0	5	2	6	1	7	0	0
YEAR: 2011														
REAR-END	0	3	1	4	0	4	0	2	2	3	1	4	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2011 TOTAL	0	3	2	5	0	4	0	2	3	3	2	5	0	0

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

0	11	12	23	0	13	0	15	7	13	10	23	0	0
FINAL TOTAL													

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 23

SER#	INVEST	D C S L K TIME	N N N	TH	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPCL QTY	MOVE	PH TYPE	SURTY	A S	E X RES	LOC	ERROR	ACT EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
																							FROM	FIRST STREET	DIST	DIRECT	LEGS	TRAP-	RDCH	TRAP-	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

	DATE	CITY	COUNTY	CRASH LISTING
URBAN NON-SYSTEM	01/01/2011	City of Oregon City	Clatsamas County	TO 12/31/2015

Total crash records: 23

[illegible]

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

[illegible]

Total crash records: 23

[illegible]

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 23

S P E R S W	D A T E	C L A S S	C I T Y S T R E E T	R D C H A R	I N T - T Y P E (M E D I A N)	O F F R D	W T H R	C R A S H	S P C I A L U S E	M O V E	F R O M	P R I C E	I N J	A S S E S S M E N T	L O C	E R R O R	A C T E V E N T	C A U S E										
																			S E R I A L	D I S T	F R O M	C I T Y	S T R E E T	C O L L	S U R F	C O L L	S U R F	C O L L
SER#	INVEST	STATE	DATE	CLASS	DIST	FROM	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-BEL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	FROM	PRTC	INJ	A S	E L	C N	PED	LOC	RES	LOC	ERROR	ACT EVENT	CAUSE
03521	N N N N	N N N N	09/22/2012	14	SA	PACIFIC HY 99E	INTER	02	02	EB EX PAC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	S -N	01 DRIVER	NONE	34 M	OR-Y	OR<25	020	04
					9A																						00	
																											000	00
																											000	00
04882	N N N N	N N N N	12/17/2012	14	MO	PACIFIC HY 99E	INTER	04	04	EB EX PAC HY 99E	INTER	3-LEG	N	L-GRN-SIG	N	RAIN	O-1 L-TURN	01 NONE	0	STRGHT	S -N	01 DRIVER	INJB	53 F	OR-Y	OR<25	000	04
					9P																						000	00
																											000	00
																											000	00
																											003	04
																											000	00
00576	N N N	N N N	02/19/2013	14	TU	PACIFIC HY 99E	INTER	04	04	EB EX PAC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	O-1 L-TURN	01 NONE	0	TURN-L	N -E	01 DRIVER	NONE	00 F	OR-Y	OR<25	028	00
					9P																						000	00
																											000	00
																											000	00
01337	N N N	N N N	04/14/2015	14	TU	PACIFIC HY 99E	INTER	02	02	EB EX PAC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	S -N	01 DRIVER	NONE	36 M	OR-Y	OR<25	020	04
					3P																						000	00
																											000	00
																											000	00
																											000	00
05735	N N N	N N N	12/31/2015	14	TH	PACIFIC HY 99E	INTER	02	02	EB EX PAC HY 99E	INTER	3-LEG	N	TRF SIGNAL	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	S -N	01 DRIVER	NONE	51 F	OR-Y	OR<25	020	04
					7P																						000	00
																											000	00
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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2015 TOTAL	0	2	0	2	0	3	0	2	0	2	0	2	0	0
YEAR: 2014														
REAR-END	0	2	1	3	0	2	0	2	1	3	0	3	0	0
YEAR 2014 TOTAL	0	2	1	3	0	2	0	2	1	3	0	3	0	0
YEAR: 2013														
REAR-END	0	2	2	4	0	2	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	1	0	1	0	3	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	0	3	2	5	0	5	0	5	0	4	1	5	0	0
YEAR: 2012														
REAR-END	0	0	2	2	0	0	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	3	4	0	1	0	3	1	2	2	4	0	0
YEAR 2012 TOTAL	0	1	5	6	0	1	0	5	1	4	2	6	0	0
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	1	1	2	0	0
YEAR 2011 TOTAL	0	0	3	3	0	0	0	3	0	2	1	3	0	0

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

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

0	8	11	19	0	11	0	17	2	15	4	19	0	0
FINAL TOTAL													

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 19

[illegible]

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING			
CRASH DATE	CRASH TIME	CRASH LOCATION	CRASH TYPE
01/01/2011	12/31/2015	City of Oregon City, Clackamas County	HY 93E at NB EXYO T-205 EB

Total crash records: 19

[illegible]

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXT0 I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

URBAN NON-SYSTEM CRASH LISTING

Total crash records: 19

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPLC QTY	MOVE	A S										CAUSE		
														PEL	TYPE	SVRTY	E	X	RES	LOC	ACT	EVENT	CAUSE			
																									01	DRVR
04886	NONE	N N N	12/17/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-ISTOP	01	NONE	0	STRGHT	S -N	01	DRVR	NONE	35	M	OR-Y	OR-25	000	000	07
			TU 3P		NB EXT0 I-205 EB	S 06	1	TRF SIGNAL	N	DRY	REAR PDO	PRVTE	PSNGR	02	NONE	STOP	02	NONE	NONE	00	UNK	UNK	000	000	07	
																S -N	01	DRVR	NONE	00	UNK	UNK	000	000	00	
03249	STATE	N N N	09/03/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	FOG	O-1 L-TURN	01	NONE	0	TURN-L	N -E	01	DRVR	NONE	62	M	OTH-Y	N-RES	000	000	04
			SA 8P		NB EXT0 I-205 EB	CN 04	1	L-GRN-SIG	N	DRY	TURN PDO	PRVTE	PSNGR	02	NONE	0	STRGHT	S -N	01	DRVR	NONE	70	F	OR-Y	OR-25	00
																	S -N	01	DRVR	NONE	70	F	OR-Y	OR-25	04	
00563	CITY	N N N	02/12/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE	0	STRGHT	S -N	01	DRVR	NONE	24	F	OR-Y	OR-25	000	000	04
			SU 10P		NB EXT0 I-205 EB	CN 02	1	TRF SIGNAL	N	WET	TURN PDO	PRVTE	PSNGR	02	NONE	0	TURN-L	E -S	01	DRVR	NONE	56	M	OR-Y	OR-25	00
																	E -S	01	DRVR	NONE	56	M	OR-Y	OR-25	00	
02698	NONE	N N N	07/24/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-ISTOP	01	NONE	0	TURN-R	S -E	01	DRVR	NONE	50	F	SUSP	OR-25	000	000	08,32
			TU 4P		NB EXT0 I-205 EB	CN 04	0	TRF SIGNAL	N	DRY	REAR PDO	PRVTE	PSNGR	02	NONE	0	TURN-R	S -E	01	DRVR	NONE	47	F	OR-Y	OR-25	00
																	S -E	01	DRVR	NONE	47	F	OR-Y	OR-25	00	
03080	NONE	N N N	08/19/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT	S -N	01	DRVR	NONE	00	F	OR-Y	UNK	000	000	04
			SU 3P		NB EXT0 I-205 EB	CN 04	1	TRF SIGNAL	N	DRY	TURN PDO	PRVTE	PSNGR	02	NONE	0	TURN-L	N -E	01	DRVR	NONE	29	M	OR-Y	OR-25	00
																	N -E	01	DRVR	NONE	29	M	OR-Y	OR-25	00	
04535	STATE	N N N	11/22/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT	S -N	01	DRVR	INJC	18	F	OR-Y	OR-25	000	000	04
			TH 8P		NB EXT0 I-205 EB	CN 04	1	TRF SIGNAL	N	DRY	TURN INJ	PRVTE	PSNGR	01	NONE	0	STRGHT	S -N	02	PSNG	NO-5	01	M	000	000	00
																	S -N	02	PSNG	NO-5	01	M	000	000	00	

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

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	1	1	2	0	1	0	2	0	1	1	2	0	0
YEAR 2015 TOTAL	0	1	1	2	0	1	0	2	0	1	1	2	0	0
YEAR: 2014														
REAR-END	0	6	0	6	0	7	0	6	0	6	0	6	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR 2014 TOTAL	0	7	1	8	0	8	0	7	1	8	0	8	0	0
YEAR: 2013														
REAR-END	0	2	0	2	0	2	0	1	0	1	1	2	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	2	0	2	0	0
YEAR 2013 TOTAL	0	2	2	4	0	2	0	2	1	3	1	4	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	5	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR 2012 TOTAL	0	2	1	3	0	6	0	2	1	3	0	3	0	0
YEAR: 2011														
REAR-END	0	2	1	3	0	2	0	3	0	2	1	3	0	0
YEAR 2011 TOTAL	0	2	1	3	0	2	0	3	0	2	1	3	0	0
FINAL TOTAL	0	14	6	20	0	19	0	16	3	17	3	20	0	0

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY
PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
URBAN NON-SYSTEM CRASH LISTING
Total crash records: 20

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-BEL LEGS	OFFRD	WTHR	CRASH	SPCL USE	V# TYPE	TO NE	FROM SW	P# TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE
00492	N N N N	02/10/2011	0	19	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLD	S-1STOP REAR INJ	01 NONE PRVTE PSNGR CAR	0	STRGHT SE-NW	01 DRVR	NONE	66	M	OR-Y OR<25	016,026	000 000	27,07
							0		N	DAY		02 NONE PRVTE PSNGR CAR	0	STOP SE-NW	01 DRVR	INJC	59	F	OR-Y OR<25	000	011 000	00
02221	N N N N	06/22/2013	0	19	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE PRVTE PSNGR CAR	0	STRGHT SE-NW	01 DRVR	NONE	59	F	OR-Y OR<25	026	000 000	07
							0		N	DAY		02 NONE PRVTE PSNGR CAR	0	STOP SE-NW	01 DRVR	INJC	58	M	OR-Y OR<25	000	011 000	00
04877	N N N	12/17/2013	0	19	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	UNK	S-1STOP REAR INJ	01 NONE PRVTE UNKNOWN	0	STRGHT SE-NW	01 DRVR	NONE	33	F	OR-Y OR<25	026	000 000	07
							0		N	DUSK		02 NONE PRVTE PSNGR CAR	0	STOP SE-NW	01 DRVR	INJC	48	F	OTH-Y OR<25	000	011 000	00
01124	N N N	03/21/2014	0	19	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE PRVTE PSNGR CAR	0	STRGHT SE-NW	01 DRVR	NONE	32	F	OR-Y OR<25	026	000 000	07
							0		N	DAY		02 NONE PRVTE PSNGR CAR	0	STOP SE-NW	01 DRVR	INJC	32	F	OR-Y OR<25	000	011 000	00
									N			02 NONE PRVTE PSNGR CAR	0	STOP SE-NW	02 PSNG	NO<5	04	M		000	011 000	00
									N			03 NONE UNKN UNKNOWN	0	STOP SE-NW	01 DRVR	NONE	00	UNK UNK		022 000	000 00	00
01616	N N N	04/28/2014	0	19	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE PRVTE PSNGR CAR	0	STRGHT SE-NW	01 DRVR	NONE	53	M	OR-Y OR<25	026	000 000	29
							0		N	DAY		02 NONE PRVTE PSNGR CAR	0	STOP SE-NW	01 DRVR	INJC	50	M	OR-Y OR<25	000	011 000	00
01736	N N N N	05/06/2014	0	19	PACIFIC HY 99E 15TH ST	INTER SE	3-LEG	N	N	CLD	S-1STOP REAR	01 NONE UNKN	0	STRGHT SE-NW	01 DRVR	INJC	29			000	000	29 00

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CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	D C S L K TIME	FROM	DIST	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-BEL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A S	E X RES	LOC	ERROR	ACT EVENT	CAUSE
01975	N N N	05/23/2014	19	0		PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01 DRIVER	NONE	00 M	UNK	UNK	026	000	29
01975	NONE	FR 6P						0	STOP SIGN	N	DAY	INJ	01 NONE 0 UNKN PSNGR CAR	STOP SE-NW	01 DRIVER	NONE	58 F	OR-Y	OR<25	000	011	00
03302	N N N	08/25/2014	19	0		PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01 DRIVER	NONE	00 M	UNK	UNK	026	000	29
03302	NONE	MO 1P						0	STOP SIGN	N	DAY	INJ	01 NONE 0 UNKN PSNGR CAR	STOP SE-NW	01 DRIVER	NONE	53 M	OR-Y	OR<25	000	011	00
03718	N N N	09/22/2014	19	0		PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01 DRIVER	NONE	57 M	OR-Y	OR<25	026	000	29
03718	NONE	MO 6A						0	STOP SIGN	N	DAY	INJ	01 NONE 0 UNKN PSNGR CAR	STOP SE-NW	01 DRIVER	NONE	45 F	OR-Y	OR<25	000	011	00
02082	N N N	06/01/2015	17	0		PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR INJ	01 NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01 DRIVER	NONE	56 M	OR-Y	OR<25	026	000	29
02082	NONE	MO 4P						0	STOP SIGN	N	DAY	INJ	01 NONE 0 UNKN PSNGR CAR	STOP SE-NW	01 DRIVER	NONE	55 F	OR-Y	OR<25	000	011	00
00180	N N N	01/15/2015	17	0		PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG	N	N	CLR	S-1STOP REAR PDO	01 NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01 DRIVER	NONE	60 M	OR-Y	OR<25	026	000	29
00180	NONE	TH 6P						0	STOP SIGN	N	DLIT	PDO	01 NONE 0 UNKN PSNGR CAR	STOP SE-NW	01 DRIVER	NONE	51 F	OR-Y	OR<25	000	011	00
00381	N N N	01/28/2012	14			PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0 TURN-R	TURN-R	01 DRIVER	NONE	51 F	OR-Y	OR<25	000	000	00

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

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03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	NONE	S D P			CLASS	CITY STREET	RD CHAR	INT-TYPE			OFFRD	WTHR	CRASH	SPCL USE		MOVE	A S			PRTC	INJ	G	E	L	C	M	S	LOC	ERROR	ACT EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			SA	2P					DIST	FIRST STREET	DIRECT				INT-REL	TRAF-		CONTH	STOP SIGN	N													DAY	DRY	TURN	SVTY	PDO	V# TYPE	PRVTE	PSNGR CAR	SE-NE	PH TYPE	SVTY	F	OR-Y	UNK	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y	OR-Y

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	1	2	0	2	0	2	0	0
YEAR 2015 TOTAL	0	1	2	3	0	1	1	3	0	3	0	3	0	0
YEAR: 2014														
REAR-END	0	2	0	2	0	2	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	3	2	5	0	3	0	4	1	5	0	5	0	0
YEAR 2014 TOTAL	0	5	2	7	0	5	0	5	2	7	0	7	0	0
YEAR: 2013														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	5	4	9	0	12	0	9	0	5	4	9	0	0
YEAR 2013 TOTAL	0	5	5	10	0	12	0	10	0	6	4	10	0	0
YEAR: 2012														
REAR-END	0	7	0	7	0	9	0	4	3	4	3	7	0	0
TURNING MOVEMENTS	0	3	1	4	0	3	0	2	2	1	3	4	0	0
YEAR 2012 TOTAL	0	10	1	11	0	12	0	6	5	5	6	11	0	0
YEAR: 2011														
REAR-END	0	8	4	12	0	12	0	7	3	8	3	12	0	0

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

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY		TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-		INTER- SECTION RELATED	OFF- ROAD
			DAMAGE ONLY	ONLY									SECTION	SECTION		
TURNING MOVEMENTS	0	5	1	6	0	0	10	0	4	2	3	3	6	0	0	0
YEAR 2011 TOTAL	0	13	5	18	0	0	22	0	11	5	11	6	18	0	0	0
FINAL TOTAL	0	34	15	49	0	0	52	1	35	12	32	16	49	0	0	0

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH TESTING

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

[illegible]

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

Total crash records: 49

[illegible]

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

CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 49

SER#	INVEST	TH	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE			OFFRD	WTHR	CRASH	SPLC QTY	MOVE	FROM	PH TYPE	SVRTY	A	S	PED	LOC	ERROR	ACT EVENT	CAUSE
							LEGS	TRAF-	CONTL															
NONE	NONE	6P			14TH ST	SW	06	0								01	DRVR	INJC	38	F	OR-Y	026	000	07
													02	NONE	0								011	00
													PRVTE	SW-NE								000	00	
													PSNGR	SW-NE		01	DRVR	NONE	29	M	OR-Y	000	000	00
01971	N N N N	06/03/2011	14		PACIFIC HY 99E	SW	06	0	3-LEG	N	CLR	S-1STOP	01	NONE	0								27	
	STATE	FR	2P		14TH ST	SW	06			TRF SIGNAL	N	DRY	PRVTE	SW-NE		01	DRVR	NONE	51	M	OR-Y	016,026	000	00
												INJ	PSNGR	SW-NE								000	27	
													02	NONE	0									
													PRVTE	SW-NE								011	00	
													PSNGR	SW-NE		01	DRVR	INJC	31	M	OR-Y	000	00	

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HW 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 49

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE			OFFRD	WTHR	CRASH	SPLC QTY	MOVE	FROM	PRIC	INJ	A S	PED	LOC	ERROR	ACT EVENT	CAUSE
							INT-REL	LEGS	CONTL														

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HW 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 49

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	P E L G H R D A Y	D C S L K T I M E	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPLC USE	MOVE	PH TYPE	SUVTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE	
03304	N N N	09/07/2011	WE 5P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLR	O-1 L-TURN TURN	0	TURN-L NE-SE	01	DRVR	NONE	38 F	OR-Y	004,028	000	00
NO RPT						04	0	TRF SIGNAL	N	DAY	INJ	PSNGR CAR	PSNGR CAR				OR<25		000	02	
												02 NONE	STRGHT SW-NE	01	DRVR	NONE	25 F	OR-Y	000	00	
												PSNGR CAR					OR<25	000	00	00	
04004	N N N	09/20/2011	TU UNK	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	UNK	S-1TURN REAR	0	TURN-L NE-SE	01	DRVR	NONE	20 F	OTH-Y	026	000	07
CITY						02	0	TRF SIGNAL	N	UNK	PDO	PSNGR CAR	PSNGR CAR				N-RES		000	07	
												02 NONE	STOP						013	00	
												PRVTE	NE-SE	01	DRVR	NONE	89 F	OTH-Y	000	00	
												PSNGR CAR					OR<25	000	00	00	
04527	N N N	N 11/26/2011	SA 6P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLD	O-1 L-TURN TURN	0	TURN-L NE-SE	01	DRVR	NONE	59 M	OR-Y	004,028	000	02
CITY						04	0	TRF SIGNAL	N	DRY	INJ	PSNGR CAR	PSNGR CAR				OR<25		000	02	
												01 NONE	TURN-L NE-SE	02	PSNG	INJC	29 F		000	00	
												PRVTE	NE-SE					000	00	00	
												PSNGR CAR							000	00	
												02 NONE	STRGHT SW-NE	01	DRVR	NONE	49 M	OR-Y	000	00	
												PSNGR CAR					OR<25	000	00	00	
04723	N N N	12/07/2011	WE 5P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLR	O-1 L-TURN TURN	0	STRGHT SW-NE	01	DRVR	NONE	48 F	OR-Y	000	000	02,07
NO RPT						04	0	TRF SIGNAL	N	DRY	PDO	PSNGR CAR	PSNGR CAR				OR<25		000	00	
												02 NONE	TURN-L NE-SE	01	DRVR	NONE	33 M	OR-Y	001 013	00	
												PRVTE	NE-SE					028,004	000	02	
												PSNGR CAR					OR<25		000	00	
												03 NONE	STRGHT NE-SW	01	DRVR	NONE	48 M	OR-Y	000	00	
												PRVTE	NE-SW					000	000	00	
												PSNGR CAR					OR<25	000	00	00	
04879	N N N	12/19/2011	MO 10A	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLR	O-1 L-TURN TURN	0	TURN-L NE-SE	01	DRVR	NONE	22 M	OR-Y	097	000	04
CITY						04	0	TRF SIGNAL	N	DRY	INJ	PSNGR CAR	PSNGR CAR				OR<25		000	00	
												02 NONE	STRGHT SW-NE					097	000	00	
												PRVTE	SW-NE					000	000	00	
												PSNGR CAR					OR<25	000	00	00	

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
PACIFIC HW 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 49

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	D C S L K	TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPLC USE	MOVE	A S	PRTC	INJ	G E LICNS	PED	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE																																
																											01	DRVR	NONE	29	F	OR-Y	097	000	00																							
01218	STATE	N N N N	N 03/31/2012	SA 9P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE	0	STRGHT	SW-NE	NONE	45	M	OR-Y	OR<25	020	000	04																																	
																										04	0	02	NONE	0	PRVTE	PSNGR CAR	01	DRVR	NONE	70	M	OR-Y	OR<25	000	00																	
																																										DLIT	INJ	TURN	PSNGR CAR	NE-SE	PRVTE	PSNGR CAR	01	DRVR	NONE	40	M	OR-Y	OR<25	000	00	
																																																										01
02254	CITY	N N N	N 06/23/2012	SA 6A	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE	0	STRGHT	SW-NE	NONE	40	M	OR-Y	OR<25	000	000	02																																	
																										04	0	02	NONE	0	PRVTE	PSNGR CAR	01	DRVR	NONE	40	M	OR-Y	OR<25	000	00																	
																																										DLIT	INJ	TURN	PSNGR CAR	NE-SE	PRVTE	PSNGR CAR	01	DRVR	NONE	43	F	OTH-Y	OR<25	000	00	
																																																										01
02653	NONE	N N N	N 07/21/2012	SA 1P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT	SW-NE	NONE	50	F	OR-Y	OR<25	000	000	02																																	
																										03	0	02	NONE	0	PRVTE	PSNGR CAR	01	DRVR	NONE	50	F	OR-Y	OR<25	000	00																	
																																										DAY	PDO	TURN	PSNGR CAR	NE-SE	PRVTE	PSNGR CAR	01	DRVR	NONE	00	F	UNK	UNK	028	000	02
03404	STATE	N N N N	N 09/13/2012	TH 7P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT	SW-NE	NONE	37	M	OR-Y	OR<25	000	000	02																																	
																										04	0	02	NONE	0	PRVTE	PSNGR CAR	01	DRVR	NONE	53	F	OR-Y	OR<25	000	00																	
																																										DUSK	INJ	TURN	PSNGR CAR	NE-SE	PRVTE	PSNGR CAR	01	DRVR	NONE	49	F	OR-Y	OR<25	000	00	
																																																										01
00388	STATE	N N N N	N 02/01/2013	FR 9P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT	SW-NE	NONE	23	M	OR-Y	OR<25	000	000	00																																	
																										03	0	02	NONE	0	PRVTE	PSNGR CAR	01	DRVR	NONE	23	M	OR-Y	OR<25	000	00																	
																																										DLIT	PDO	TURN	PSNGR CAR	NE-SE	PRVTE	PSNGR CAR	01	DRVR	NONE	01	M	OR-Y	OR<25	000	00	
																																																										01
00556	CITY	N N N	N 02/18/2013	MO 2P	14	PACIFIC HW 99E 14TH ST	INTER CN	3-LEG	N	N	CLD	ANGL-OTH	01	NONE	0	STRGHT	SW-NE	NONE	46	M	OR-Y	OR<25	000	000	02																																	
																										02	0	02	NONE	0	PRVTE	PSNGR CAR	01	DRVR	NONE	46	M	OR-Y	OR<25	000	00																	
																																										DAY	INJ	TURN	PSNGR CAR	NE-SE	PRVTE	PSNGR CAR	01	DRVR	NONE	01	M	OR-Y	OR<25	000	00	
																																																										01

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URBAN NON-SYSTEM CRASH LISTING PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015 Total crash records: 49

SER#	INVEST	P E L D C S L K	R A U C O M O	S W D A T E	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	COLL	SVRY	V#	PRVTE	PSNGR CAR	TURN-R	SE-NE	DRVR	NONE	32 M	OR-Y	OR<25	A S E L I C N S	P E D	LOC	ERROR	ACT EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

[illegible]

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

[illegible]

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

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
ANGLE	0	2	4	6	0	2	1	3	2	6	0	6	0	0
TURNING MOVEMENTS	0	2	1	3	0	2	0	3	0	3	0	3	0	0
YEAR 2015 TOTAL	0	4	5	9	0	4	1	6	2	9	0	9	0	0
YEAR: 2014														
ANGLE	0	2	4	6	0	3	0	6	0	4	2	6	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2014 TOTAL	0	2	5	7	0	3	0	6	1	5	2	7	0	0
YEAR: 2013														
ANGLE	0	1	4	5	0	1	0	5	0	5	0	5	0	0
YEAR 2013 TOTAL	0	1	4	5	0	1	0	5	0	5	0	5	0	0
YEAR: 2012														
ANGLE	0	4	0	4	0	4	0	3	1	4	0	4	0	0
YEAR 2012 TOTAL	0	4	0	4	0	4	0	3	1	4	0	4	0	0
YEAR: 2011														
ANGLE	0	2	0	2	0	4	0	2	0	2	0	2	0	0
PEDESTRIAN	0	1	0	1	0	1	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	0	2	0	2	0	0
YEAR 2011 TOTAL	0	4	1	5	0	6	0	3	1	4	1	5	0	0

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE
MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

0	15	15	30	0	18	1	23	5	27	3	30	0	0
FINAL TOTAL													

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/02/2017

URBAN NON-SYSTEM CRASH LISTING
MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 30

CITY OF OREGON CITY, CLACKAMAS COUNTY

S D P R S W			INT-TYPE			SPCL QTY			MOVE			A S			CAUSE		
SER#	E A U C O DATE	CLASS	CITY STREET	RD CHAR	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	FROM	TO	PRTC	INJ	G E LICNS	PED	ACT EVENT	CAUSE
INVEST	E L G H R DAY	DIST	FIRST STREET	DIRECT	LEGS	RNDVT	SURF	COLL	OWNER								
INVEST	D C S L K TIME	FROM	SECOND STREET	LOC TN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	PH TYPE	SVRTY	E X RES	LOC	ERROR		
02622	N N N	07/19/2012	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	88 F	OR-Y	000	00
	NONE	0	14TH ST	CN 02	0	STOP SIGN	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	NONE	30 F	OR-Y	000	00
										PSNGR CAR						000	00
																	000
02833	N N N	08/02/2012	MAIN ST	INTER	CROSS	N	N	CLR	BIKE	01 NONE	0	STRGHT	NONE	5	F	000	00
	NONE	0	14TH ST	CN 01	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	02 PSNG	NO<5	04 F		000	00
										PSNGR CAR						000	00
																	000
03088	N N N	08/20/2012	MAIN ST	INTER	CROSS	N	N	CLR	BIKE	01 NONE	0	STRGHT	NONE	58 M	OR-Y	000	00
	NONE	0	14TH ST	CN 01	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	INJB	29 M	I XWLK	039,021	05,03
										PSNGR CAR						000	00
																	000
03088	N N N	08/20/2012	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	58 M	OR-Y	000	00
	NONE	0	14TH ST	CN 01	0	STOP SIGN	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	NONE	17 M	OR-Y	021	03
										PSNGR CAR						000	03
																	000
00573	N N N	02/19/2013	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	63 F	OR-Y	000	00
	NONE	0	14TH ST	CN 03	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	INJC	67 F	OR-Y	000	00
										PSNGR CAR						000	00
																	000
00573	N N N	02/19/2013	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	60 F	OR-Y	000	02
	NONE	0	14TH ST	CN 03	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	NONE	60 F	OR-Y	000	00
										PSNGR CAR						000	00
																	000
00675	N N N	02/26/2013	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	41 M	OR-Y	015	00
	NONE	0	14TH ST	CN 01	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	NONE	20 M	OR-Y	028	02
										PSNGR CAR						000	00
																	000
00675	N N N	02/26/2013	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	56 F	OR-Y	015	00
	NONE	0	14TH ST	CN 01	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	NONE	20 M	OR-Y	021	03
										PSNGR CAR						000	00
																	000
00675	N N N	02/26/2013	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT	NONE	56 F	OR-Y	015	00
	NONE	0	14TH ST	CN 01	0	FLASHBCN-R	N	DRY	ANGL	PRVTE	SE-NW	01 DRVR	NONE	20 M	OR-Y	000	00
										PSNGR CAR						000	00
																	000

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

CDS380
03/02/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	S D P R S W			CLASS	CITY STREET	RD CHAR	INT-TYPE			OFFRD	WTHR	CRASH	SECL QTY	MOVE	PH TYPE	SVRTY	A S	LOC	ERROR	ACT EVENT	CAUSE											
		E L G H R DAY	D C S L K TIME	FROM				LEGS	TRAFF -	CONT'L													INT-REL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	FROM	PRTC	INJ	G E LICNS	PED
03506	NONE	N N N	09/08/2014	16	0	MAIN ST 14TH ST	INTER CN	CROSS	N	STOP SIGN	N	CLR	ANGL-OTH	01	NONE	0	STRGHT SE-NW	01	DRVR	NONE	40 M	OTH-Y	N-RES	028	000	000	00	02	03				
			MO 5P				02	0				N	DAY	PSNGR CAR	01	DRVR	NONE	24 M	OR-Y	OR<25	000	000	000	00	00	00	00	00					
														02	NONE	0	STRGHT SW-NE	UNKN						000	000	00	00	00					
															PSNGR CAR		PSNGR CAR						021	000	000	00	03	03					
04665	NONE	N N N	11/17/2014	16	0	MAIN ST 14TH ST	INTER CN	CROSS	N	FLASHBCN-R	N	CLR	ANGL-OTH	01	NONE	0	STRGHT NE-SW	01	DRVR	NONE	66 M	OR-Y	OR<25	028	000	000	00	02	02				
			MO 10A				01	0				N	DAY	PSNGR CAR	01	DRVR	NONE	66 M	OR-Y	OR<25	000	000	000	00	00	00	00	00					
														02	NONE	0	STRGHT SE-NW	PRVTE						000	000	00	00	00					
															PSNGR CAR		PSNGR CAR						000	000	000	00	00	00					
04069	NONE	N N N	10/13/2014	16	0	MAIN ST 14TH ST	INTER CN	CROSS	N	STOP SIGN	N	CLR	ANGL-OTH	01	NONE	0	STRGHT NW-SE	01	DRVR	NONE	20 M	OTH-Y	OR<25	028	000	000	00	02	02				
			MO 6P				04	0				N	DUSK	PSNGR CAR	01	DRVR	NONE	20 M	OTH-Y	OR<25	000	000	000	00	00	00	00	00					
														01	NONE	0	STRGHT NW-SE	PRVTE						000	000	00	00	00					
															PSNGR CAR		PSNGR CAR						000	000	000	00	00	00					
														02	NONE	0	STRGHT SW-NE	PRVTE						015	000	00	00	00					
															PSNGR CAR		PSNGR CAR						000	000	000	00	00	00					
00432	NONE	N N N	02/03/2015	16	0	MAIN ST 14TH ST	INTER CN	CROSS	N	FLASHBCN-R	N	UNK	ANGL-OTH	01	NONE	0	STRGHT NW-SE	01	DRVR	NONE	38 M	OTH-Y	N-RES	000	000	000	00	02	02				
			TU 11A				03	0				N	DAY	TRUCK	01	DRVR	NONE	38 M	OTH-Y	N-RES	000	000	000	00	00	00	00	00					
														02	NONE	0	STRGHT NE-SW	PRVTE						015	000	00	00	00					
															PSNGR CAR		PSNGR CAR						028	000	000	00	02	02					
01732	NONE	N N N	05/08/2015	17	0	MAIN ST 14TH ST	INTER CN	CROSS	N	FLASHBCN-R	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT NW-SE	01	DRVR	NONE	40 M	OR-Y	OR<25		015	000	00	02	02				
			FR 6P				03	0				N	DAY	PSNGR CAR	01	DRVR	NONE	40 M	OR-Y	OR<25	000	000	000	00	00	00	00	00					
														02	NONE	0	TURN-L SE-SW	PRVTE						015	000	00	02	02					
															PSNGR CAR		PSNGR CAR						028,004	000	000	00	02	02					
03374	NONE	N N N	08/18/2015	17	0	MAIN ST 14TH ST	INTER CN	CROSS	N	FLASHBCN-R	N	CLR	ANGL-OTH	01	NONE	0	TURN-L SW-NW	01	DRVR	NONE	65 M	OR-Y	OR<25		015	000	00	03	03				
			TU 5P				01	0				N	DAY	PSNGR CAR	01	DRVR	NONE	55 M	OTH-Y	N-RES	021	000	000	000	00	00	00	03					

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CDS380
03/02/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

CITY OF OREGON CITY, CLACKAMAS COUNTY

SER#	INVEST	D C S L K TIME			CLASS	CITY STREET		RD CHAR	INT-TYPE (MEDIAN)		OFFRD	WTHR	CRASH	SPCL USE		MOVE	A S						PRTC	INJ	G E LICNS	PED	LOC	ERROR	ACT EVENT	CAUSE						
		E A U C O DATE	E L G H R DAY	FROM		DIST	FIRST STREET		SECOND STREET	LOCN				DIRECT	TRAFF- (LANES)		CONTL	DRVWY	LIGHT	SURF	COLL	OWNER									TLR QTY	FROM	PH TYPE	SVRTY	E X RES	OR<25
05284	N N N	12/10/2015	0	17	MAIN ST	14TH ST	03	INTER	CROSS	N	N	RAIN	WET	ANG<OTH	01 NONE	0	STRGHT	NE-SW	01 DRVR	NONE	70 M	OR-Y	OR<25	028	015	00	00	00								
NO RPT	N N N	TH 12P						CN 03	0	FLASHCN-R	N	N	DAY	INJ	PSNGR CAR		NE-SW	01 DRVR	NONE	70 M	OR-Y	OR<25	000	000	00	00	00									
																							</													

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING
MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
Total crash records: 30

CITY OF OREGON CITY, CLACKAMAS COUNTY

S D		P R S W		E A U C O DATE		CLASS		CITY STREET		RD CHAR		INT-TYPE (MEDIAN)		OFFRD WTHR		CRASH		SPCL USE		MOVE		A S		P ETC INJ		P# TYPE SVRTY		E X RES		LOC		ERROR		ACT EVENT		CAUSE	
SER#		E L G H R DAY		DIST		FROM		FIRST STREET		DIRECT		LEGS		TRAP-		RNDPT SURF		V# TYPE		OWNER		TO		P# TYPE SVRTY		E X RES		LOC		ERROR		ACT EVENT		CAUSE			
INVEST		D C S L K TIME		FROM				SECOND STREET		LOCN		(H/ANRS)		CONTL		DRVMY LIGHT		SVRTY		02 NONE		0		STRGHT		01 DRVR		NONE		48 F		OR-Y		000		00	
																		PRVTE		NW-SE										000		00					
																		PSNGR CAR												000		00					

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

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

WASHINGTON ST at 7TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2015 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2014														
ANGLE	0	1	2	3	0	1	0	2	1	3	0	3	0	0
REAR-END	0	1	0	1	0	1	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2014 TOTAL	0	2	3	5	0	2	0	3	2	3	2	5	0	0
YEAR: 2013														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	0	0	1	0	1	0	0
YEAR 2012 TOTAL	0	0	1	1	0	0	0	0	0	1	0	1	0	0
YEAR: 2011														
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR 2011 TOTAL	0	1	0	1	0	2	0	1	0	1	0	1	0	0
FINAL TOTAL	0	4	5	9	0	5	0	6	2	6	3	9	0	0

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

CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

WASHINGTON ST at 7TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 9

SER#	INVEST	D C S L K TIME	N N N	P R S W	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPCL USE		MOVE	PRTC	INJ	G E L I C N S	P E D	CAUSE											
													LOC	LOC							PH TYPE	SVRTY	E X RES	LOC	ACT EVENT						
01983	CITY	N N N	05/23/2014	FR 9P	16	WASHINGTON ST 7TH ST	SE 06	CROSS	N	TRF SIGNAL	N	CLR	S-1STOP	01 NONE 0	STRGHT	SE-NW	01	DRVR	NONE	00	Unk	UNK	026	000	000	013	29				
														02 NONE 0	STOP	SE-NW	01	DRVR	NONE	19	F	OR-Y	OR<25	000	011	013	00	00	00	29	
														03 NONE 0	STOP	SE-NW	01	DRVR	NONE	38	F	OR-Y	OR<25	000	022	000	000	00	00	00	00
														01 NONE 0	STRGHT	NW-SE	01	DRVR	NONE	33	M	OR-Y	OR<25	000	000	000	00	00	00	00	
														02 NONE 0	TURN-R	SW-SE	01	DRVR	INJC	51	F	OR-Y	OR<25	028	016	000	00	02	00	00	
														02 NONE 0	TURN-R	SW-SE	02	PSNG	INJC	16	F			000	016	000	00	00	00	00	
														01 NONE 0	STRGHT	NE-SW	01	DRVR	NONE	69	F	OR-Y	OR<25	097	000	000	00	00	00	00	
														02 NONE 0	STRGHT	NW-SE	01	DRVR	NONE	18	F	OR-Y	UNK	097	000	000	00	00	00	00	
														01 NONE 0	STRGHT	NE-SW	01	DRVR	INJC	42	M	OR-Y	OR<25	000	000	000	00	00	00	00	
														02 NONE 0	TURN-L	SW-NW	01	DRVR	NONE	65	F	OR-Y	OR<25	028,004	000	000	00	02	00	00	
														01 NONE 0	STRGHT	NW-SE	01	DRVR	NONE	50	M	OR-Y	OR<25	000	000	000	00	00	00	00	
														02 NONE 0	TURN-R	SW-NE	01	DRVR	NONE	00	Unk	UNK	UNK	020	000	000	00	04	00	00	

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

WASHINGTON ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR 2015 TOTAL	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR: 2014														
FIXED / OTHER OBJECT	0	0	1	1	0	0	1	1	0	0	1	1	0	1
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2014 TOTAL	0	1	1	2	0	1	1	2	0	1	1	2	0	1
YEAR: 2013														
TURNING MOVEMENTS	0	1	1	2	0	5	0	1	1	0	2	2	0	0
YEAR 2013 TOTAL	0	1	1	2	0	5	0	1	1	0	2	2	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR: 2011														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2011 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	5	4	9	0	9	1	7	2	6	3	9	0	1

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

CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

WASHINGTON ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 9

S P E S E L D C O D E R S W	INVEST D C S L K T I M E	DATE 05/28/2014 WE 8A	DIST 0	CLASS 16	CITY STREET WASHINGTON ST 14TH ST	RD CHAR INTER 06	INT-TYPE (MEDIAN) CROSS 0	INT-BEL TRAF- (LANES) CROSS 0	OFFRD N	WTHR N	CRASH DRY	COLL REAR	SPCL USE 01 NONE PRVTE PSNGR CAR	MOVE NE-SW	FROM 01 DRIVER NONE	TO STRGHT	SVRTY NONE	INJ 40 F	RES OR-Y OR<25	LOC 043,026	ERROR 000	ACT EVENT 000	CAUSE 07
02018 CITY	N N N	05/28/2014 WE 8A	0	16	WASHINGTON ST 14TH ST	INTER 06	CROSS 0	TRF SIGNAL N	N	CLD DAY	DRY	REAR INJ	01 NONE PRVTE PSNGR CAR	NE-SW	01 DRIVER NONE	STRGHT	NONE	40 F	OR-Y OR<25	043,026	000	000	07
00650 CITY	N N N	02/13/2014 TH 6P	0	16	WASHINGTON ST 14TH ST	INTER 06	CROSS 0	TRF SIGNAL N	Y	CLD DRY	FIX DARK	FIX PDO	01 NONE PRVTE SEMI TOW	TURN-R NW-SW	01 DRIVER NONE	TURN-R NW-SW	NONE	22 M	OR-Y OR<25	002	055	000	08
02972 NONE	N N N	07/23/2015 TH 4P	0	16	WASHINGTON ST 14TH ST	INTER 06	CROSS 0	TRF SIGNAL N	N	CLR DAY	S-1STOP REAR	INJ	01 NONE PRVTE PSNGR CAR	STRGHT NW-SE	01 DRIVER NONE	STRGHT NW-SE	NONE	39 F	OR-Y OR<25	026	000	000	29
04634 NONE	N N N	11/06/2015 FR 3P	0	16	WASHINGTON ST 14TH ST	INTER 06	CROSS 0	TRF SIGNAL N	N	CLR DAY	S-1STOP REAR	INJ	01 NONE UNKN PSNGR CAR	STRGHT NW-SE	01 DRIVER NONE	STRGHT NW-SE	NONE	00 M	UNK UNK	026	000	000	29
03563 NONE	N N N	09/22/2011 TH 5P	0	16	WASHINGTON ST 14TH ST	INTER 01	CROSS 0	TRF SIGNAL N	N	CLR DAY	O-1 L-TURN TURN	PDO	02 NONE PRVTE PSNGR CAR	STRGHT NW-SE	01 DRIVER NONE	STRGHT NW-SE	NONE	53 F	OR-Y OR<25	000	011	000	00
00866 NONE	N N N	03/06/2012 TU 9A	0	16	WASHINGTON ST 14TH ST	INTER 02	CROSS 0	TRF SIGNAL N	N	CLR DAY	ANGL-OTH ANGL	PDO	01 NONE PRVTE PSNGR CAR	STRGHT SE-NW	01 DRIVER NONE	STRGHT SE-NW	NONE	84 M	OR-Y OR<25	000	004,028	000	02
00960 CITY	N N N	03/14/2012 WE 4P	0	17	WASHINGTON ST 14TH ST	INTER 03	CROSS 0	STOP SIGN N	N	RAIN WET	ANGL-OTH TURN	INJ	02 NONE PRVTE PSNGR CAR	STRGHT SW-NE	01 DRIVER NONE	STRGHT SW-NE	NONE	44 F	OR-Y OR<25	020	000	000	04
	N N N	03/14/2012 WE 4P	0	17	WASHINGTON ST 14TH ST	INTER 03	CROSS 0	STOP SIGN N	N	RAIN WET	ANGL-OTH TURN	INJ	01 NONE PRVTE PSNGR CAR	STRGHT NW-SE	01 DRIVER NONE	STRGHT NW-SE	NONE	39 F	OR-Y OR<25	028	015	000	02
	N N N	03/14/2012 WE 4P	0	17	WASHINGTON ST 14TH ST	INTER 03	CROSS 0	STOP SIGN N	N	RAIN WET	ANGL-OTH TURN	INJ	02 NONE PRVTE PSNGR CAR	STRGHT NW-SE	01 DRIVER NONE	STRGHT NW-SE	NONE	39 F	OR-Y OR<25	028	000	000	00

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CDS380
03/01/2017

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

WASHINGTON ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 9

SER#	INVEST	S D P R S W			CLASS	CITY STREET	INT-TYPE				SPL USE				MOVE	FROM	PH TYPE				A S	G E LICNS	PED	ACT EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		E A U C O DATE	E L G H R DAY	D C S L K TIME			RD CHAR	INT-REL	OFFRD	WTHR	CRASH	TRAF -	LEGS	CONTL			DRVWY	LIGHT	SVRTY	COLL						OWNER	V#	TO	PRIC	INJ	SVRTY	E X RES	LOC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR 2015 TOTAL	0	2	1	3	0	2	0	2	1	2	1	3	0	0
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	2	1	2	1	3	0	0
YEAR 2014 TOTAL	0	1	3	4	0	1	0	3	1	3	1	4	0	0
YEAR: 2013														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2013 TOTAL	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR: 2012														
ANGLE	0	1	1	2	0	2	0	1	1	1	1	2	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	3	0	3	0	3	0	0
YEAR 2012 TOTAL	0	3	3	6	0	4	0	5	1	5	1	6	0	0
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0

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

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- PROPERTY		TOTAL CRASHES	PEOPLE		TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION		INTER- SECTION RELATED	OFF- ROAD
		FATAL CRASHES	DAMAGE ONLY		KILLED	INJURED						SECTION	SECTION		
TURNING MOVEMENTS	0	1	1	2	0	2	0	2	0	1	1	2	2	0	0
YEAR 2011 TOTAL	0	3	2	5	0	4	0	5	0	4	1	5	5	0	0
FINAL TOTAL	0	11	9	20	0	13	0	17	3	16	4	20	20	0	0

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING
WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 20

SER#	INVEST	D C S L K TIME	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPL USE	MOVE	FROM	PRTC	INJ	A S	PED	LOC	ERROR	ACT EVENT	CAUSE
01896	N N N	05/23/2012	0	16	WASHINGTON ST 15TH ST	INTER NE	CROSS	N	CLR	S-1STOP REAR	01 NONE PRVTE PSNGR CAR	0	STRGHT NE-SW	01 DRVR	NONE	35 M	OR-Y OR<25	026		000	00
NONE		WE 5P																		011	00
																				000	00
00020	N N N	01/03/2011	0	16	WASHINGTON ST 15TH ST	INTER NW	CROSS	N	CLR	S-1STOP REAR	01 NONE PRVTE PSNGR CAR	0	STRGHT NW-SE	01 DRVR	NONE	00 UNK	UNK	026		000	00
NO RPT		10A																		011	00
																				000	00
02978	N N N	08/12/2011	0	16	WASHINGTON ST 15TH ST	INTER NW	CROSS	N	CLR	S-1STOP REAR	01 NONE PRVTE PSNGR CAR	0	STRGHT NW-SE	01 DRVR	NONE	00 M	UNK	026		013	00
NONE		FR 3P																		000	00
																				000	07
																				011	00
																				000	00
00548	Y N N	02/07/2014	0	16	WASHINGTON ST 15TH ST	INTER NW	CROSS	N	SNOW	ANGL-STP TURN	01 NONE PRVTE PSNGR CAR	0	TURN-R NE-NW	01 DRVR	NONE	00 M	UNK	047,001		124	00
NONE		FR 3P																		000	00
																				000	01,08
																				011	00
																				000	00
01851	N N N	05/27/2011	0	16	WASHINGTON ST 15TH ST	INTER CN	CROSS	N	CLD	O-1 L-TURN TURN	01 NONE PRVTE PSNGR CAR	0	STRGHT SE-NW	01 DRVR	NONE	30 F	OTH-Y N-RES	000		000	00
CITY		FR 10P																		000	00
																				000	02
																				000	00
02174	Y N N	06/19/2011	0	16	WASHINGTON ST 15TH ST	INTER CN	CROSS	N	CLR	ANGL-STP TURN	01 NONE PRVTE PSNGR CAR	0	TURN-R SE-NE	01 DRVR	NONE	44 M	OR-Y OR<25	052,043		001	00
CITY		SU 12P																		017	32,01
																				012	00
																				000	00

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

[illegible]

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

WASHINGTON ST at ABERNATHY RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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

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

WASHINGTON ST at 17TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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

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

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

WASHINGTON ST at PRAIRIE SCHOONER WY, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR 2015 TOTAL	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2014 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2013														
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	0	1	1	0	0
YEAR 2013 TOTAL	0	1	0	1	0	1	0	0	1	0	1	1	0	0
FINAL TOTAL	0	1	2	3	0	1	0	1	2	1	2	3	0	0

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CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

WASHINGTON ST at PRAIRIE SCHOONER WY, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 3

S D		P R S W		INT-TYPE										SPL USE		A S										CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
SER#	INVEST	D C S L K TIME	N N N	TH	0	16	CITY STREET		RD CHAR	INT-REL		OFFRD	WTHR	CRASH	TEL# QTY	MOVE	FROM	PRIC	INJ	G E LICNS	PED	LOC	ERROR	ACT EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
							FIRST STREET	SECOND STREET		LOCN	DIRECT															LEGS	TRAP-	INT-REL	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD CHAR	RD 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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at CLACKAMAS RIVER DR, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- PROPERTY		TOTAL CRASHES	PEOPLE		TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
		FATAL CRASHES	DAMAGE ONLY		KILLED	INJURED								
YEAR: 2015														
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2015 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2014 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
FINAL TOTAL	0	0	2	2	0	0	0	0	2	0	2	2	0	0

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

WASHINGTON ST at CLACKAMAS RIVER DR, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 2

CITY OF OREGON CITY, CLACKAMAS COUNTY

[illegible]

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

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

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	4	6	0	3	0	4	1	5	1	6	0	0
SIDESWIPE - OVERTAKING	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	0	3	5	8	0	4	0	5	2	7	1	8	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
YEAR 2011 TOTAL	0	3	5	8	0	6	0	5	2	6	2	8	0	0
FINAL TOTAL	0	6	10	16	0	10	0	10	4	13	3	16	0	0

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CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

URBAN NON-SYSTEM CRASH LISTING

Total crash records: 16

SER#	INVEST	N N N	D C S L K	T H	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	SPL CL QTY	MOVE	FROM	PRTC	INJ	A S	PED	LOC	ERROR	ACT	EVENT	CAUSE
04848	04848	N N N	12/16/2011	FR	14	CASCADE HW SOUTH WASHINGTON ST	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT	UN-UN	01 DRV	NONE	00 M	OR-Y	OR<25	026	000	07	
NONE	NONE	N N N	12/16/2011	5P			UN	CROSS	TRF SIGNAL	N	UNK	REAR	PRVTE	UN-UN								000	07	
							06				DUSK	PDO	PSNGR CAR								000	07		
													02 NONE 0	STOP	UN-UN	01 DRV	NONE	64 M	OR-Y	OR<25	000	011	00	
													PSNGR CAR								000	00		
																							00	
81700	81700	N N N	02/16/2012	TH	14	CASCADE HW SOUTH WASHINGTON ST	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT	N -S	01 DRV	NONE	00	UNK	UNK	026	000	07	
NONE	NONE	N N N	02/16/2012	10A			06	1	TRF SIGNAL	N	WET	REAR	UNKN	N -S								000	07	
											DAY	PDO	UNKNOWN									000	07	
													02 NONE 0	STOP	N -S	01 DRV	NONE	74 M	OR-Y	OR<25	000	011	013	
													PRVTE	N -S								000	00	
													PSNGR CAR									000	00	
													03 NONE 0	STOP	N -S							022	00	
													UNKN	N -S								000	00	
													UNKNOWN									000	00	
																							00	
01339	01339	N N N	04/20/2011	WE	14	CASCADE HW SOUTH WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT	SE-NW	01 DRV	NONE	21 F	OR-Y	OR<25	026	000	07	
NONE	NONE	N N N	04/20/2011	11A			06	1	TRF SIGNAL	N	DRY	REAR	PRVTE	SE-NW								000	07	
											DAY	INJ	PSNGR CAR									000	07	
													02 NONE 0	STOP								011	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP	SE-NW	01 DRV	INJC	24 F	OR-Y	OR<25	000	011	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
																							00	
01822	01822	N N N	05/13/2011	FR	14	CASCADE HW SOUTH WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT	SE-NW	01 DRV	NONE	00 F	OTH-Y	N-RES	026	000	07	
NONE	NONE	N N N	05/13/2011	3P			06	0	TRF SIGNAL	N	DRY	REAR	PRVTE	SE-NW								000	07	
											DAY	PDO	PSNGR CAR									000	07	
													02 NONE 0	STOP								011	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP								011	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP	SE-NW	02 PSNG	NO<5	01 M		000	011	00	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP								011	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP	SE-NW	04 PSNG	NO<5	04 F		000	011	00	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP								011	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	
													02 NONE 0	STOP	SE-NW	04 PSNG	NO<5	02 F		000	011	00	00	
													PRVTE	SE-NW								000	00	
													PSNGR CAR									000	00	

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 16

[illegible]

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

CITY OF OREGON CITY, CLACKAMAS COUNTY
WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015
URBAN NON-SYSTEM CRASH LISTING
Total crash records: 16

SER#	INVEST	D C S L K TIME	FROM	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-BEL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PATC	INJ	A S	E L I C N S	PED	CAUSE
NO RPT					LOCN	LOCTN	CONTL	DRVWY	LIGHT	SURTY	V# TYPE	TO	P# TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT
											PSNGR CAR		01	DRVR	NONE	00 M	UNK	000
01212	N N N	03/31/2012	14	CASCADE HY SOUTH	INTER	INTER	CROSS	N	CLR	S-1STOP	01 NONE	0	01	DRVR	NONE	00 M	UNK	000
NONE		SA 2P		WASHINGTON ST	NW 06	NW 06	1	N	DRY	REAR	PRVTE	NW-SE	01	DRVR	NONE	00 M	UNK	000
											PSNGR CAR						026	07
											02 NONE	0					OR>25	
											PRVTE	NW-SE					011	00
											PSNGR CAR		01	DRVR	NONE	73 F	OR-Y	000
																	000	00
																	OR<25	
01295	N N N	04/07/2012	14	CASCADE HY SOUTH	INTER	INTER	CROSS	N	CLR	S-1STOP	01 NONE	0	01	DRVR	NONE	00 M	OR-Y	000
NONE		SA 4P		WASHINGTON ST	NW 06	NW 06	1	N	DRY	REAR	UNKN	NW-SE	01	DRVR	NONE	00 M	OR-Y	000
											PSNGR CAR						026	07
											02 NONE	0					UNK	
											PRVTE	NW-SE					011	00
											PSNGR CAR		01	DRVR	NONE	50 M	OR-Y	000
																	000	00
																	OR<25	
02387	N N N	07/03/2012	14	CASCADE HY SOUTH	INTER	INTER	CROSS	N	CLD	S-1STOP	01 NONE	0	01	DRVR	NONE	75 F	OR-Y	000
NONE		TU 11A		WASHINGTON ST	NW 06	NW 06	1	N	DRY	REAR	PRVTE	NW-SE	01	DRVR	NONE	75 F	OR-Y	000
											PSNGR CAR						026	07
											02 NONE	0					OR<25	
											PRVTE	NW-SE					012	00
											PSNGR CAR		01	DRVR	INJC	23 F	OR-Y	000
																	000	00
																	OR<25	
03599	N N N	09/28/2012	14	CASCADE HY SOUTH	INTER	INTER	CROSS	N	CLR	S-1STOP	01 NONE	0	01	DRVR	NONE	57 M	OR-Y	000
NO RPT		FR 1P		WASHINGTON ST	NW 06	NW 06	0	N	DRY	REAR	PRVTE	NW-SE	01	DRVR	NONE	57 M	OR-Y	000
											PSNGR CAR						026	07
											02 NONE	0					OR<25	
											PRVTE	NW-SE					011	00
											PSNGR CAR		01	DRVR	INJC	21 M	OR-Y	000
																	000	00
											02 NONE	0					OR<25	
											PRVTE	NW-SE					011	00
											PSNGR CAR		02	PSNG	INJC	60 F	000	00
																	000	00
01864	N N N	05/28/2011	14	CASCADE HY SOUTH	INTER	INTER	CROSS	N	RAIN	ANGL-OTH	01 NONE	0	01	DRVR	NONE	35 M	OR-Y	000
NONE		SA 6P		WASHINGTON ST	CN 04	CN 04	0	N	WET	ANGL	PRVTE	NW-SE	01	DRVR	NONE	35 M	OR-Y	000
											PSNGR CAR						020	04
											02 NONE	0					OR<25	
											PRVTE	SW-NE					000	00
											PSNGR CAR		01	DRVR	NONE	34 F	OTH-Y	000
																	000	00
																	N-RES	
03019	N N N	08/19/2011	14	CASCADE HY SOUTH	INTER	INTER	CROSS	N	CLR	S-OTHER	01 NONE	0	01	DRVR	NONE	61 M	OTH-Y	000
CITY		FR 12P		WASHINGTON ST	CN 01	CN 01	0	N	DRY	TURN	PRVTE	NW-SW	01	DRVR	NONE	61 M	OTH-Y	031
											PSNGR CAR						000	06
											02 NONE	0					N-RES	
																	000	00
																	000	00

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CDS380
03/01/2017

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

URBAN NON-SYSTEM CRASH LISTING

Total crash records: 16

SER#	INVEST	D C S L K TIME	FROM	CLASS	CITY STREET	RD CHAR	INT-TYPE (MEDIAN)	INT-REL LEGS TRAF- (#LANES)	CONTL	DRVWY	LIGHT	SURT	V# TYPE	OWNER	TRLR QTY	SPCL USE	MOVE	FROM	PRTC	INJ	A S	E LICNS	PED	LOC	ERROR	ACT EVENT	CAUSE
03865	N N N	10/16/2012	14		CASCADE HY SOUTH	INTER	CROSS	N	N	N	CLR	ANGL-OTH	01 NONE	0				STRGHT	01 DRVR	NONE	44 M	OR-Y	OR>25		001	000	00
NONE		TU			WASHINGTON ST	CN	1	TRF SIGNAL	N	N	DRY	ANGL	UNKN					W -E								000	00
		4P				03			N	N	DAY	PDO	UNKNOWN						01 DRVR	NONE	00	Unk	UNK		028	000	02
													02 NONE	0				STRGHT								000	00
													PRVTE					N -S	01 DRVR	NONE	73 F	OR-Y	OR<25		000	000	00
													PSNGR CAR													000	00

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

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	1
REAR-END	0	4	0	4	0	7	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	1	1	0	1	0	1	0	0
YEAR 2015 TOTAL	0	4	2	6	0	7	1	6	0	5	1	6	0	1
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	0	0	1	0	1	0	0
MISCELLANEOUS	0	1	0	1	0	1	0	1	0	0	0	1	0	0
REAR-END	0	2	0	2	0	3	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR 2014 TOTAL	0	4	1	5	0	6	0	4	0	4	0	5	0	0
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
YEAR 2013 TOTAL	0	3	1	4	0	4	0	3	1	3	1	4	0	0
YEAR: 2012														
BACKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR 2012 TOTAL	0	2	1	3	0	2	0	3	0	3	0	3	0	0
FINAL TOTAL	0	13	5	18	0	19	1	16	1	15	2	18	0	1

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 18

[illegible]

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CITY OF OREGON CITY, CLACKAMAS COUNTY

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 18

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CDS380
03/01/2017

URBAN NON-SYSTEM CRASH LISTING

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

CITY OF OREGON CITY, CLACKAMAS COUNTY

Total crash records: 18

S D		P R S W		E A U C O DATE		CLASS		CITY STREET		RD CHAR		INT-TYPE (MEDIAN)		OFFRD WTHR		CRASH		SPCL USE		MOVE		A S		P E L C N S		P E D		A C T E V E N T		C A U S E							
SER#		E L G H R DAY		DIST		FROM		FIRST STREET		DIRECT		LEGS		TRAF-		RNDBT SURF		V# TYPE		OWNER		P# TYPE		SVRTY		E X RES		L O C		E R R O R		C A U S E					
INVEST		D C S L K TIME		FROM		SECOND STREET		LOCN		LOCN		CONTL		DRVWY		LIGHT		SURT		TO		STRGHT		NE-SW		02 PSNG		INJB		05 M		000		000		00	
																				PRVTE		NE-SW															
03266	N N N	08/22/2014		14		CLACKAMAS RIVER DR		INTER		CN		CROSS	N	N	UNK		ANGL-OTH	01 NONE	0	STRGHT		UN-UN		01 DRVR	NONE	44 F	OR-Y		OR<25		000	000	00	00	16,04		
NO RPT		FR	7A			CASCADE HY SOUTH		01				0			DAY		PDO	PSNGR CAR																			
																		02 NONE	0	STRGHT		NW-SE		01 DRVR	NONE	23 M	UNK		OR-25		000	025	16,04				
																		PRVTE																			
																		PSNGR CAR																			
02654	N N N	07/01/2015		14		CLACKAMAS RIVER DR		INTER		CN		CROSS	N	N	CLR		S-1TURN	01 NONE	0	TURN-R		N -W		01 DRVR	NONE	00 M	OR-Y		OR<25		000	000	08	08			
NONE		WE	10A			CASCADE HY SOUTH		01				0			DAY		PDO	TRUCK																			
																		02 NONE	0	STRGHT		N -S		01 DRVR	NONE	71 F	OR-Y		OR<25		000	000	00	00			
																		PRVTE																			
																		PSNGR CAR																			

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Left-Turn Lane Warrant Analysis

Le

Project: 17014 - Abernethy Place
 Intersection: 14th Street at Main Street
 Date: 4/11/2017
 Scenario: Existing Conditions - AM Peak Hour (NEB)

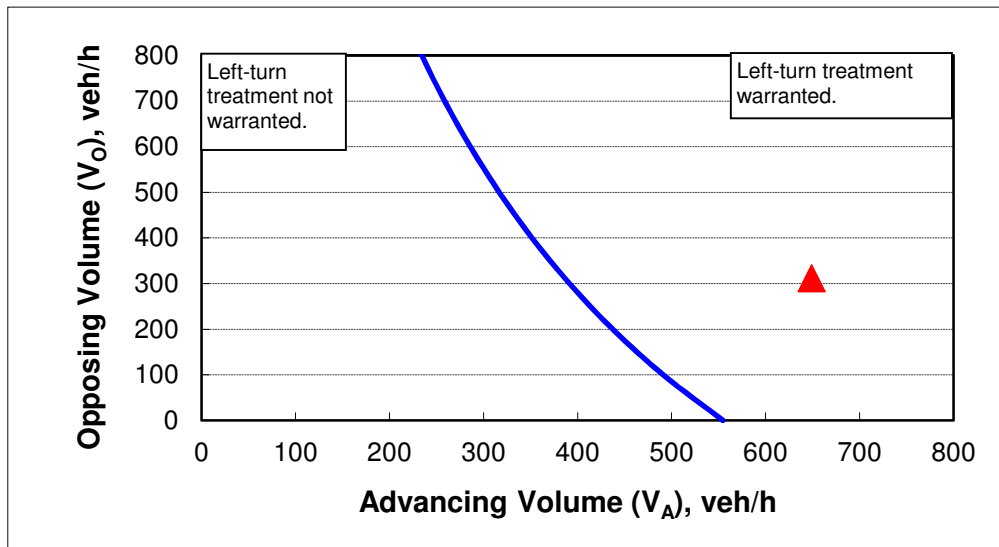
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	20
Percent of left-turns in advancing volume (V_A), %:	18%
Advancing volume (V_A), veh/h:	649
Opposing volume (V_O), veh/h:	311

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	387
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Le

Project: 17014 - Abernethy Place
 Intersection: 14th Street at Main Street
 Date: 4/11/2017
 Scenario: Existing Conditions - PM Peak Hour (NEB)

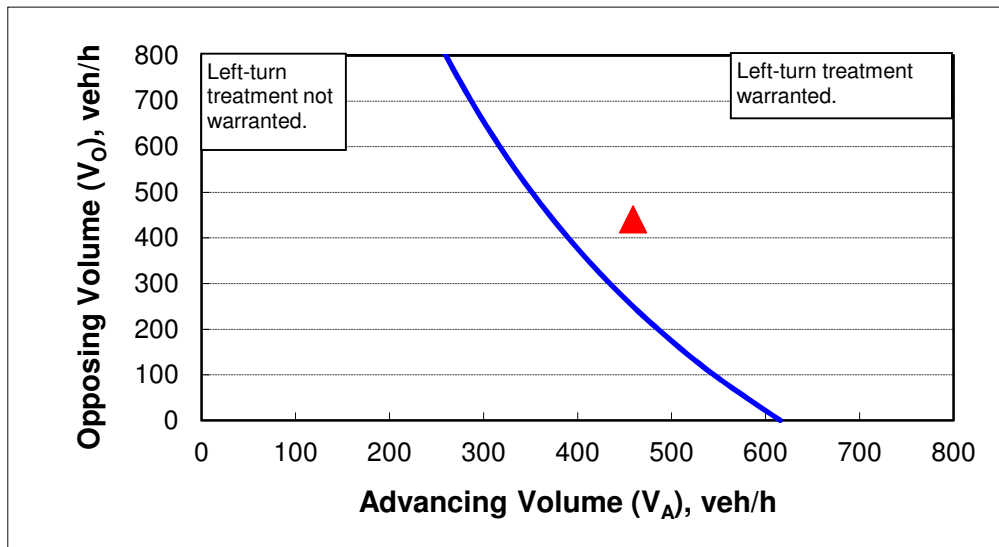
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	20
Percent of left-turns in advancing volume (V_A), %:	14%
Advancing volume (V_A), veh/h:	459
Opposing volume (V_O), veh/h:	440

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	374
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Le

Project: 17014 - Abernethy Place
 Intersection: Site Access at Washington Street
 Date: 4/11/2017
 Scenario: 2022 Background plus Site Conditions - AM Peak Hour

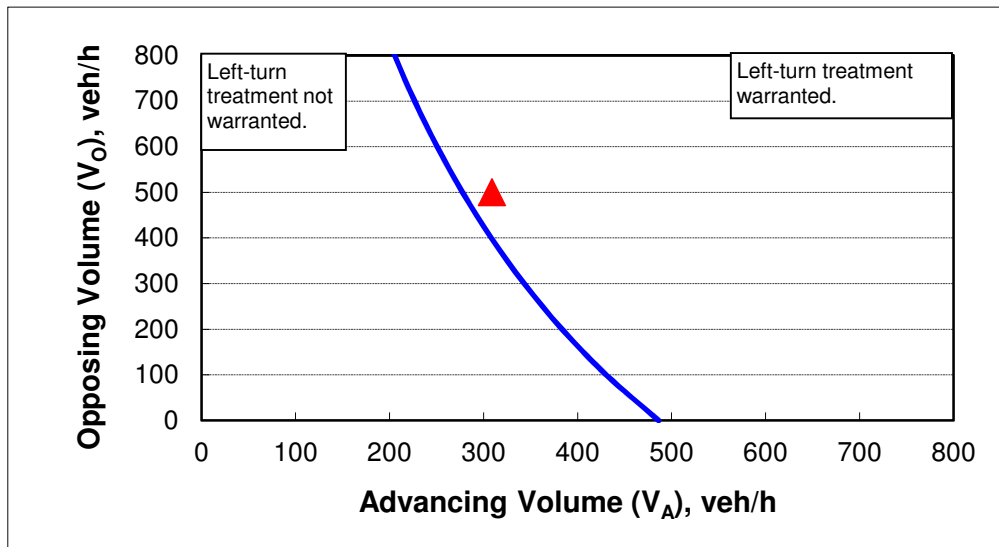
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	17%
Advancing volume (V_A), veh/h:	309
Opposing volume (V_O), veh/h:	500

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	278
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Le

Project: 17014 - Abernethy Place
Intersection: Site Access at Washington Street
Date: 4/11/2017
Scenario: 2022 Background plus Site Conditions - PM Peak Hour

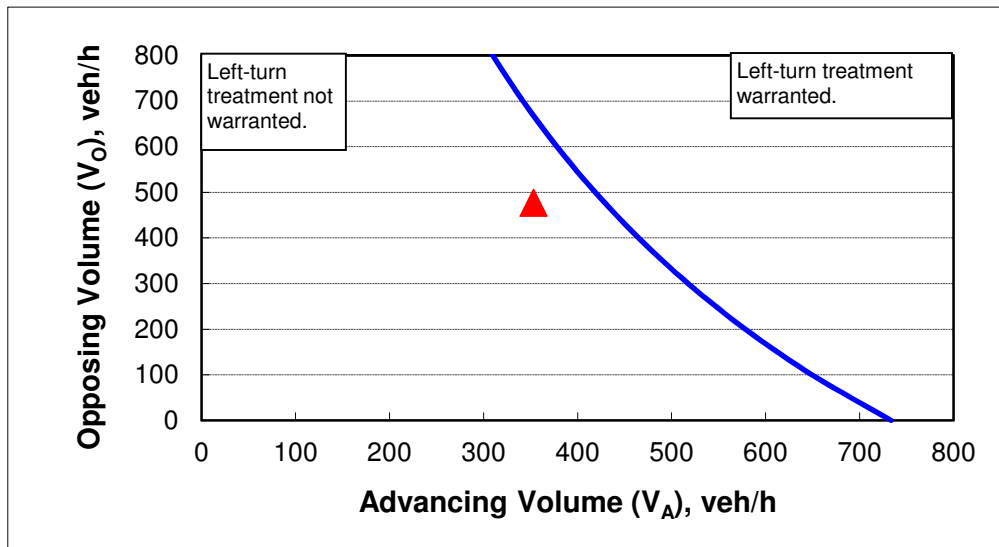
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	7%
Advancing volume (V_A), veh/h:	353
Opposing volume (V_O), veh/h:	477

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	429
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Traffic Signal Warrant Analysis

Project: 17014 - Abernethy Place
 Date: 4/11/2017
 Scenario: Year 2022 Background plus Site Conditions

Major Street:	OR-99E	Minor Street:	15th Street
Number of Lanes:	2	Number of Lanes:	1
PM Peak Hour Volumes:	3998	PM Peak Hour Volumes:	0

Warrant Used:

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

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
		100%	70%	100%	70%
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500

WARRANT 1, CONDITION A

		100%	70%	100%	70%
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

WARRANT 1, CONDITION B

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

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	39,980	10,600	
Minor Street*	0	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	39,980	15,900	
Minor Street*	0	1,350	No
<i>Combination Warrant</i>			
Major Street	39,980	12,720	
Minor Street*	0	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the right-turn capacity.

Traffic Signal Warrant Analysis

Project: 17014 - Abernethy Place
 Date: 4/11/2017
 Scenario: Year 2022 Background plus Site Conditions

Major Street:	Main Street	Minor Street:	14th Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	1015	PM Peak Hour Volumes:	165

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

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

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

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	10,150	8,850	
Minor Street*	1,650	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	10,150	13,300	
Minor Street*	1,650	1,350	No
<i>Combination Warrant</i>			
Major Street	10,150	10,640	
Minor Street*	1,650	2,120	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: 17014 - Abernethy Place
 Date: 4/11/2017
 Scenario: Year 2022 Background plus Site Conditions

Major Street:	Washington Street	Minor Street:	Site Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	830	PM Peak Hour Volumes:	32

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

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

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

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	8,300	8,850	
Minor Street*	320	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	8,300	13,300	
Minor Street*	320	1,350	No
<i>Combination Warrant</i>			
Major Street	8,300	10,640	
Minor Street*	320	2,120	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: 17014 - Abernethy Place
 Date: 4/11/2017
 Scenario: Year 2022 Background plus Site Conditions

Major Street:	Washington Street	Minor Street:	Amtrak Station Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	809	PM Peak Hour Volumes:	74

Warrant Used:

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

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

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

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	8,090	8,850	
Minor Street*	740	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	8,090	13,300	
Minor Street*	740	1,350	No
<i>Combination Warrant</i>			
Major Street	8,090	10,640	
Minor Street*	740	2,120	No

* Minor street right-turning traffic volumes reduced by 25%