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PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	March 28, 2019	Project #: 23822.0
To:	Pete Walter, City of Oregon City John Replinger, P.E., Replinger & Associates, LLC	
From:	Matt Bell, Ali Razmpa, and Chris Brehmer, P.E.	
Project:	Oregon City Public Safety Building, City Case File PA 19-01	
Subject:	Traffic Impact Study	

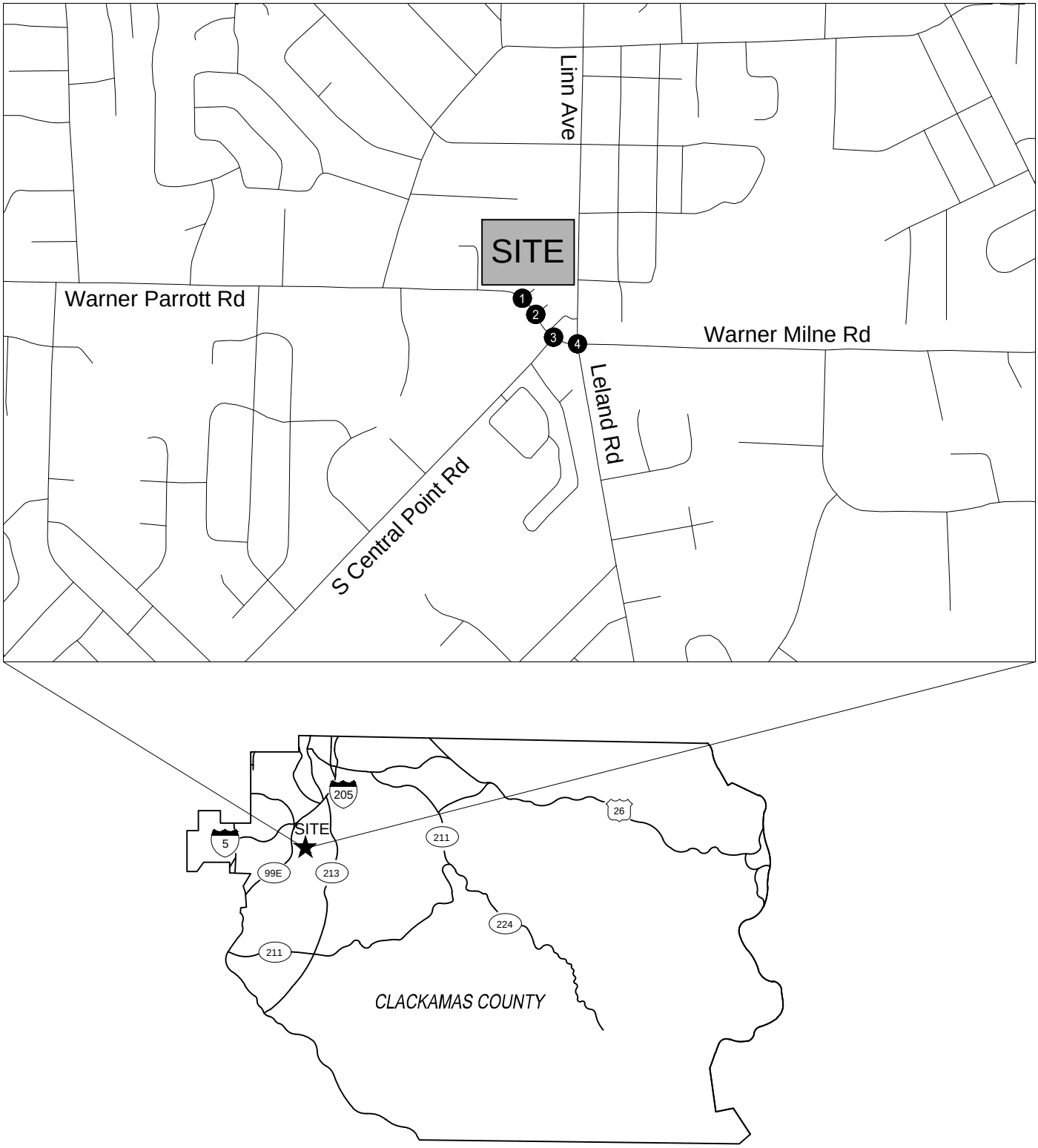
REGISTERED PROFESSIONAL ENGINEER 62836PE OREGON JULY 11, 2000 CHRISTOPHER LYNN BREHMER
Expires: 12-31-2019

The City of Oregon City is proposing to construct a new Public Safety Building along the west side of Linn Avenue in the site of the former Mt. Pleasant Elementary School. Figure 1 illustrates the site vicinity map. The new building will include a 26,857 square-foot police station and a 7,034 square-foot municipal court. Access to the new building will be provided by three driveways, including two driveways along Warner Parrott Road and one along Linn Avenue; the driveway along Linn Avenue will be gated. Figure 2 illustrates the conceptual site plan. Construction of the new building is expected to occur in 2019 with full build-out and occupancy in 2020.

The results of this study indicate that the Public Safety Building can be developed while maintaining acceptable traffic operations and safety at the study intersections. No off-site capacity mitigation needs were identified at the study intersections in conjunction with site development. Given the Mt Pleasant Elementary School buildings will be removed in conjunction with the proposed Oregon City Public Safety Building, the City should consider removing the school zones and removing or reconfiguring the enhanced School Area pedestrian crossings associated with the former school in conjunction with the proposed site redevelopment. Additional details of the study methodology, findings, and recommendations are provided below.

BACKGROUND

The proposed development site is subject to a trip cap associated with a prior zone change approval (City case file PZ17-01) that limits the development potential of the site to an established number of vested weekday AM and weekday PM peak hour trips. A portion of the vested trips were allocated to the previously approved office located in the southeast corner of the larger City-owned property that includes the site. Table 1 summarizes the trip cap information along with trip estimates for the existing and proposed site uses.



- Study Intersections

Site Vicinity Map
Oregon City, Oregon

Figure
1

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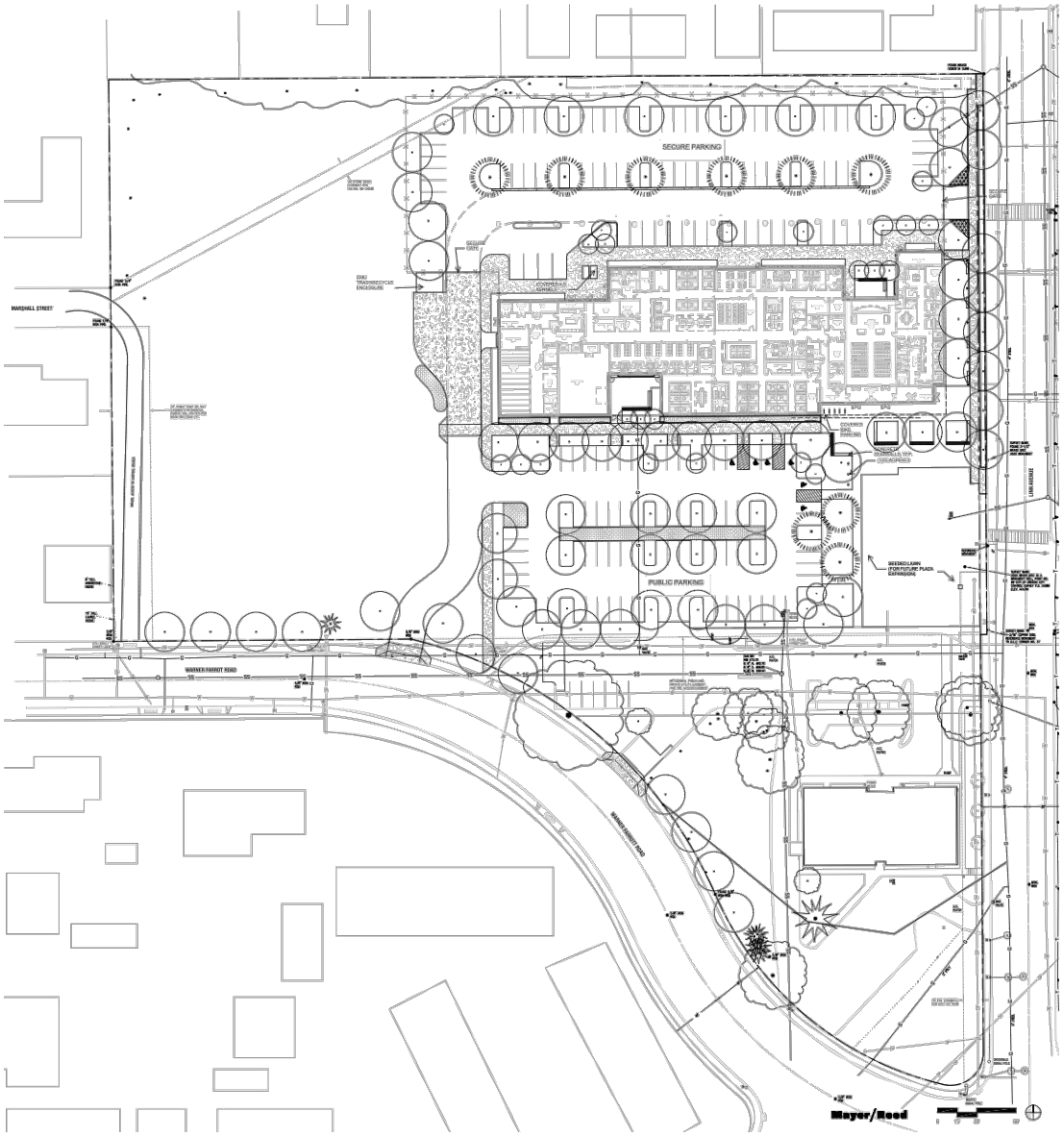

FFA Architecture + Interiors

DESCRIPTION DATE

ROBERT LIBKE PUBLIC SAFETY BUILDING

OREGON CITY POLICE DEPARTMENT

1234 LINN AVE
OREGON CITY, OR 97045

APPROVED:
DRAWN:
DATE: 02.07.2019
PROJECT NUMBER: 240318

SITE PLAN

L-101

PROGRESS PRINT

NOT FOR CONSTRUCTION

Proposed Site Plan
Oregon City, Oregon

Figure
2

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Table 1: Trip Cap Summary

	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Cap (Vested trips)	708	238	133	105	143	63	80
Previously Approved Office	472	40	34	6	8	2	6
Trips Remaining (Trip Cap-Approved Office)	236	198	99	99	135	61	74
Proposed Public Safety Building	628	102	54	48	121	31	90
Proposed Building-Trips Remaining	**392**	**-96**	**-45**	**-51**	**-14**	**-30**	**16**

Review of the overall site trip generation shown in Table 1 indicates that the proposed development will exceed the remaining vested daily trips but be well within the vested trips for the weekday AM and weekday PM peak hours. The projected 392-daily trip increase exceeds the City's 250 daily trip threshold for requiring a traffic impact analysis for the proposed development application.

SCOPE OF THE REPORT

This analysis determines the transportation-related impacts associated with the proposed Public Safety Building and was prepared in accordance with the City of Oregon City's Guidelines for Transportation Impact Analyses (TIA Guidelines – Reference 1). The study intersections and scope of this report were selected based on the TIA guidelines and direction provide by City staff. The operational analyses were performed at the following intersections:

1. Warner Parrot Road/Existing West Site Driveway (outbound only)
2. Warner Parrot Road/Existing East Site Driveway (inbound only)
3. S Central Point Road/Warner Parrott Road
4. Linn Avenue-Leland Road/Warner Parrott Road-Warner Milne Road

This report evaluates these transportation issues:

- Year 2019 existing land-use and transportation-system conditions within the site vicinity during the weekday AM and PM peak periods;
- Planned developments and transportation improvements in the study area;
- Trip generation and distribution estimates for the proposed development;
- Year 2020 background traffic conditions (without the proposed development) during the weekday AM and PM peak periods;
- Year 2020 total traffic conditions (with full build-out and occupancy of the proposed development) during the weekday AM and PM peak periods;
- On-site traffic operations and circulation.

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and current physical and operational characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report. Kittelson & Associates, Inc. (Kittelson) staff visited and inventoried the proposed development site in March 2019. At that time, Kittelson collected information regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

Site Conditions and Adjacent Land Uses

The proposed development site is currently occupied by the former Mt Pleasant Elementary School that was closed in 2013. Access to the site is provided by two driveways (one inbound and one outbound) along Warner Parrot Road. Both driveways also serve the Oregon City Community Development Department located in the southeast corner of the larger City-owned property that includes the site.

The proposed development site is located within the Oregon City limits and is zoned Institutional (I), which allows the Public Safety Building as a conditional use. Properties to the north and east are zoned Residential (R-2 and R6) while properties to the south are zone residential (R-3.5) and properties to the southeast are zoned mixed use commercial (MUC-1). The majority of adjacent properties have residential and commercial land uses consistent with the underlying zoning, with the exception of the First Presbyterian Church located along the east side of Linn Avenue.

Transportation Facilities

Table 2 summarizes the existing transportation facilities and roadways in the study area.

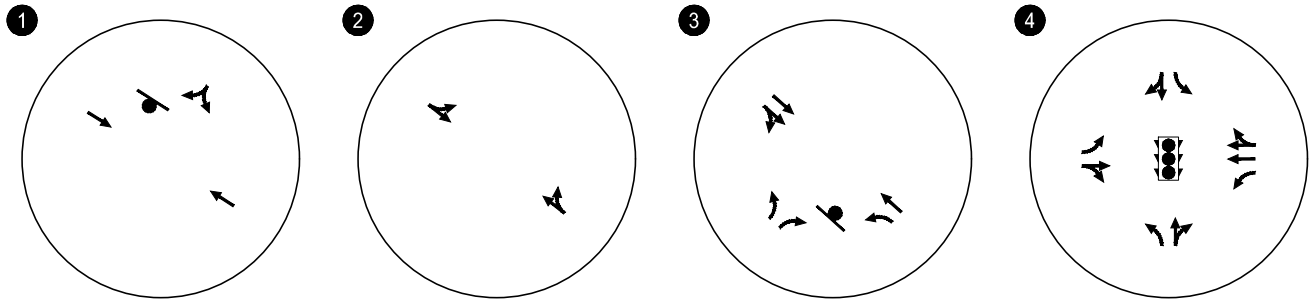
Table 2: Existing Transportation Facilities and Roadways in the Study Area

Roadway	Functional Classification[1]	Number of Lanes	Posted Speed (mph)	Sidewalks	Bicycle Lanes	On-Street Parking
Linn Avenue	Minor Arterial	2	35	Yes	Yes	Yes
Leland Road	Minor Arterial	2	35	No	Yes	No
Warner Parrott Road	Minor Arterial	2	30	Partial[2]	Yes	No
Warner Milne Road	Minor Arterial	2	30	Partial[3]	Yes	No
S Central Point Road	Collector	2	35	Yes	Yes	No

1. Per the Oregon City Transportation System Plan (TSP – Reference 2).
2. Continuous sidewalks are provided along the south side of Warner Parrott Road.
3. Continuous sidewalks are provided along the north side of Warner Milne Road.

Roadway Facilities

Linn Avenue-Leland Road borders the site to the east; Linn Avenue connects the site to downtown Oregon City to the north and Leland Road connects the site to residential neighborhoods along Meyers Road and to commercial properties along OR 213 to the south. Warner Parrot Road-Warner Milne Road borders the site to the south; Warner Parrot Road connects the site to residential neighborhoods to the west and Warner Milne Road connects the site to commercial properties along Molalla Avenue to the east. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.



- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations
& Traffic Control Devices
Oregon City, Oregon

Figure
3

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Pedestrian and Bicycle Facilities

Sidewalks are provided along both sides of Linn Avenue and Central Point Road. Sidewalks are also provided along at least one side of Warner Parrot Road and Warner Milne Road; however, there are multiple gaps in the sidewalks on Leland Road.

Enhanced School Area pedestrian crossings are provided along Linn Avenue toward the north end of the site, at the Linn Avenue/Williams Street intersection, and at the Linn Avenue-Leland Road/Warner Parrott-Warner Milne Road signalized intersection. An additional enhanced School Area pedestrian crossing is provided along Warner Parrot Road toward the west end of the site. Given the Mt Pleasant Elementary School buildings will be removed in conjunction with the proposed site development, the City should consider removing the school zones and removing or reconfiguring the enhanced School Area pedestrian crossings in conjunction with the proposed site redevelopment.

Bike lanes are provided along both sides of all streets within the site vicinity.

Transit Facilities

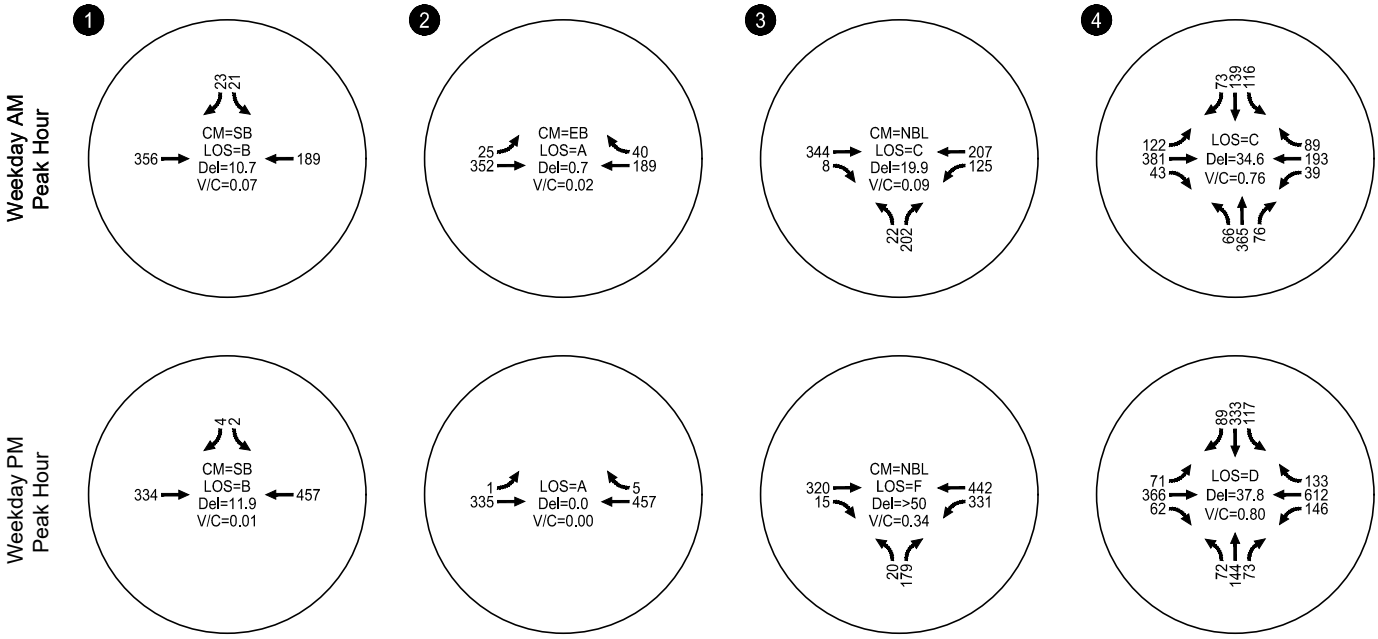
Local transit service is provided in the study area by TriMet. TriMet Bus Line 33 provides frequent service between Clackamas Town Center and Clackamas Community College via Linn Avenue and Warner Milne Road. Service is provided Monday through Friday from 5:00 AM to 2:00 AM and from 6:00 AM to 2:00 AM Saturdays and Sundays. TriMet's Southeast Service Enhancement Plan identifies the area surrounding the site as a Community/Jobs Connector Service Area and plans to provide future shuttle service to the area (TriMet – Reference 3).

Traffic Volumes and Peak Hour Operations

Turning movement counts were conducted at the study intersections in March 2019 while local schools were in session. The counts were conducted on a typical mid-week day during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak time periods. The system-wide weekday AM and PM peak hours were found to occur from 7:45 to 8:45 AM and 4:55 to 5:55 PM, respectively. Figure 4 summarizes the year 2019 existing turning-movement counts at the study intersections for the weekday AM and PM peak hours. *Appendix "A" contains the traffic count worksheets used in this study.*

Current Operations

All analyses described in this report were performed in accordance with the procedures stated in the Highway Capacity Manual (HCM – Reference 4). All analyses used the peak 15-minute flow rates that occur during the weekday AM and PM peak hours. Using the peak 15-minute flow rates ensures that the analyses are based on reasonable worst-case scenarios. For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each average peak hour.



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = VOLUME-TO-CAPACITY RATIO

Existing Traffic Conditions
Weekday AM & PM Peak Hours
Oregon City, Oregon

Figure
4

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Section 12.04.205 (B) of the Oregon City Municipal Code (OCMC) identifies the City's mobility standards for signalized and unsignalized intersections located outside the Regional Center, but designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan. Per the OCMC:

1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

Figure 4 summarizes the year 2019 existing traffic conditions at the study intersections during the first hour of the weekday AM and PM peak periods. As shown, all of the study intersections currently operate acceptably during the first hour per their applicable mobility standards and so the second hour was not analyzed. *Appendix "B" includes the year 2019 existing traffic conditions worksheets.*

Traffic Safety

The crash history of the study intersections was reviewed in an effort to identify potential safety issues in the study area. The Oregon Department of Transportation (ODOT) provided the five most recent years of crash data available for the study intersections, which includes the period from January 1, 2012, through December 31, 2016. Table 3 summarizes the crash data over the five-year period. No crashes were reported at the two site driveways located on Warner Parrot Road.

Table 3: Intersection Crash History (January 1, 2012 through December 31, 2016)

Intersection	Crash Type					Crash Severity			Total	Crash Rates (Crashes /MEV)	ODOT 90th Percentile Rate
	Rear-End	Turn	Angle	Ped/ Bike	Other	PDO	Injury	Fatal			
S Central Point Road/ Warner Parrott Road	3	4	0	0	2	5	4	0	9	0.38	0.293
Linn Avenue-Leland Road/Warner Parrott Road-Warner Milne Road	8	3	2	1	1	7	8	0	15	0.38	0.860

Source: ODOT
PDO = Property damage only
MEV = Million Entering Vehicles

The crash rates shown in Table 3 were compared to the 90th percentile rates for similar facilities shown in Table 4-1 of the ODOT Analysis Procedures Manual (APM). Per the APM, any intersection that has a crash rate equal to or greater than the corresponding 90th percentile rate is considered a high-risk intersection and is recommended for further review. Based on these criteria, the S Central Point Road/Warner Parrot Road intersection was reviewed further as described below. *Appendix "C" contains the crash data provided by ODOT.*

S Central Point Road/Warner Parrott Road

As shown in Table 3, a total of nine crashes were reported at the S Central Point Road/Warner Parrott Road intersection over the five-year period. Of the nine crashes, four were reported as turn movement crashes and three as rear-end crashes. Of the turn movement crashes, two involved northbound left turn movements and two involved westbound left-turning vehicles; one of the westbound left-turning vehicles collided with a bicyclist. All four crashes occurred when a left-turning motorist failed to yield the right-of way to an opposing through motorist/bicyclist. Of the rear-end crashes, one occurred at the northbound approach, one at the eastbound approach, and one at the westbound approach. All three crashes occurred when a through motorist failed to avoid a slowed or stopped motorist.

The City TSP identifies the future need to restrict left-turn movements from S Central Point Road to Warner Parrott Road in conjunction with the installation of a roundabout at the Linn Avenue-Leland Road/Warner Parrott Road-Warner Milne Road intersection. No other trends or patterns were identified in the crash data that warrant further review.

TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study intersections will operate in the year the proposed Public Safety Building is expected to be fully built, 2020. The impact of traffic generated by the proposed Public Safety Building was examined as follows:

- Planned developments and transportation improvements in the site vicinity were identified.
- Background traffic conditions (with and without the proposed Public Safety Building) were analyzed at the study intersections during the weekday AM and PM peak hours.
    - Background conditions were developed by applying a 2.0-percent annual growth rate to the existing traffic volumes to account for regional growth in the site vicinity.
- Site-generated trips were estimated for full build-out of the proposed Public Safety Building.
- Site trip-distribution patterns were identified and used to assign the site-generated trips to the study intersections and site driveways.
- Total traffic conditions (with full build-out and occupancy of the proposed Public Safety Building) were analyzed at the study intersections and site driveways during the weekday AM and PM peak hours.
- On-site circulation issues and site-access operations were evaluated.

YEAR 2020 BACKGROUND TRAFFIC CONDITIONS

The year 2020 background traffic conditions analysis identifies how the study area's transportation system will operate in the year the proposed Public Safety Building is expected to be fully built, 2020. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region but does not include traffic from the proposed Public Safety Building.

Planned Developments and Transportation Improvements

Kittelson identified and reviewed the planned developments and transportation improvements within the study area. Based on discussions with City staff, there are no approved developments within the study area that could impact operations at the study intersections. However, the TSP identifies one transportation project in the study area that could impact options at the study intersections. As indicated above, the project involves restricting left-turn movements from S Central Point Road to Warner Parrott Road in conjunction with the installation of a roundabout at the Linn Avenue-Leland Road/Warner Parrott Road-Warner Milne Road intersection. The project is identified on the TSP *Not Likely to be Funded* list as a long-term priority and therefore, was not included in the year 2020 background traffic conditions analysis.

Traffic Volumes

A 2.0 percent annual growth rate was identified based on a review of historic traffic volumes provided in the TSP and direction provided by City staff[1]. Year 2020 background traffic volumes were developed by applying a 2.0 percent growth rate to the existing traffic volumes shown in Figure 4. Figure 5 illustrates the resulting forecast year 2020 background traffic volumes at the study intersection during the weekday AM and PM peak hours.

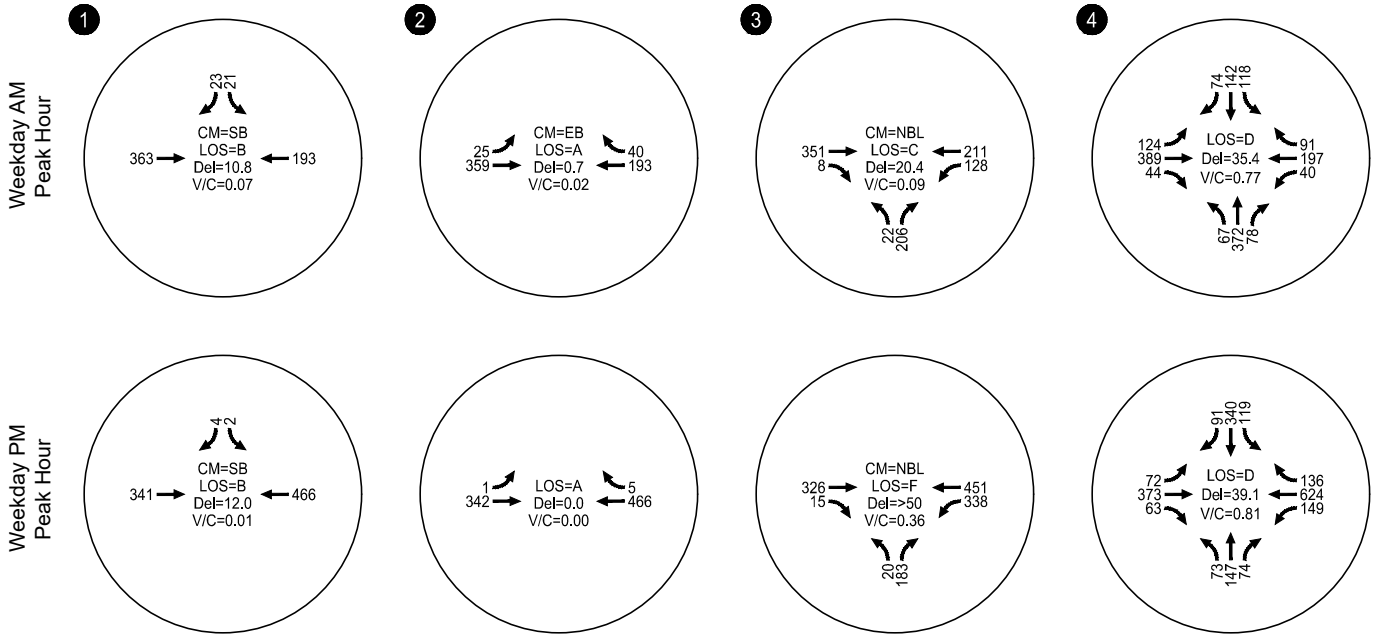
Level-of-Service Analysis

Figure 5 summarizes the year 2020 background traffic conditions at the study intersections during the weekday AM and PM peak hours. As shown in Figure 5, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "D" includes the year 2020 background traffic conditions worksheets.*

PROPOSED DEVELOPMENT PLAN

The proposed development plan includes removal of the existing elementary school and construction of the new 33,891 square-foot Public Safety Building. The new building will include a 26,857 square-foot police station and a 7,034 square-foot municipal court. The proposed development plan also includes relocating the western most driveway along Warner Parrott Road to provide direct access to the Public Safety Building's parking areas, reconfiguring the easternmost driveway to allow full movement, and installing a new driveway north of the new building. The new north driveway and an internal drive aisle on the west side of the new building will provide secure access for employee and police vehicles through gated entry to the employee parking area north of the new building. Figure 6 illustrates the assumed lane configurations and traffic control devices at the study intersections and site driveways. Construction of the new building is expected to occur in 2019 with full build-out and occupancy in 2020.

[1] The TSP shows approximately a 2.0 percent increase annually at several intersections within the south part of the City.



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V/C = VOLUME-TO-CAPACITY RATIO

Year 2020 Background Traffic Conditions
Weekday AM & PM Peak Hours
Oregon City, Oregon

Figure
5

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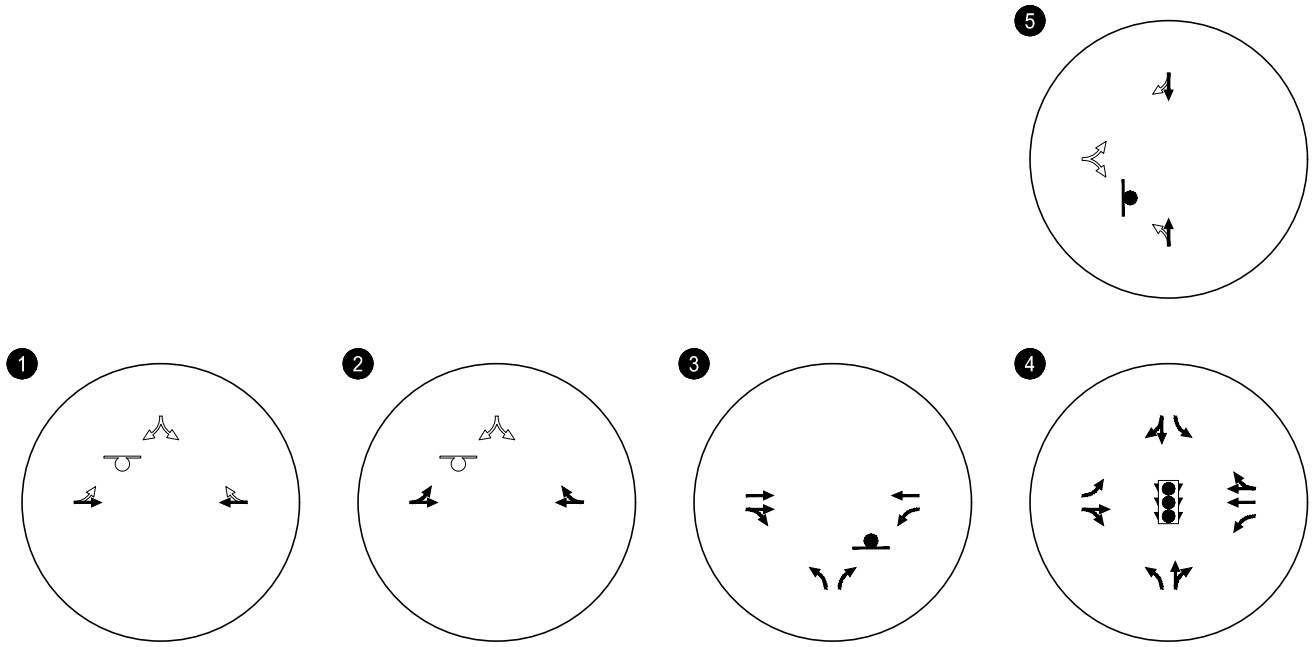

- STOP SIGN
- TRAFFIC SIGNAL
- PLANNED LANE CHANGE (ADDITION)

Year 2020 Assumed Lane Configurations
& Traffic Control Devices
Oregon City, Oregon

Figure
6

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Trip Generation

A trip generation estimate was prepared for the proposed Public Safety Building based on information documented in a trip generation study prepared for the Oregon City Police Department in June 2016. The study provides daily, weekday AM, and weekday PM trip rates for the police station and municipal courts based on data collected at the existing Oregon City police station and municipal court facility as well as other similar facilities. Table 4 summarizes the daily, weekday AM, and weekday PM peak hour trips associated with the proposed development.

Table 4: Trip Generation

Land Use	Size	Daily Trips (Weekday)	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Total	In	Out	Total	In	Out
Public Safety Building	33,891 sq. ft.	628	102	54	48	121	31	90

Site Trip Distribution/Trip Assignment

A trip distribution pattern was developed for the proposed Public Safety Building based on existing traffic patterns and the location of major trip origins and destinations in the Oregon City area. Figure 7 illustrates the estimated trip distribution pattern. The site-generated trips shown in Table 4 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 7. Figure 7 also illustrates the assignment of site-generated trips at the study intersections during the weekday AM and PM peak hours.

YEAR 2020 TOTAL TRAFFIC CONDITIONS

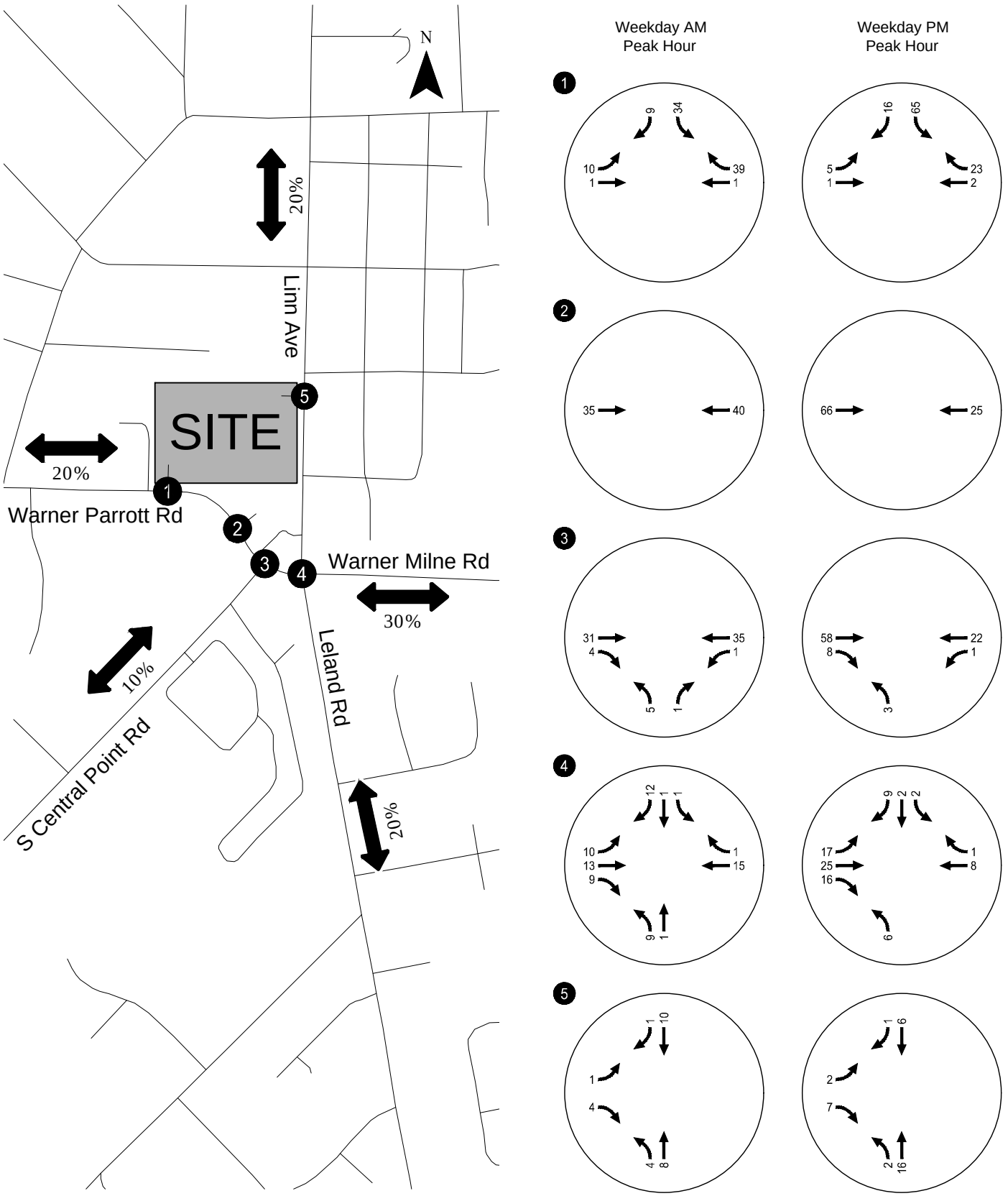
The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by the proposed development. The year 2020 background traffic volumes shown in Figure 5 were added to the site-generated trips shown in Figure 7 to arrive at the total traffic volumes shown in Figure 8.

Intersection Level of Service

Figure 8 summarizes the year 2020 total traffic conditions analysis results at the study intersections during the weekday AM and PM peak hours. As shown, all of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards. *Appendix "E" includes the year 2020 total traffic conditions worksheets.*

SITE-ACCESS OPERATIONS

Figure 2 illustrates the conceptual site plan. As shown, access to the site is planned to be provided by two full movement driveways along Warner Parrott Road and one full movement driveway along Linn Avenue; the driveway along Linn Avenue will be gated.



Estimated Trip Distribution Pattern and Site-Generated Trips
Weekday AM & PM Peak Hours
Oregon City, Oregon

Figure
7

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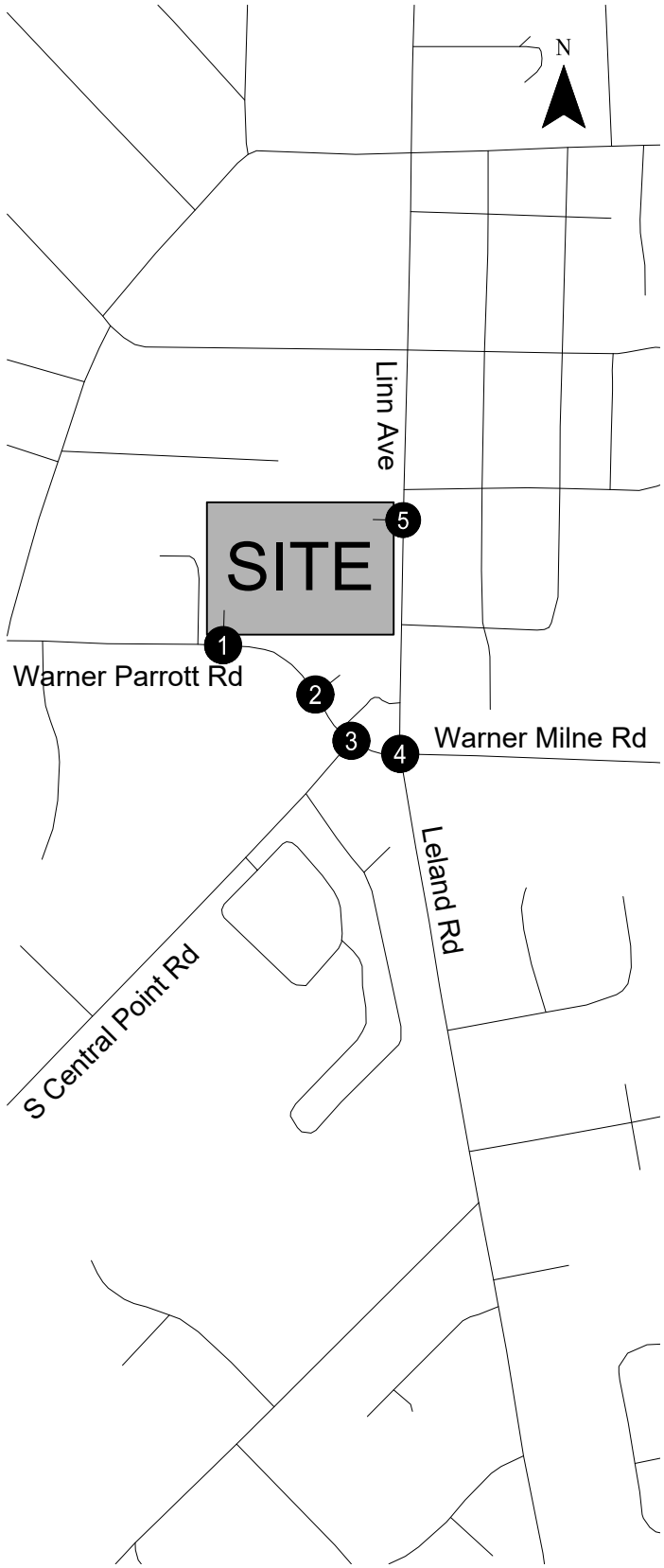

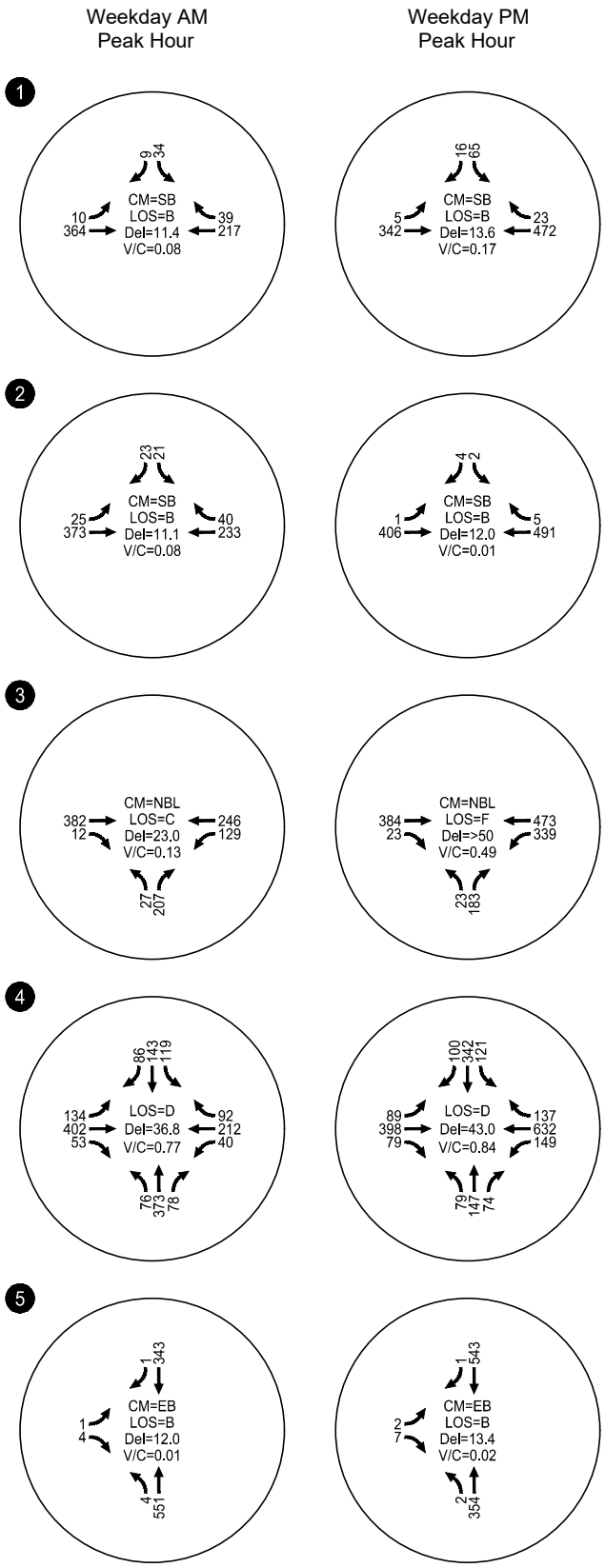

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V/C = VOLUME-TO-CAPACITY RATIO

Year 2020 Total Traffic Conditions
Weekday AM & PM Peak Hours
Oregon City, Oregon

Figure
8

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All three driveways are expected to operate acceptably in the future under stop control and queues at the driveways are not expected to exceed one vehicle entering the site. While the Synchro analysis shows that queues exiting the site are also not expected to exceed one vehicle, the site provides storage for up to four vehicles per lane approaching Warner Parrot Road.

We recommend that adequate intersection sight distance be provided at all site driveways in accordance with City of Oregon City standards.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study indicate that the Oregon City Public Safety Building can be developed while maintaining acceptable traffic operations and safety at the study intersections. The findings of this analysis and our recommendations are discussed below.

FINDINGS

- All of the study intersections satisfy Oregon City operating standards during the weekday AM and PM peak hours today and in the build-out year of 2020 without and with the proposed Public Safety Building.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.
- The proposed development is estimated to generate 628 daily trips including 102 trips during the weekday AM peak hour and 121 trips during the weekday PM peak hour.
- The weekday AM and PM peak hour site trip generation associated with the proposed uses plus the existing Oregon City Building Permit facility result in fewer cumulative site trips than are vested for the property, thus the proposed project complies with the property trip cap established by City Case File PZ17-01.
- The site driveways will operate acceptably with stop control and 95th percentile exit queues at the site driveways can be accommodated on-site.

RECOMMENDATIONS

- Given the Mt Pleasant Elementary School buildings will be removed in conjunction with the proposed Oregon City Public Safety Building, the City should consider removing the school zones and removing or reconfiguring the enhanced School Area pedestrian crossings associated with the former school in conjunction with the proposed site redevelopment.
- Adequate intersection sight distance should be provided at the site driveways in accordance with City of Oregon City standards.

REFERENCES

1. Oregon City. *Guidelines for Transportation Impact Analyses*. 2005.
2. Oregon City. *Oregon City Transportation System Plan*. 2013.
3. TriMet: https://trimet.org/
4. Transportation Research Board. *Highway Capacity Manual*. 2000 and 2010.

Appendix A. Traffic Counts

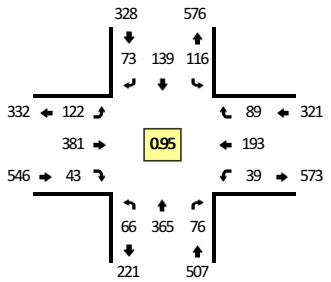
Type of peak hour being reported: User-Defined

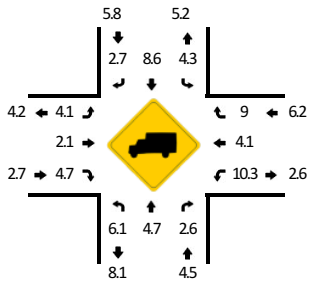
Method for determining peak hour: Total Entering Volume

LOCATION: Linn Ave -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

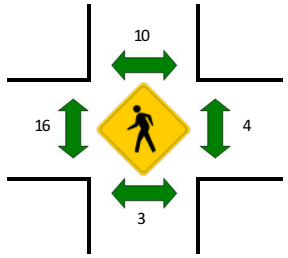
QC JOB #: 14906901
DATE: Tue, Mar 5 2019

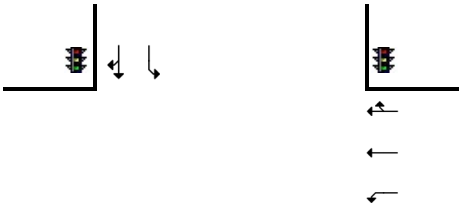
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:20 AM -- 8:35 AM

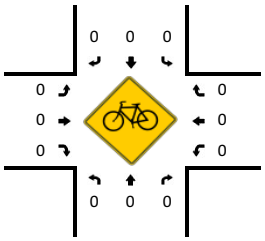


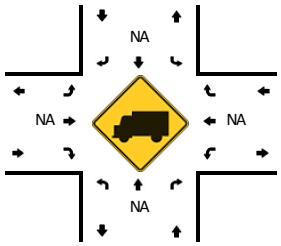


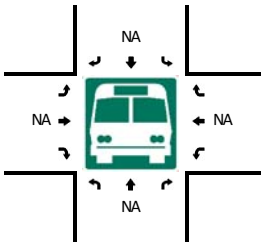
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Linn Ave (Northbound)				Linn Ave (Southbound)				Warner Parrott Rd (Eastbound)				Warner Parrott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	30	9	0	12	7	1	0	7	32	3	0	1	8	1	0	114	
7:05 AM	3	19	2	0	9	2	2	0	8	31	2	0	1	9	5	0	93	
7:10 AM	7	19	10	0	3	6	1	0	7	46	3	0	2	9	5	0	118	
7:15 AM	3	29	8	0	7	9	3	0	3	36	3	0	2	9	10	0	122	
7:20 AM	3	32	5	0	6	5	4	0	11	29	2	0	2	13	3	0	115	
7:25 AM	7	26	12	0	5	4	1	0	7	34	3	0	2	10	3	0	114	
7:30 AM	4	34	13	0	8	8	3	0	11	35	4	0	0	13	7	0	140	
7:35 AM	8	39	8	0	2	5	2	0	10	36	5	0	1	14	3	0	133	
7:40 AM	8	40	6	0	10	10	2	0	15	24	5	0	2	11	5	0	138	
7:45 AM	8	32	12	0	6	9	2	0	8	43	6	0	1	15	6	0	148	
7:50 AM	3	38	12	0	8	9	5	0	6	38	3	0	1	12	2	0	137	
7:55 AM	9	28	8	0	19	12	9	0	8	38	5	0	3	16	4	0	159	1531
8:00 AM	4	34	14	0	12	9	3	0	12	34	4	0	6	14	5	0	151	1568
8:05 AM	5	34	3	0	7	6	5	0	10	31	3	0	3	15	13	0	135	1610
8:10 AM	7	25	4	0	5	12	5	0	7	24	1	0	2	18	7	0	117	1609
8:15 AM	6	23	6	0	8	4	5	0	11	30	3	0	6	17	12	0	131	1618
8:20 AM	3	36	4	0	10	17	2	0	18	31	7	0	5	19	7	0	159	1662
8:25 AM	7	35	2	0	10	15	4	0	14	27	0	0	2	10	10	0	136	1684
8:30 AM	4	29	7	0	14	14	9	0	12	27	4	0	3	21	10	0	154	1698
8:35 AM	4	20	1	0	11	18	10	0	12	26	3	0	3	17	7	0	132	1697
8:40 AM	6	31	3	0	6	14	14	0	4	32	4	0	4	19	6	0	143	1702
8:45 AM	8	17	4	0	13	8	6	0	11	29	2	0	3	31	7	0	139	1693
8:50 AM	5	28	3	0	8	3	5	0	7	35	7	0	1	23	14	0	139	1695
8:55 AM	2	19	3	0	8	8	5	0	4	33	5	0	3	18	9	0	117	1653

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	400	52	0	136	184	60	0	176	340	44	0	40	200	108	0	1796
Heavy Trucks	4	20	4		8	28	0		12	4	4		8	4	12		108
Pedestrians		0				24				12				0			36
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/28/2019 2:30 PM

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

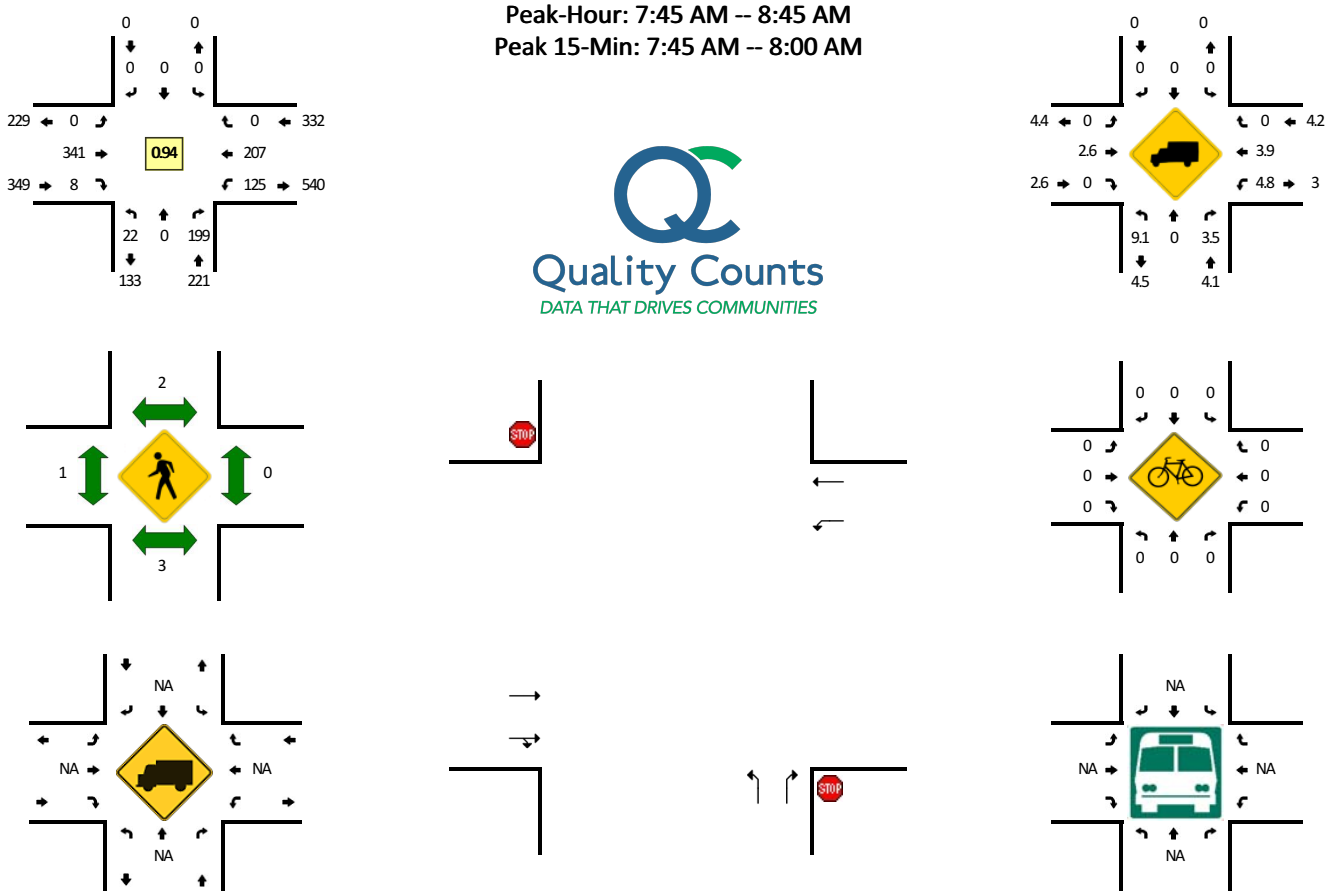
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: S Central Point Rd -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14906903
DATE: Tue, Mar 5 2019

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



Quality Counts
DATA THAT DRIVES COMMUNITIES

5-Min Count Period Beginning At	S Central Point Rd (Northbound)				S Central Point Rd (Southbound)				Warner Parrott Rd (Eastbound)				Warner Parrott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	30	0	0	0	0	0	0	14	1	0	8	7	0	0	65	
7:05 AM	2	0	21	0	0	0	0	0	0	23	1	0	7	7	0	0	61	
7:10 AM	6	0	24	0	0	0	0	0	0	31	0	0	9	8	0	0	78	
7:15 AM	1	0	12	0	0	0	0	0	0	31	2	0	8	7	0	0	61	
7:20 AM	6	0	26	0	0	0	0	0	0	23	2	0	5	15	0	0	77	
7:25 AM	5	0	8	0	0	0	0	0	0	24	1	0	6	12	0	0	56	
7:30 AM	1	0	16	0	0	0	0	0	0	34	2	0	5	13	0	0	71	
7:35 AM	4	0	27	0	0	0	0	0	0	27	0	0	8	16	0	0	82	
7:40 AM	6	0	25	0	0	0	0	0	0	23	2	0	7	16	0	0	79	
7:45 AM	2	0	22	0	0	0	0	0	0	30	0	0	8	16	0	0	78	
7:50 AM	0	0	16	0	0	0	0	0	0	32	0	0	5	15	0	0	68	
7:55 AM	4	0	25	0	0	0	0	0	0	32	2	0	15	17	0	0	95	871
8:00 AM	3	0	9	0	0	0	0	0	0	33	0	0	11	10	0	0	66	872
8:05 AM	4	0	27	0	0	0	0	0	0	21	0	0	9	15	0	0	76	887
8:10 AM	1	0	11	0	0	0	0	0	0	26	2	0	9	24	0	0	73	882
8:15 AM	1	0	7	0	0	0	0	0	0	31	3	0	7	21	0	0	70	891
8:20 AM	0	0	21	0	0	0	0	0	0	32	0	0	7	12	0	0	72	886
8:25 AM	3	0	18	0	0	0	0	0	0	23	1	0	10	17	0	0	72	902
8:30 AM	1	0	18	0	0	0	0	0	0	31	0	0	19	16	0	0	85	916
8:35 AM	1	0	8	0	0	0	0	0	0	27	0	0	12	19	0	0	67	901
8:40 AM	2	0	17	0	0	0	0	0	0	23	0	0	13	25	0	0	80	902
8:45 AM	0	0	18	0	0	0	0	0	0	23	1	0	10	33	0	0	85	909
8:50 AM	5	0	18	0	0	0	0	0	0	28	1	0	9	26	0	0	87	928
8:55 AM	3	0	18	0	0	0	0	0	0	26	1	0	5	19	0	0	72	905

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	252	0	0	0	0	0	0	376	8	0	112	192	0	0	964
Heavy Trucks	0	0	12		0	0	0		0	8	0		0	4	0		24
Pedestrians		8				0				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/28/2019 2:30 PM

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

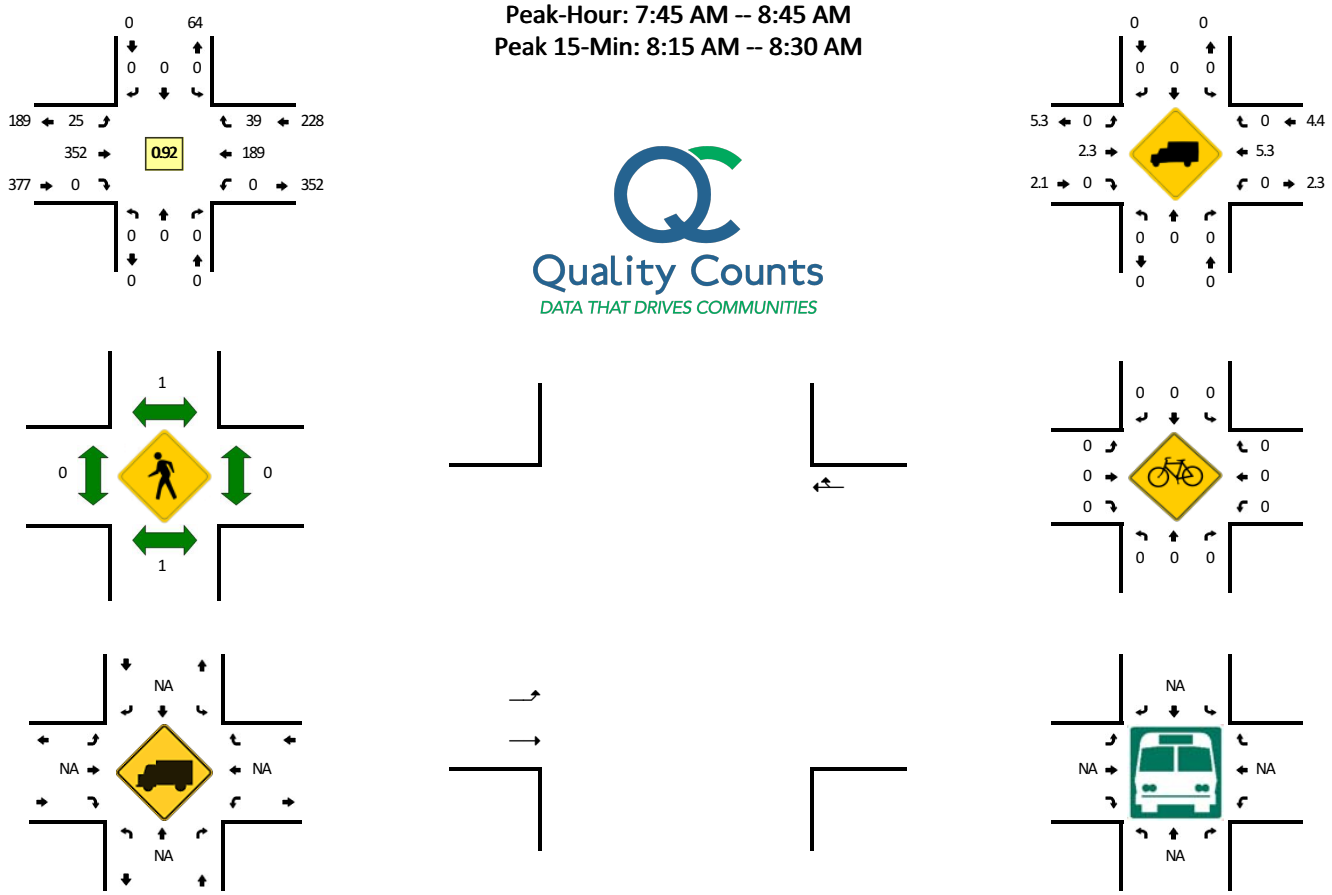
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Site East Dwy -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14906909
DATE: Tue, Mar 5 2019

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:15 AM -- 8:30 AM



5-Min Count Period Beginning At	Site East Dwy (Northbound)				Site East Dwy (Southbound)				Warner Parrott Rd (Eastbound)				Warner Parrott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	18	0	0	0	12	0	0	30	
7:05 AM	0	0	0	0	0	0	0	0	1	22	0	0	0	9	0	0	32	
7:10 AM	0	0	0	0	0	0	0	0	0	29	0	0	0	14	0	0	43	
7:15 AM	0	0	0	0	0	0	0	0	1	35	0	0	0	8	0	0	44	
7:20 AM	0	0	0	0	0	0	0	0	0	23	0	0	0	20	1	0	44	
7:25 AM	0	0	0	0	0	0	0	0	1	33	0	0	0	16	1	0	51	
7:30 AM	0	0	0	0	0	0	0	0	1	30	0	0	0	14	0	0	45	
7:35 AM	0	0	0	0	0	0	0	0	0	28	0	0	0	20	0	0	48	
7:40 AM	0	0	0	0	0	0	0	0	0	25	0	0	0	21	0	0	46	
7:45 AM	0	0	0	0	0	0	0	0	0	28	0	0	0	18	0	0	46	
7:50 AM	0	0	0	0	0	0	0	0	0	37	0	0	0	14	1	0	52	
7:55 AM	0	0	0	0	0	0	0	0	0	31	0	0	0	21	1	0	53	534
8:00 AM	0	0	0	0	0	0	0	0	1	38	0	0	0	11	2	0	52	556
8:05 AM	0	0	0	0	0	0	0	0	2	18	0	0	0	18	1	0	39	563
8:10 AM	0	0	0	0	0	0	0	0	2	24	0	0	0	21	4	0	51	571
8:15 AM	0	0	0	0	0	0	0	0	3	34	0	0	0	14	6	0	57	584
8:20 AM	0	0	0	0	0	0	0	0	5	34	0	0	0	7	7	0	53	593
8:25 AM	0	0	0	0	0	0	0	0	5	31	0	0	0	12	7	0	55	597
8:30 AM	0	0	0	0	0	0	0	0	1	30	0	0	0	12	4	0	47	599
8:35 AM	0	0	0	0	0	0	0	0	4	23	0	0	0	16	3	0	46	597
8:40 AM	0	0	0	0	0	0	0	0	2	24	0	0	0	25	3	0	54	605
8:45 AM	0	0	0	0	0	0	0	0	4	24	0	0	0	26	7	0	61	620
8:50 AM	0	0	0	0	0	0	0	0	3	29	0	0	0	23	7	0	62	630
8:55 AM	0	0	0	0	0	0	0	0	5	28	0	0	0	19	3	0	55	632

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	52	396	0	0	0	132	80	0	660
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	16	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Just need in/out turn movements here (it may be one way)?

Report generated on 3/28/2019 2:30 PM

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

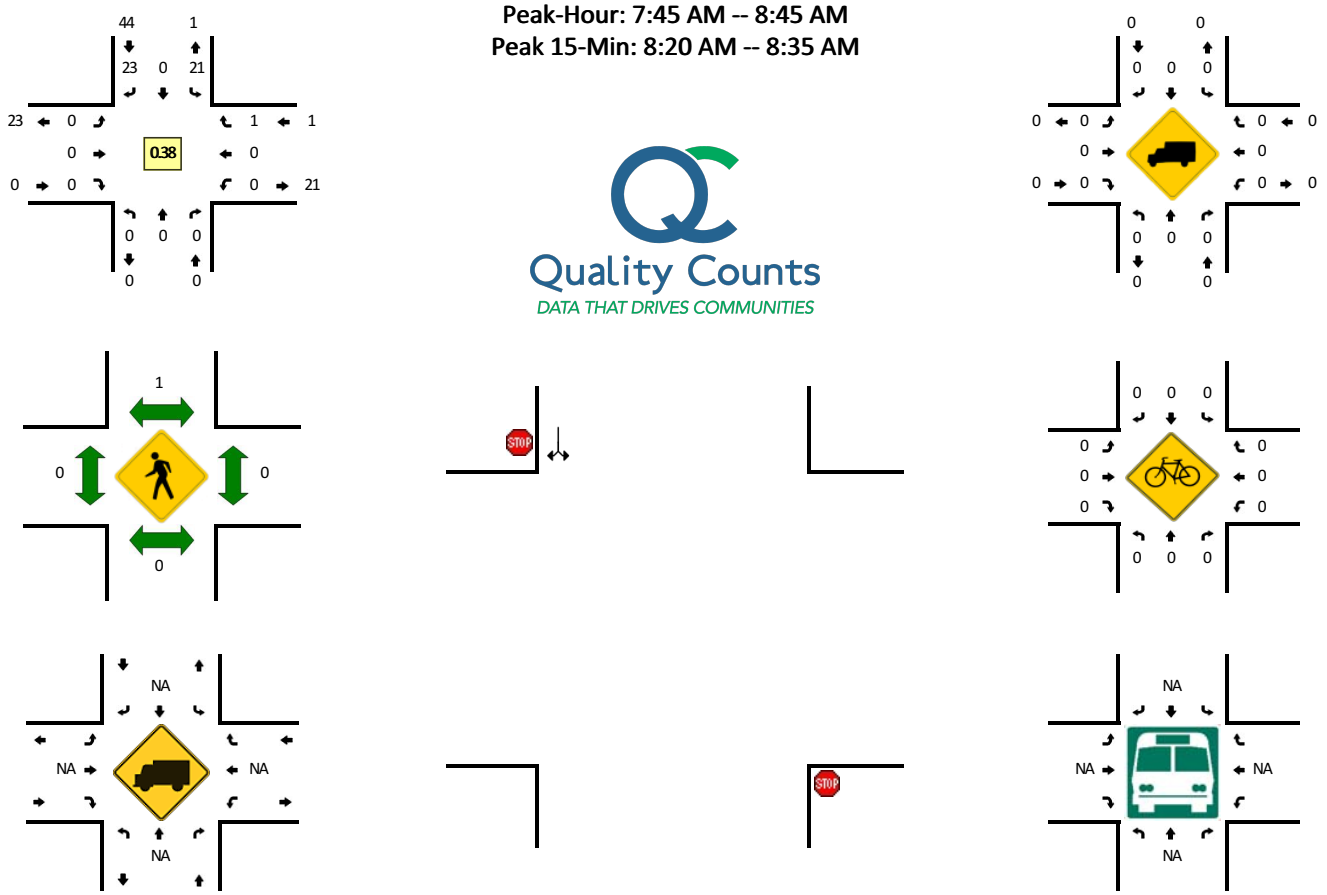
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Site West Dwy -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14906911
DATE: Tue, Mar 5 2019

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:20 AM -- 8:35 AM


44
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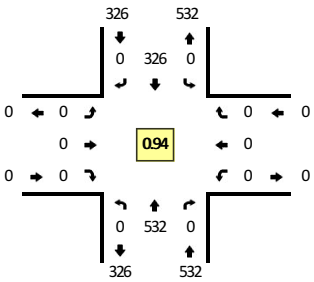
Type of peak hour being reported: User-Defined

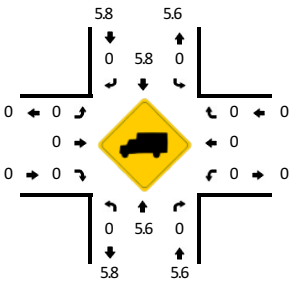
Method for determining peak hour: Total Entering Volume

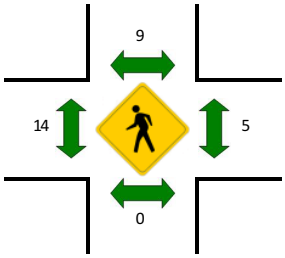
LOCATION: Linn Ave -- Midblock Pedestrian Crossing
CITY/STATE: Oregon City, OR

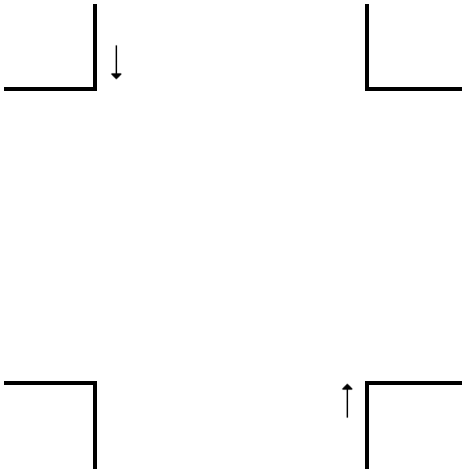
QC JOB #: 14906917
DATE: Tue, Mar 5 2019

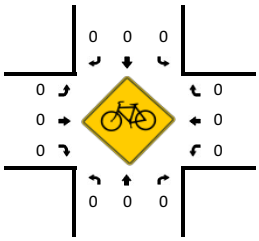
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:20 AM -- 8:35 AM

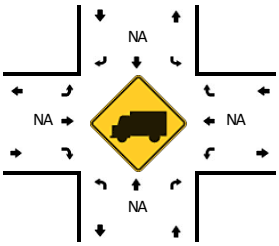


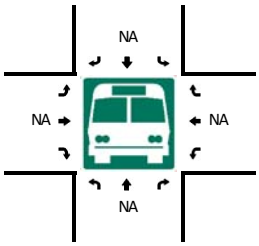












5-Min Count Period Beginning At	Linn Ave (Northbound)				Linn Ave (Southbound)				Midblock Pedestrian Crossing (Eastbound)				Midblock Pedestrian Crossing (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	38	0	0	0	16	0	0	0	0	0	0	0	0	0	0	54	
7:05 AM	0	26	0	0	0	10	0	0	0	0	0	0	0	0	0	0	36	
7:10 AM	0	37	0	0	0	10	0	0	0	0	0	0	0	0	0	0	47	
7:15 AM	0	33	0	0	0	20	0	0	0	0	0	0	0	0	0	0	53	
7:20 AM	0	50	0	0	0	15	0	0	0	0	0	0	0	0	0	0	65	
7:25 AM	0	39	0	0	0	18	0	0	0	0	0	0	0	0	0	0	57	
7:30 AM	0	46	0	0	0	14	0	0	0	0	0	0	0	0	0	0	60	
7:35 AM	0	53	0	0	0	13	0	0	0	0	0	0	0	0	0	0	66	
7:40 AM	0	51	0	0	0	20	0	0	0	0	0	0	0	0	0	0	71	
7:45 AM	0	52	0	0	0	19	0	0	0	0	0	0	0	0	0	0	71	
7:50 AM	0	48	0	0	0	25	0	0	0	0	0	0	0	0	0	0	73	
7:55 AM	0	36	0	0	0	39	0	0	0	0	0	0	0	0	0	0	75	728
8:00 AM	0	50	0	0	0	28	0	0	0	0	0	0	0	0	0	0	78	752
8:05 AM	0	49	0	0	0	23	0	0	0	0	0	0	0	0	0	0	72	788
8:10 AM	0	37	0	0	0	18	0	0	0	0	0	0	0	0	0	0	55	796
8:15 AM	0	41	0	0	0	15	0	0	0	0	0	0	0	0	0	0	56	799
8:20 AM	0	50	0	0	0	31	0	0	0	0	0	0	0	0	0	0	81	815
8:25 AM	0	44	0	0	0	27	0	0	0	0	0	0	0	0	0	0	71	829
8:30 AM	0	42	0	0	0	35	0	0	0	0	0	0	0	0	0	0	77	846
8:35 AM	0	40	0	0	0	30	0	0	0	0	0	0	0	0	0	0	70	850
8:40 AM	0	43	0	0	0	36	0	0	0	0	0	0	0	0	0	0	79	858
8:45 AM	0	30	0	0	0	25	0	0	0	0	0	0	0	0	0	0	55	842
8:50 AM	0	49	0	0	0	18	0	0	0	0	0	0	0	0	0	0	67	836
8:55 AM	0	26	0	0	0	27	0	0	0	0	0	0	0	0	0	0	53	814

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	544	0	0	0	372	0	0	0	0	0	0	0	0	0	0	916
Heavy Trucks	0	40	0		0	32	0		0	0	0		0	0	0		72
Pedestrians		0				8				4				8			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/28/2019 2:30 PM

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

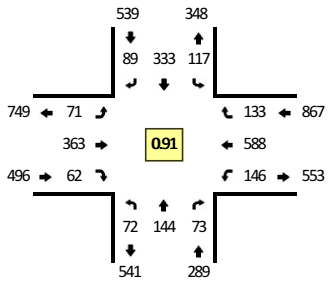
Type of peak hour being reported: User-Defined

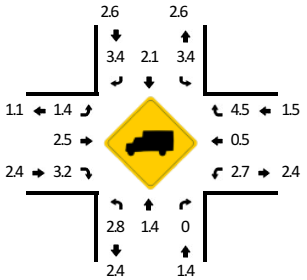
Method for determining peak hour: Total Entering Volume

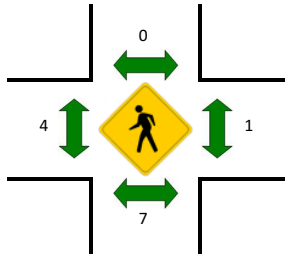
LOCATION: Linn Ave -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

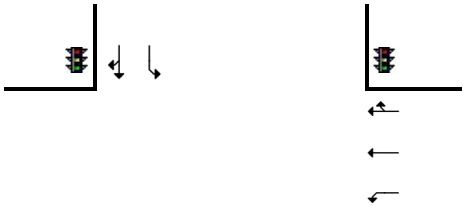
QC JOB #: 14906902
DATE: Tue, Mar 5 2019

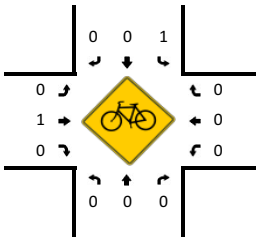
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

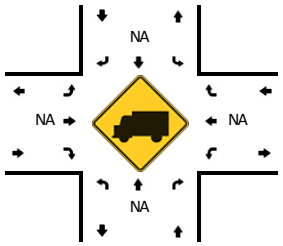


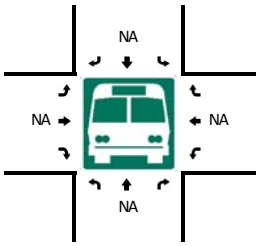












5-Min Count Period Beginning At	Linn Ave (Northbound)				Linn Ave (Southbound)				Warner Parrott Rd (Eastbound)				Warner Parrott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	2	6	0	3	24	11	0	5	31	6	0	15	53	11	0	170	
4:05 PM	5	16	9	0	17	26	13	0	8	28	7	0	8	32	17	0	186	
4:10 PM	6	23	6	0	12	21	6	0	7	32	6	0	9	39	11	0	178	
4:15 PM	5	8	4	0	24	27	17	0	7	25	2	0	15	33	9	0	176	
4:20 PM	9	17	7	0	13	20	7	0	5	30	2	0	12	37	12	0	171	
4:25 PM	6	8	4	0	11	24	10	0	8	32	2	0	12	25	11	0	153	
4:30 PM	5	13	7	0	10	17	7	0	2	33	4	0	10	48	20	0	176	
4:35 PM	6	15	3	0	7	22	8	0	6	32	5	0	11	62	17	0	194	
4:40 PM	4	9	9	0	10	28	5	0	5	25	4	0	16	43	12	0	170	
4:45 PM	5	10	4	0	14	22	10	0	6	30	1	0	12	46	13	0	173	
4:50 PM	4	18	6	0	16	19	12	0	3	22	3	0	10	43	9	0	165	
4:55 PM	4	16	8	0	12	34	5	0	7	32	5	0	9	34	10	0	176	2088
5:00 PM	4	10	3	0	11	23	9	0	7	32	3	0	13	48	12	0	175	2093
5:05 PM	6	9	2	0	11	30	9	0	3	42	2	0	11	61	14	0	200	2107
5:10 PM	6	13	5	0	7	34	17	0	7	24	3	0	12	59	6	0	193	2122
5:15 PM	11	12	4	0	8	25	11	0	5	36	8	0	17	57	13	0	207	2153
5:20 PM	3	8	10	0	11	22	4	0	0	26	5	0	11	49	12	0	161	2143
5:25 PM	2	10	7	0	16	37	3	0	5	25	7	0	9	51	8	0	180	2170
5:30 PM	7	13	5	0	11	13	6	0	4	33	6	0	10	52	19	0	179	2173
5:35 PM	7	14	10	0	6	29	10	0	9	24	5	0	13	43	8	0	178	2157
5:40 PM	9	13	2	0	5	23	8	0	8	26	4	0	21	60	9	0	188	2175
5:45 PM	3	13	10	0	9	27	2	0	10	32	12	0	12	38	14	0	182	2184
5:50 PM	10	13	7	0	10	36	5	0	6	31	2	0	8	36	8	0	172	2191
5:55 PM	4	11	6	0	5	26	11	0	2	30	4	0	8	44	16	0	167	2182

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	136	44	0	104	356	148	0	60	408	52	0	160	708	132	0	2400
Heavy Trucks	0	4	0		0	4	4		0	16	0		0	4	4		36
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/28/2019 2:32 PM

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

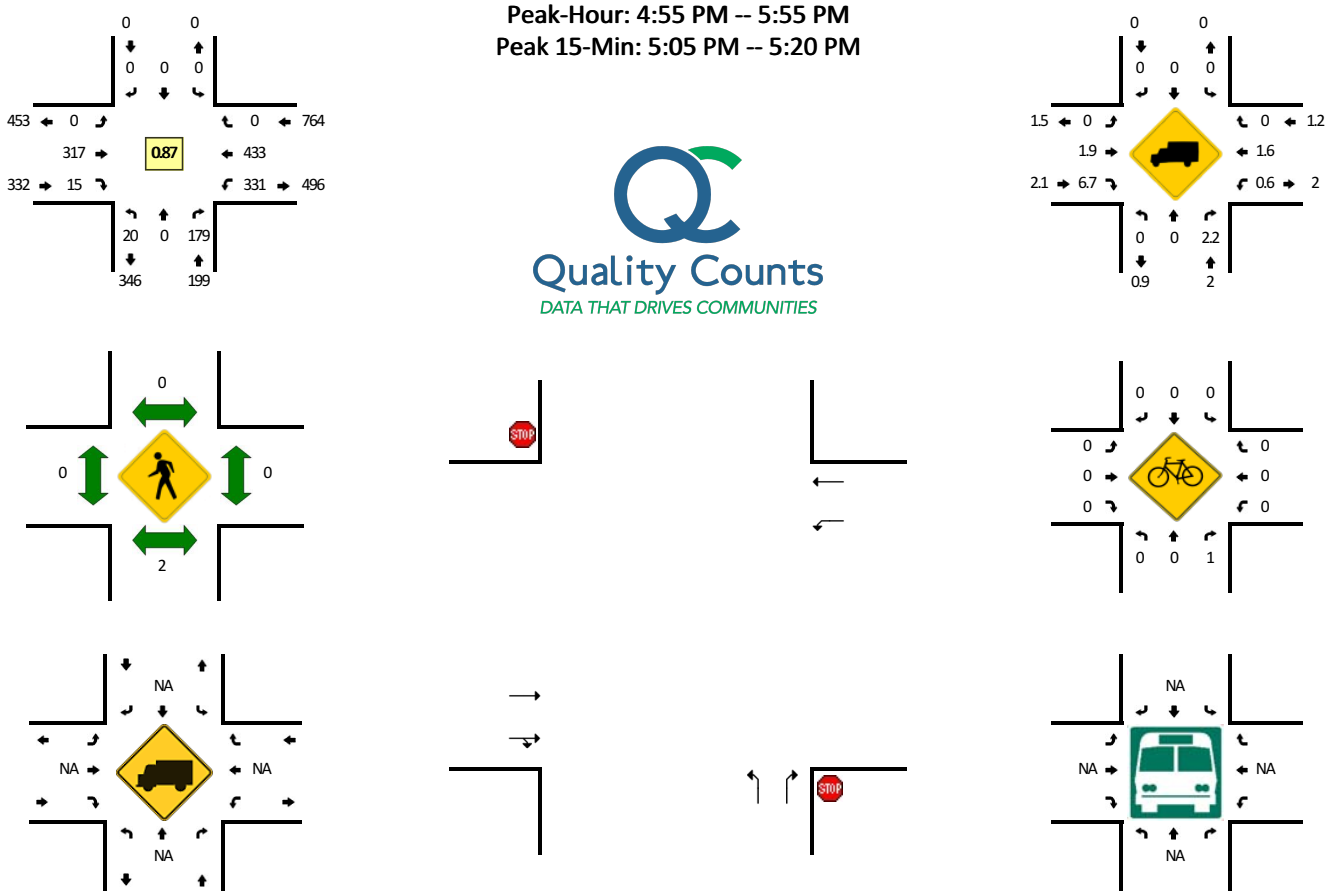
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: S Central Point Rd -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14906904
DATE: Tue, Mar 5 2019

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM



Quality Counts
DATA THAT DRIVES COMMUNITIES

5-Min Count Period Beginning At	S Central Point Rd (Northbound)				S Central Point Rd (Southbound)				Warner Parrott Rd (Eastbound)				Warner Parrott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	15	0	0	0	0	0	0	26	0	0	22	33	0	0	98	
4:05 PM	0	0	20	0	0	0	0	0	0	33	3	0	21	38	0	0	115	
4:10 PM	1	0	11	0	0	0	0	0	0	23	3	0	25	27	0	0	90	
4:15 PM	1	0	13	0	0	0	0	0	0	21	2	0	29	22	0	0	88	
4:20 PM	4	0	13	0	0	0	0	0	0	31	3	0	22	35	0	0	108	
4:25 PM	3	0	20	0	0	0	0	0	0	20	1	0	19	21	0	0	84	
4:30 PM	1	0	14	0	0	0	0	0	0	22	2	0	23	37	0	0	99	
4:35 PM	0	0	15	0	0	0	0	0	0	27	1	0	34	39	0	0	116	
4:40 PM	2	0	14	0	0	0	0	0	0	21	4	0	26	26	0	0	93	
4:45 PM	2	0	20	0	0	0	0	0	0	16	4	0	25	30	0	0	97	
4:50 PM	1	0	4	0	0	0	0	0	0	23	4	0	28	33	0	0	93	
4:55 PM	2	0	11	0	0	0	0	0	0	34	2	0	17	29	0	0	95	1176
5:00 PM	3	0	17	0	0	0	0	0	0	24	1	0	29	29	0	0	103	1181
5:05 PM	1	0	21	0	0	0	0	0	0	31	0	0	37	48	0	0	138	1204
5:10 PM	1	0	9	0	0	0	0	0	0	23	1	0	38	45	0	0	117	1231
5:15 PM	2	0	17	0	0	0	0	0	0	23	0	0	31	43	0	0	116	1259
5:20 PM	0	0	14	0	0	0	0	0	0	20	0	0	20	40	0	0	94	1245
5:25 PM	2	0	13	0	0	0	0	0	0	22	1	0	25	23	0	0	86	1247
5:30 PM	2	0	21	0	0	0	0	0	0	25	2	0	38	33	0	0	121	1269
5:35 PM	1	0	15	0	0	0	0	0	0	26	1	0	27	38	0	0	108	1261
5:40 PM	1	0	9	0	0	0	0	0	0	23	2	0	27	37	0	0	99	1267
5:45 PM	2	0	18	0	0	0	0	0	0	37	4	0	28	30	0	0	119	1289
5:50 PM	3	0	14	0	0	0	0	0	0	29	1	0	14	38	0	0	99	1295
5:55 PM	1	0	10	0	0	0	0	0	0	19	1	0	23	29	0	0	83	1283

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	188	0	0	0	0	0	0	308	4	0	424	544	0	0	1484
Heavy Trucks	0	0	4		0	0	0		0	8	0		4	8	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	1		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/28/2019 2:32 PM

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

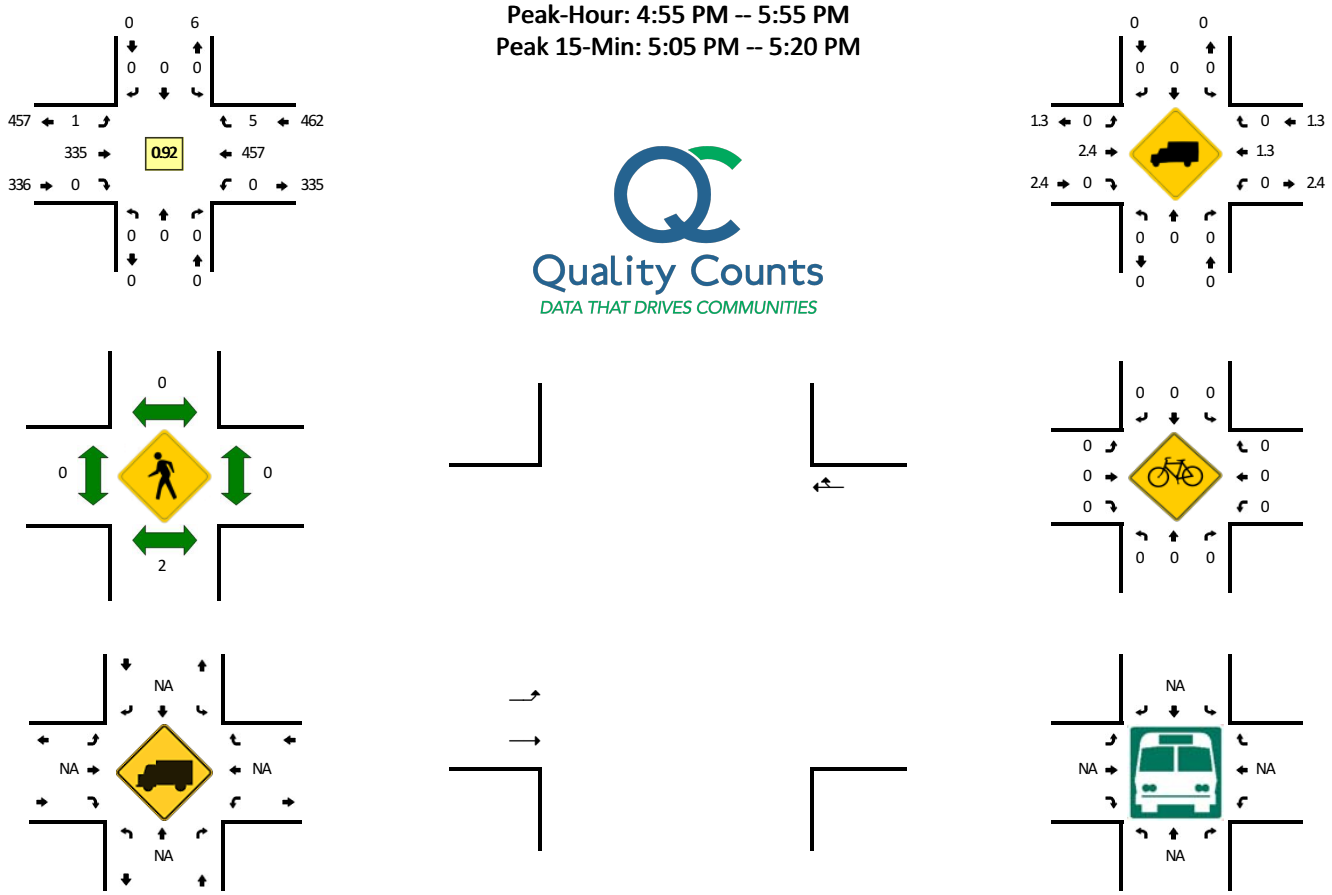
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Site East Dwy -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14906910
DATE: Tue, Mar 5 2019

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM



5-Min Count Period Beginning At	Site East Dwy (Northbound)				Site East Dwy (Southbound)				Warner Parrott Rd (Eastbound)				Warner Parrott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	30	0	0	0	33	0	0	63	
4:05 PM	0	0	0	0	0	0	0	0	0	33	0	0	0	38	0	0	71	
4:10 PM	0	0	0	0	0	0	0	0	0	27	0	0	0	30	0	0	57	
4:15 PM	0	0	0	0	0	0	0	0	0	31	0	0	0	26	0	0	57	
4:20 PM	0	0	0	0	0	0	0	0	0	27	0	0	0	38	0	0	65	
4:25 PM	0	0	0	0	0	0	0	0	0	25	0	0	0	26	0	0	51	
4:30 PM	0	0	0	0	0	0	0	0	1	20	0	0	0	42	0	0	63	
4:35 PM	0	0	0	0	0	0	0	0	0	29	0	0	0	34	1	0	64	
4:40 PM	0	0	0	0	0	0	0	0	0	24	0	0	0	33	1	0	58	
4:45 PM	0	0	0	0	0	0	0	0	0	20	0	0	0	31	0	0	51	
4:50 PM	0	0	0	0	0	0	0	0	0	30	0	0	0	34	0	0	64	
4:55 PM	0	0	0	0	0	0	0	0	0	32	0	0	0	32	0	0	64	728
5:00 PM	0	0	0	0	0	0	0	0	0	31	0	0	0	31	0	0	62	727
5:05 PM	0	0	0	0	0	0	0	0	0	29	0	0	0	49	0	0	78	734
5:10 PM	0	0	0	0	0	0	0	0	0	24	0	0	0	47	0	0	71	748
5:15 PM	0	0	0	0	0	0	0	0	0	24	0	0	0	44	0	0	68	759
5:20 PM	0	0	0	0	0	0	0	0	0	19	0	0	0	42	1	0	62	756
5:25 PM	0	0	0	0	0	0	0	0	0	23	0	0	0	25	0	0	48	753
5:30 PM	0	0	0	0	0	0	0	0	1	26	0	0	0	39	0	0	66	756
5:35 PM	0	0	0	0	0	0	0	0	0	29	0	0	0	43	0	0	72	764
5:40 PM	0	0	0	0	0	0	0	0	0	29	0	0	0	36	0	0	65	771
5:45 PM	0	0	0	0	0	0	0	0	0	35	0	0	0	31	2	0	68	788
5:50 PM	0	0	0	0	0	0	0	0	0	34	0	0	0	38	2	0	74	798
5:55 PM	0	0	0	0	0	0	0	0	0	20	0	0	0	26	5	0	51	785

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	308	0	0	0	560	0	0	868
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Just need in/out turn movements here (it may be one way)?

Report generated on 3/28/2019 2:32 PM

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

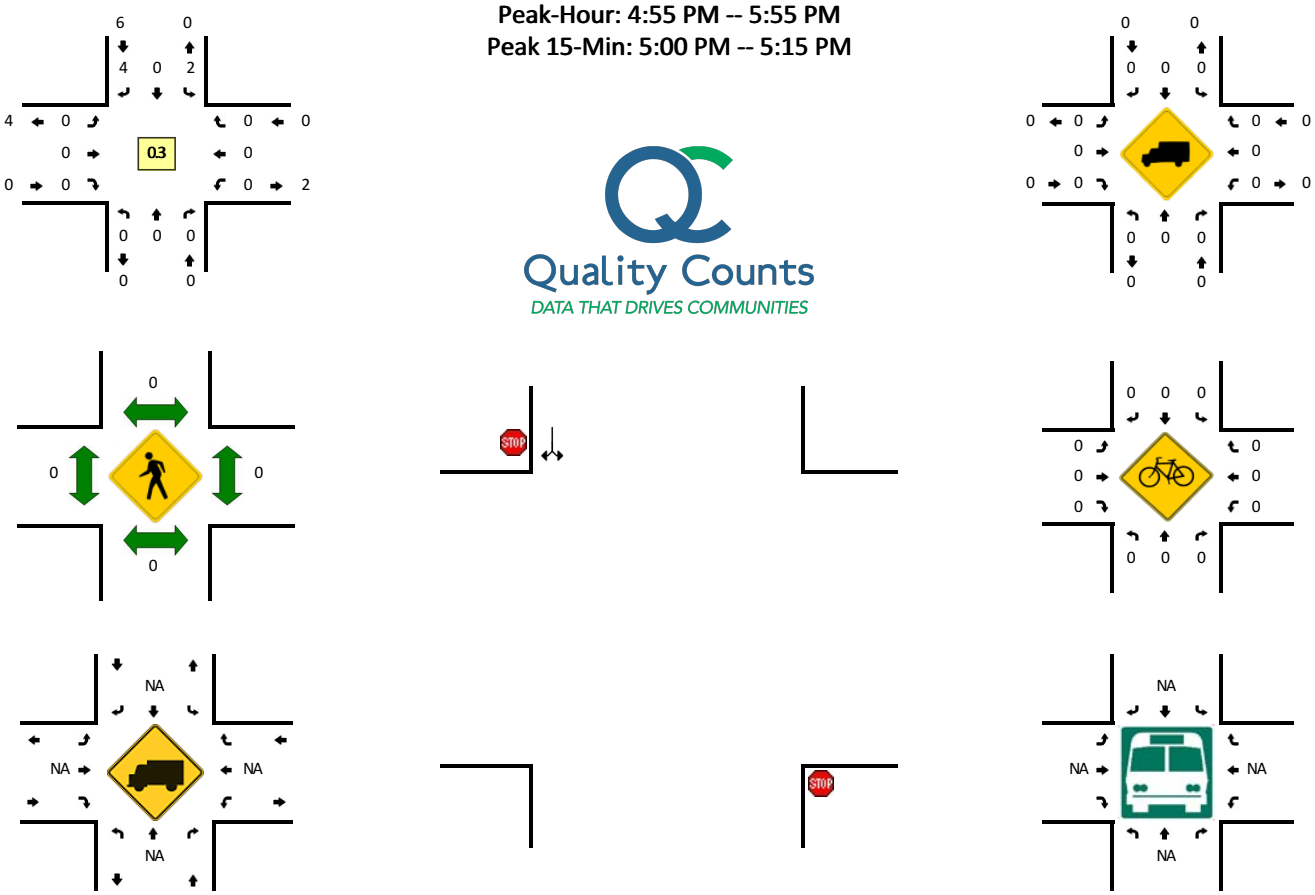
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Site West Dwy -- Warner Parrott Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14906912
DATE: Tue, Mar 5 2019

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:00 PM -- 5:15 PM


6 0
4 0 2
4 0
0 0
0 0
0

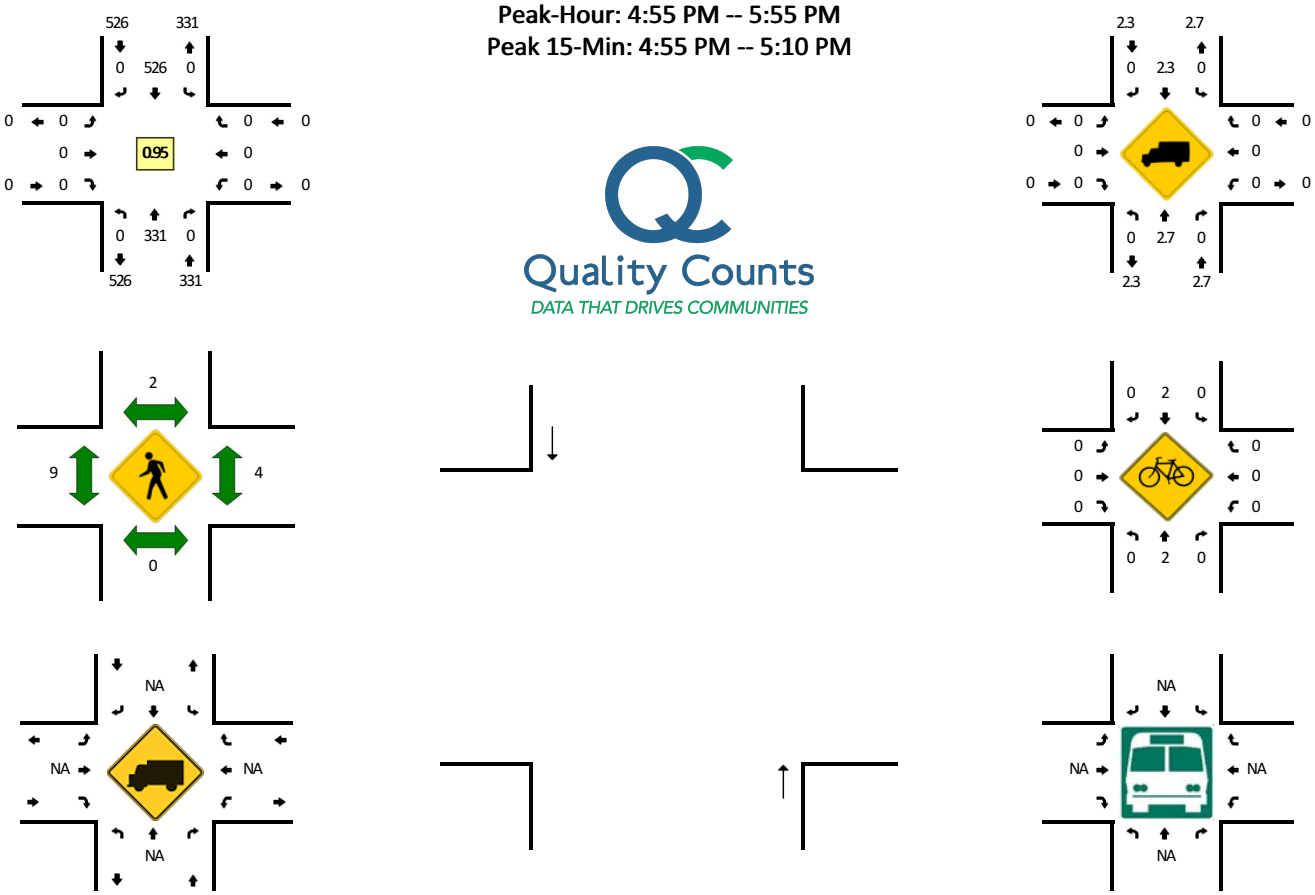
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Linn Ave -- Midblock Pedestrian Crossing
CITY/STATE: Oregon City, OR

QC JOB #: 14906918
DATE: Tue, Mar 5 2019

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



5-Min Count Period Beginning At	Linn Ave (Northbound)				Linn Ave (Southbound)				Midblock Pedestrian Crossing (Eastbound)				Midblock Pedestrian Crossing (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	19	0	0	0	38	0	0	0	0	0	0	0	0	0	0	57	
4:05 PM	0	43	0	0	0	40	0	0	0	0	0	0	0	0	0	0	83	
4:10 PM	0	39	0	0	0	46	0	0	0	0	0	0	0	0	0	0	85	
4:15 PM	0	20	0	0	0	56	0	0	0	0	0	0	0	0	0	0	76	
4:20 PM	0	34	0	0	0	36	0	0	0	0	0	0	0	0	0	0	70	
4:25 PM	0	28	0	0	0	49	0	0	0	0	0	0	0	0	0	0	77	
4:30 PM	0	29	0	0	0	32	0	0	0	0	0	0	0	0	0	0	61	
4:35 PM	0	40	0	0	0	36	0	0	0	0	0	0	0	0	0	0	76	
4:40 PM	0	25	0	0	0	46	0	0	0	0	0	0	0	0	0	0	71	
4:45 PM	0	33	0	0	0	43	0	0	0	0	0	0	0	0	0	0	76	
4:50 PM	0	31	0	0	0	51	0	0	0	0	0	0	0	0	0	0	82	
4:55 PM	0	29	0	0	0	45	0	0	0	0	0	0	0	0	0	0	74	888
5:00 PM	0	29	0	0	0	42	0	0	0	0	0	0	0	0	0	0	71	902
5:05 PM	0	21	0	0	0	60	0	0	0	0	0	0	0	0	0	0	81	900
5:10 PM	0	24	0	0	0	47	0	0	0	0	0	0	0	0	0	0	71	886
5:15 PM	0	32	0	0	0	40	0	0	0	0	0	0	0	0	0	0	72	882
5:20 PM	0	21	0	0	0	51	0	0	0	0	0	0	0	0	0	0	72	884
5:25 PM	0	22	0	0	0	47	0	0	0	0	0	0	0	0	0	0	69	876
5:30 PM	0	36	0	0	0	25	0	0	0	0	0	0	0	0	0	0	61	876
5:35 PM	0	28	0	0	0	45	0	0	0	0	0	0	0	0	0	0	73	873
5:40 PM	0	30	0	0	0	39	0	0	0	0	0	0	0	0	0	0	69	871
5:45 PM	0	33	0	0	0	41	0	0	0	0	0	0	0	0	0	0	74	869
5:50 PM	0	26	0	0	0	44	0	0	0	0	0	0	0	0	0	0	70	857
5:55 PM	0	34	0	0	0	42	0	0	0	0	0	0	0	0	0	0	76	859

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	316	0	0	0	588	0	0	0	0	0	0	0	0	0	0	904
Heavy Trucks	0	12	0		0	12	0		0	0	0		0	0	0		24
Pedestrians		0				4				12				4			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/28/2019 2:32 PM

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

Appendix B. Existing Traffic Conditions Worksheets

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		⋔	
Traffic Vol, veh/h	0	356	189	0	21	23
Future Vol, veh/h	0	356	189	0	21	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	2	5	0	0	0
Mvmt Flow	0	387	205	0	23	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	592	205
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	472	841
Stage 1	0	-	-	0	834	-
Stage 2	0	-	-	0	691	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	472	841
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	676
HCM Lane V/C Ratio	-	-	0.071
HCM Control Delay (s)	-	-	10.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	352	189	40	0	0
Future Volume (Veh/h)	25	352	189	40	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	383	205	43	0	0
Pedestrians					1	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			461			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	249				664	228
vC1, stage 1 conf vol					228	
vC2, stage 2 conf vol					437	
vCu, unblocked vol	199				631	177
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1332				592	838

Direction, Lane #	EB 1	WB 1
Volume Total	410	248
Volume Left	27	0
Volume Right	0	43
cSH	1332	1700
Volume to Capacity	0.02	0.15
Queue Length 95th (ft)	2	0
Control Delay (s)	0.7	0.0
Lane LOS	A	
Approach Delay (s)	0.7	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	344	8	125	207	22	202
Future Vol, veh/h	344	8	125	207	22	202
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	140	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	0	5	4	9	4
Mvmt Flow	366	9	133	220	23	215

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	377	0	859	191
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	486	-
Critical Hdwy	-	-	4.175	-	6.735	6.96
Critical Hdwy Stg 1	-	-	-	-	5.935	-
Critical Hdwy Stg 2	-	-	-	-	5.535	-
Follow-up Hdwy	-	-	2.2475	-	3.5855	3.338
Pot Cap-1 Maneuver	-	-	1161	-	300	813
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1159	-	265	811
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	265	811	-	-	1159	-
HCM Lane V/C Ratio	0.088	0.265	-	-	0.115	-
HCM Control Delay (s)	19.9	11	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	1.1	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	381	43	39	193	89	66	365	76	116	139	73
Future Volume (vph)	122	381	43	39	193	89	66	365	76	116	139	73
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		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		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1822		1641	3231		1703	1754		1736	1676	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1822		1641	3231		1703	1754		1736	1676	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	401	45	41	203	94	69	384	80	122	146	77
RTOR Reduction (vph)	0	3	0	0	45	0	0	5	0	0	13	0
Lane Group Flow (vph)	128	443	0	41	252	0	69	459	0	122	210	0
Confl. Peds. (#/hr)	3		10	10		3	4		16	16		4
Heavy Vehicles (%)	4%	2%	5%	10%	4%	9%	6%	5%	3%	4%	9%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	11.8	29.4		4.6	22.2		7.4	32.0		11.5	36.1	
Effective Green, g (s)	11.8	29.4		4.6	22.2		7.4	32.0		11.5	36.1	
Actuated g/C Ratio	0.12	0.31		0.05	0.23		0.08	0.34		0.12	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	2.3	2.5		2.3	2.5		2.3	2.5		2.3	2.5	
Lane Grp Cap (vph)	215	563		79	755		132	590		210	636	
v/s Ratio Prot	c0.07	c0.24		0.02	0.08		0.04	c0.26		c0.07	0.13	
v/s Ratio Perm												
v/c Ratio	0.60	0.79		0.52	0.33		0.52	0.78		0.58	0.33	
Uniform Delay, d1	39.3	29.9		44.1	30.3		42.1	28.3		39.5	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	6.9		3.5	0.2		2.4	6.1		3.1	0.2	
Delay (s)	42.7	36.9		47.6	30.4		44.5	34.4		42.5	21.1	
Level of Service	D	D		D	C		D	C		D	C	
Approach Delay (s)		38.2			32.5			35.7			28.7	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		⋔	
Traffic Vol, veh/h	0	334	457	0	2	4
Future Vol, veh/h	0	334	457	0	2	4
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	92	92	92	92	92	92
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	0	363	497	0	2	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	860	497
Stage 1	-	-	-	-	497	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	329	577
Stage 1	0	-	-	0	615	-
Stage 2	0	-	-	0	708	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	329	577
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	708	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	527
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	11.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	335	457	5	0	0
Future Volume (Veh/h)	1	335	457	5	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	364	497	5	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			461			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	504				868	502
vC1, stage 1 conf vol					502	
vC2, stage 2 conf vol					366	
vCu, unblocked vol	292				733	289
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1056				536	622

Direction, Lane #	EB 1	WB 1
Volume Total	365	502
Volume Left	1	0
Volume Right	0	5
cSH	1056	1700
Volume to Capacity	0.00	0.30
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	15	331	442	20	179
Future Vol, veh/h	320	15	331	442	20	179
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	-	140	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	7	1	2	0	2
Mvmt Flow	368	17	380	508	23	206

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	385	0	1645	193
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	1268	-
Critical Hdwy	-	-	4.115	-	6.6	6.93
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2095	-	3.5	3.319
Pot Cap-1 Maneuver	-	-	1178	-	101	817
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	267	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1178	-	68	817
Mov Cap-2 Maneuver	-	-	-	-	68	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	267	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	68	817	-	-	1178	-
HCM Lane V/C Ratio	0.338	0.252	-	-	0.323	-
HCM Control Delay (s)	82.9	10.9	-	-	9.5	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	1	-	-	1.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	366	62	146	612	133	72	144	73	117	333	89
Future Volume (vph)	71	366	62	146	612	133	72	144	73	117	333	89
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1814		1752	3434		1752	1776		1752	1795	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1814		1752	3434		1752	1776		1752	1795	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	78	402	68	160	673	146	79	158	80	129	366	98
RTOR Reduction (vph)	0	5	0	0	12	0	0	14	0	0	7	0
Lane Group Flow (vph)	78	465	0	160	807	0	79	224	0	129	457	0
Confl. Peds. (#/hr)	7					7	1		4	4		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	2%	3%	3%	1%	5%	3%	1%	0%	3%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	7.6	32.9		14.0	39.3		7.8	24.1		12.4	28.7	
Effective Green, g (s)	7.6	32.9		14.0	39.3		7.8	24.1		12.4	28.7	
Actuated g/C Ratio	0.08	0.33		0.14	0.39		0.08	0.24		0.12	0.28	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	2.3	2.5		2.3	2.5		2.3	2.5		2.3	2.5	
Lane Grp Cap (vph)	134	591		243	1337		135	424		215	510	
v/s Ratio Prot	0.04	c0.26		c0.09	0.23		0.05	0.13		c0.07	c0.25	
v/s Ratio Perm												
v/c Ratio	0.58	0.79		0.66	0.60		0.59	0.53		0.60	0.90	
Uniform Delay, d1	45.1	30.8		41.2	24.6		45.0	33.4		41.9	34.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	6.6		5.3	0.7		4.8	0.9		3.4	18.0	
Delay (s)	49.9	37.4		46.5	25.2		49.8	34.3		45.3	52.7	
Level of Service	D	D		D	C		D	C		D	D	
Approach Delay (s)		39.2			28.7			38.2			51.1	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	17.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Appendix C. Crash Data

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

Intersection of Warner-Parrot Rd & Central Point Rd, Oregon City, 2012-2016

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	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2016 TOTAL	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR: 2015														
BACKING	0	0	1	1	0	0	0	1	0	1	0	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	1	0	1	0	0
2015 TOTAL	0	1	2	3	0	1	0	2	1	2	1	3	0	0
YEAR: 2014														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	1
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2014 TOTAL	0	1	1	2	0	1	0	2	0	1	1	2	0	1
YEAR: 2013														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2013 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	4	5	9	0	4	0	7	2	7	2	9	0	1

Disclaimers: *Effective 2016,* ***collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants.*** *Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.*

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CITY STREET LOCATIONS BY COUNTY - DRIVER BEHAVIOR FORMAT

Intersection of Warner-Parrot Rd & Central Point Rd, Oregon City, 2012-2016

CLACKAMAS COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL EVENT	CAUSE	ERROR	SURF	TOTVEH	VEHICLE TYP/OWN #1	#2	PEOPLE KIL	INJ	ALC	SPED
00149	01/12/2015	11A	MO	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	BACK	10	011	DRY	2	011	011	0	0	N	N
02233	06/11/2014	4P	WE	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	REAR	29	026	DRY	2	011	011	0	1	N	N
05468	12/18/2015	4P	FR	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	REAR	29	026	WET	2	011	011	0	0	N	N
02627	06/10/2016	6P	FR	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	REAR	29		WET	2	010	010	0	0	N	N
03639	10/01/2012	3P	MO	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	TURN 110	02	027,008	DRY	1	011		0	1	N	N
03616	09/25/2013	4P	WE	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	TURN	02	028	DRY	2	011	011	0	0	N	N
00842	03/07/2015	11A	SA	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	TURN	02	028	DRY	2	011	011	0	1	N	N
04972	10/26/2016	8A	WE	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	TURN	29	028,004	DRY	2	011	011	0	1	N	N
01895	05/17/2014	3A	SA	Oregon City	CENTRAL POINT RD AT WARNER-PARROTT RD	FIX 040	03,32	021,052,081	DRY	1	011		0	0	N	N

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

Intersection of Warner-Parrot Rd--Warner-Milne Rd and Linn Ave-Leland Rd, Oregon City, 2012-2016

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	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
REAR-END	0	1	3	4	0	1	0	3	1	3	1	4	0	0
SIDESWIPE - OVERTAKING	0	1	0	1	0	2	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	3	0	1	1	2	0	2	0	0
2016 TOTAL	0	3	4	7	0	6	0	5	2	6	1	7	0	0
YEAR: 2015														
REAR-END	0	1	1	2	0	1	0	1	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	3	0	1	0	1	0	1	0	0
2015 TOTAL	0	2	1	3	0	4	0	2	0	3	0	3	0	0
YEAR: 2014														
REAR-END	0	1	0	1	0	2	0	0	1	0	1	1	0	0
2014 TOTAL	0	1	0	1	0	2	0	0	1	0	1	1	0	0
YEAR: 2013														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
PEDESTRIAN	0	1	0	1	0	1	0	0	1	0	1	1	0	0
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2013 TOTAL	0	1	2	3	0	1	0	2	1	2	1	3	0	0
YEAR: 2012														
ANGLE	0	1	0	1	0	2	0	0	1	0	1	1	0	0
2012 TOTAL	0	1	0	1	0	2	0	0	1	0	1	1	0	0
FINAL TOTAL	0	8	7	15	0	15	0	9	5	11	4	15	0	0

Disclaimers: *Effective 2016,* ***collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants.*** *Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.*

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CITY STREET LOCATIONS BY COUNTY - DRIVER BEHAVIOR FORMAT

Intersection of Warner-Parrot Rd--Warner-Milne Rd and Linn Ave-Leland Rd, Oregon City, 2012-2016

CLACKAMAS COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL EVENT	CAUSE	ERROR	SURF	TOTVEH	VEHICLE TYP/OWN #1	VEHICLE TYP/OWN #2	PEOPLE KIL	PEOPLE INJ	PEOPLE ALC	PEOPLE SPED
03835	10/15/2012	5P	MO	Oregon City	LELAND RD AT WARNER-MILNE RD	ANGL	04	020	WET	2	011	011	0	2	N	N
02086	06/12/2013	7A	WE	Oregon City	LELAND RD AT WARNER-MILNE RD	REAR	07	026	DRY	2	011	011	0	0	N	N
02245	06/09/2015	8A	TU	Oregon City	LELAND RD AT WARNER-MILNE RD	REAR 004	29	026	DRY	2	011	011	0	1	N	N
00604	02/05/2016	6A	FR	Oregon City	LELAND RD AT WARNER-MILNE RD	REAR	29		DRY	2	010	010	0	0	N	N
04567	10/04/2016	2P	TU	Oregon City	LELAND RD AT WARNER-MILNE RD	REAR	29	026	WET	2	011	011	0	1	N	N
04126	09/08/2016	3P	TH	Oregon City	LELAND RD AT WARNER-MILNE RD	SS-O	13	045	DRY	2	011	011	0	2	N	N
04311	09/19/2016	3P	MO	Oregon City	LELAND RD AT WARNER-MILNE RD	TURN	04	020,004	DRY	2	011	011	0	3	N	N
00720	03/02/2013	8P	SA	Oregon City	LELAND RD AT WARNER-PARROTT RD	PED	02	029	WET	1	011		0	1	N	N
04120	10/26/2013	5P	SA	Oregon City	LELAND RD AT WARNER-PARROTT RD	ANGL	04	020	DRY	2	011	011	0	0	N	N
02493	06/22/2015	5P	MO	Oregon City	LINN AVE AT WARNER-MILNE RD	REAR	29	026	UNK	2	011	011	0	0	N	N
00627	02/07/2016	3P	SU	Oregon City	LINN AVE AT WARNER-MILNE RD	REAR	29		DRY	2	010	010	0	0	N	N
02234	05/17/2016	5P	TU	Oregon City	LINN AVE AT WARNER-MILNE RD	REAR	29		DRY	2	010	010	0	0	N	N
05662	12/27/2015	11A	SU	Oregon City	LINN AVE AT WARNER-MILNE RD	TURN	02	028,004	DRY	2	011	011	0	3	N	N
00052	01/03/2016	11A	SU	Oregon City	LINN AVE AT WARNER-MILNE RD	TURN 124	08		ICE	2	990	010	0	0	N	N
05110	12/17/2014	5P	WE	Oregon City	LINN AVE AT WARNER-PARROTT RD	REAR 013	29	026	WET	3	011	011	0	2	N	N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
00	PDO	Not collected for PDO Crashes
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description	Code Termination Date
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level	
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)	
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way	
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher	
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal	
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling	
06	IMP-OVER	IMPROPER PASSING	Improper overtaking	
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely	
08	IMP-TURN	IMPROPER TURN	Made improper turn	
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved	12/31/2002
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving	
11	MECH-DEF	MECH DEFECT	Mechanical defect	
12	OTHER	OTHER	Other (not improper driving)	
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes	
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device	
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road	
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy	
17	ILLNESS	PHYSICAL ILLNESS	Physical illness	
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway	
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing	
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked	
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism	
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes	
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted	
25	TIREFAIL	TIRE FAILURE	Tire Failure	
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle	
27	INATTENT	INATTENTION	Inattention	
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention	
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead	
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed	
31	RACING	SPEED RACING	Speed Racing (per PAR)	
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)	
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)	
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)	
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)	
40	VIEW OBS	VIEW OBSCURED	View obscured	
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder	
51	FAIL LN	F MAINT LANE	Failed to maintain lane	12/31/2015
52	OFF RD	RAN OFF RD	Ran off road	12/31/2015

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	LTRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	LTRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes

ERR CODES

Code	Short Description	Medium Description	Long Description
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELSS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.

EVENT CODES

Code	Short Description	Medium Description	Long Description
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location

EVENT CODES

Code	Short Description	Medium Description	Long Description
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)

Appendix D. Background Traffic Conditions Worksheets

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		⋔	
Traffic Vol, veh/h	0	363	193	0	21	23
Future Vol, veh/h	0	363	193	0	21	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	2	5	0	0	0
Mvmt Flow	0	395	210	0	23	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	605	210
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	464	835
Stage 1	0	-	-	0	830	-
Stage 2	0	-	-	0	685	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	464	835
Mov Cap-2 Maneuver	-	-	-	-	549	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	669
HCM Lane V/C Ratio	-	-	0.071
HCM Control Delay (s)	-	-	10.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	359	193	40	0	0
Future Volume (Veh/h)	25	359	193	40	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	390	210	43	0	0
Pedestrians					1	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			461			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	254				676	232
vC1, stage 1 conf vol					232	
vC2, stage 2 conf vol					444	
vCu, unblocked vol	202				642	179
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1327				587	834

Direction, Lane #	EB 1	WB 1
Volume Total	417	253
Volume Left	27	0
Volume Right	0	43
cSH	1327	1700
Volume to Capacity	0.02	0.15
Queue Length 95th (ft)	2	0
Control Delay (s)	0.7	0.0
Lane LOS	A	
Approach Delay (s)	0.7	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	351	8	128	211	22	206
Future Vol, veh/h	351	8	128	211	22	206
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	140	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	0	5	4	9	4
Mvmt Flow	373	9	136	224	23	219

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	384	0	876	194
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	-	-	4.175	-	6.735	6.96
Critical Hdwy Stg 1	-	-	-	-	5.935	-
Critical Hdwy Stg 2	-	-	-	-	5.535	-
Follow-up Hdwy	-	-	2.2475	-	3.5855	3.338
Pot Cap-1 Maneuver	-	-	1154	-	292	810
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1152	-	257	808
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	257	808	-	-	1152	-
HCM Lane V/C Ratio	0.091	0.271	-	-	0.118	-
HCM Control Delay (s)	20.4	11.1	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	1.1	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	389	44	40	197	91	67	372	78	118	142	74
Future Volume (vph)	124	389	44	40	197	91	67	372	78	118	142	74
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		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		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1822		1641	3231		1703	1754		1736	1676	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1822		1641	3231		1703	1754		1736	1676	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	131	409	46	42	207	96	71	392	82	124	149	78
RTOR Reduction (vph)	0	3	0	0	45	0	0	5	0	0	12	0
Lane Group Flow (vph)	131	452	0	42	258	0	71	469	0	124	215	0
Confl. Peds. (#/hr)	3		10	10		3	4		16	16		4
Heavy Vehicles (%)	4%	2%	5%	10%	4%	9%	6%	5%	3%	4%	9%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	12.0	29.9		4.7	22.6		7.4	31.9		11.7	36.2	
Effective Green, g (s)	12.0	29.9		4.7	22.6		7.4	31.9		11.7	36.2	
Actuated g/C Ratio	0.13	0.31		0.05	0.24		0.08	0.33		0.12	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	2.3	2.5		2.3	2.5		2.3	2.5		2.3	2.5	
Lane Grp Cap (vph)	217	569		80	763		131	584		212	633	
v/s Ratio Prot	c0.08	c0.25		0.03	0.08		0.04	c0.27		c0.07	0.13	
v/s Ratio Perm												
v/c Ratio	0.60	0.79		0.53	0.34		0.54	0.80		0.58	0.34	
Uniform Delay, d1	39.6	30.1		44.4	30.3		42.5	29.0		39.7	21.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	7.3		3.9	0.2		3.1	7.6		3.1	0.2	
Delay (s)	43.3	37.4		48.4	30.5		45.6	36.6		42.8	21.5	
Level of Service	D	D		D	C		D	D		D	C	
Approach Delay (s)		38.7			32.7			37.8			29.0	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	17.5
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		⋔	
Traffic Vol, veh/h	0	341	466	0	2	4
Future Vol, veh/h	0	341	466	0	2	4
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	92	92	92	92	92	92
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	0	371	507	0	2	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	878	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	371	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	321	570
Stage 1	0	-	-	0	609	-
Stage 2	0	-	-	0	702	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	321	570
Mov Cap-2 Maneuver	-	-	-	-	443	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	520
HCM Lane V/C Ratio	-	-	0.013
HCM Control Delay (s)	-	-	12
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	342	466	5	0	0
Future Volume (Veh/h)	1	342	466	5	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	372	507	5	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			461			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	514				886	512
vC1, stage 1 conf vol					512	
vC2, stage 2 conf vol					374	
vCu, unblocked vol	297				750	294
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1046				529	615

Direction, Lane #	EB 1	WB 1
Volume Total	373	512
Volume Left	1	0
Volume Right	0	5
cSH	1046	1700
Volume to Capacity	0.00	0.30
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	326	15	338	451	20	183
Future Vol, veh/h	326	15	338	451	20	183
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	-	140	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	7	1	2	0	2
Mvmt Flow	375	17	389	518	23	210

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	392	0	1680	196
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	1296	-
Critical Hdwy	-	-	4.115	-	6.6	6.93
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2095	-	3.5	3.319
Pot Cap-1 Maneuver	-	-	1171	-	96	813
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	259	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1171	-	64	813
Mov Cap-2 Maneuver	-	-	-	-	64	-
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	259	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	64	813	-	-	1171	-
HCM Lane V/C Ratio	0.359	0.259	-	-	0.332	-
HCM Control Delay (s)	89.9	11	-	-	9.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	1	-	-	1.5	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	373	63	149	624	136	73	147	74	119	340	91
Future Volume (vph)	72	373	63	149	624	136	73	147	74	119	340	91
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1814		1752	3434		1752	1777		1752	1795	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1814		1752	3434		1752	1777		1752	1795	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	79	410	69	164	686	149	80	162	81	131	374	100
RTOR Reduction (vph)	0	5	0	0	12	0	0	14	0	0	7	0
Lane Group Flow (vph)	79	474	0	164	823	0	80	229	0	131	467	0
Confl. Peds. (#/hr)	7					7	1		4	4		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	2%	3%	3%	1%	5%	3%	1%	0%	3%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	7.8	33.7		14.2	40.1		7.9	24.6		12.6	29.3	
Effective Green, g (s)	7.8	33.7		14.2	40.1		7.9	24.6		12.6	29.3	
Actuated g/C Ratio	0.08	0.33		0.14	0.39		0.08	0.24		0.12	0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	2.3	2.5		2.3	2.5		2.3	2.5		2.3	2.5	
Lane Grp Cap (vph)	135	595		242	1342		134	426		215	512	
v/s Ratio Prot	0.04	c0.26		c0.09	0.24		0.05	0.13		c0.07	c0.26	
v/s Ratio Perm												
v/c Ratio	0.59	0.80		0.68	0.61		0.60	0.54		0.61	0.91	
Uniform Delay, d1	45.8	31.3		42.0	25.0		45.8	34.0		42.7	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	7.1		6.3	0.7		5.4	1.0		3.8	20.5	
Delay (s)	50.6	38.4		48.3	25.8		51.2	35.1		46.4	55.9	
Level of Service	D	D		D	C		D	D		D	E	
Approach Delay (s)		40.2			29.5			39.1			53.9	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	17.5
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix E. Total Traffic Conditions Worksheets

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	364	217	39	34	9
Future Vol, veh/h	10	364	217	39	34	9
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	5	0	0	0
Mvmt Flow	11	396	236	42	37	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	278	0	-	0	675	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1296	-	-	-	422	787
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	669	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1296	-	-	-	417	787
Mov Cap-2 Maneuver	-	-	-	-	577	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1296	-	-	-	611
HCM Lane V/C Ratio	0.008	-	-	-	0.076
HCM Control Delay (s)	7.8	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	373	233	40	21	23
Future Vol, veh/h	25	373	233	40	21	23
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	5	0	0	0
Mvmt Flow	27	405	253	43	23	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	297	0	-	0	735	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	459	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1276	-	-	-	390	768
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1275	-	-	-	379	767
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	640	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1275	-	-	-	638
HCM Lane V/C Ratio	0.021	-	-	-	0.075
HCM Control Delay (s)	7.9	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	382	12	129	246	27	207
Future Vol, veh/h	382	12	129	246	27	207
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	140	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	0	5	4	9	4
Mvmt Flow	406	13	137	262	29	220

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	421	0	951	213
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	-	-	4.175	-	6.735	6.96
Critical Hdwy Stg 1	-	-	-	-	5.935	-
Critical Hdwy Stg 2	-	-	-	-	5.535	-
Follow-up Hdwy	-	-	2.2475	-	3.5855	3.338
Pot Cap-1 Maneuver	-	-	1118	-	262	787
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	568	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1116	-	229	785
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	568	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	785	-	-	1116	-
HCM Lane V/C Ratio	0.125	0.281	-	-	0.123	-
HCM Control Delay (s)	23	11.4	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	1.2	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	402	53	40	212	92	76	373	78	119	143	86
Future Volume (vph)	134	402	53	40	212	92	76	373	78	119	143	86
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		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		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1816		1641	3241		1703	1754		1736	1669	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1816		1641	3241		1703	1754		1736	1669	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	141	423	56	42	223	97	80	393	82	125	151	91
RTOR Reduction (vph)	0	3	0	0	40	0	0	5	0	0	15	0
Lane Group Flow (vph)	141	476	0	42	280	0	80	470	0	125	227	0
Confl. Peds. (#/hr)	3		10	10		3	4		16	16		4
Heavy Vehicles (%)	4%	2%	5%	10%	4%	9%	6%	5%	3%	4%	9%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	12.7	31.9		4.7	23.9		7.9	31.8		11.8	35.7	
Effective Green, g (s)	12.7	31.9		4.7	23.9		7.9	31.8		11.8	35.7	
Actuated g/C Ratio	0.13	0.33		0.05	0.24		0.08	0.33		0.12	0.37	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	2.3	2.5		2.3	2.5		2.3	2.5		2.3	2.5	
Lane Grp Cap (vph)	225	592		78	792		137	570		209	609	
v/s Ratio Prot	c0.08	c0.26		0.03	0.09		0.05	c0.27		c0.07	c0.14	
v/s Ratio Perm												
v/c Ratio	0.63	0.80		0.54	0.35		0.58	0.82		0.60	0.37	
Uniform Delay, d1	40.3	30.0		45.4	30.5		43.3	30.4		40.7	22.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.3	7.6		4.7	0.2		4.7	9.2		3.5	0.3	
Delay (s)	44.6	37.6		50.1	30.7		48.0	39.6		44.2	23.1	
Level of Service	D	D		D	C		D	D		D	C	
Approach Delay (s)		39.2			33.0			40.8			30.3	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	17.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	4	551	343	1
Future Vol, veh/h	1	4	4	551	343	1
Conflicting Peds, #/hr	0	9	5	0	0	5
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	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	6	6	0
Mvmt Flow	1	4	4	586	365	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	965	380	371	0	-	0
Stage 1	371	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	285	671	1199	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	281	662	1193	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	552	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1193	-	521	-	-
HCM Lane V/C Ratio	0.004	-	0.01	-	-
HCM Control Delay (s)	8	0	12	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	342	472	23	65	16
Future Vol, veh/h	5	342	472	23	65	16
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	372	513	25	71	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	538	0	-	0	908	526
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	382	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1040	-	-	-	308	556
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1040	-	-	-	306	556
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1040	-	-	-	508
HCM Lane V/C Ratio	0.005	-	-	-	0.173
HCM Control Delay (s)	8.5	0	-	-	13.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	406	491	5	2	4
Future Vol, veh/h	1	406	491	5	2	4
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	1	441	534	5	2	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	541	0	-	0	982	539
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1038	-	-	-	279	546
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	651	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	278	545
Mov Cap-2 Maneuver	-	-	-	-	477	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	520
HCM Lane V/C Ratio	0.001	-	-	-	0.013
HCM Control Delay (s)	8.5	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	384	23	339	473	23	183
Future Vol, veh/h	384	23	339	473	23	183
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	-	140	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	7	1	2	0	2
Mvmt Flow	441	26	390	544	26	210

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	467	0	1778	234
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	1324	-
Critical Hdwy	-	-	4.115	-	6.6	6.93
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2095	-	3.5	3.319
Pot Cap-1 Maneuver	-	-	1099	-	83	769
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	251	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1099	-	54	769
Mov Cap-2 Maneuver	-	-	-	-	54	-
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	251	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.2	23.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	54	769	-	-	1099	-
HCM Lane V/C Ratio	0.49	0.274	-	-	0.355	-
HCM Control Delay (s)	123.8	11.4	-	-	10.1	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.9	1.1	-	-	1.6	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	398	79	149	632	137	79	147	74	121	342	100
Future Volume (vph)	89	398	79	149	632	137	79	147	74	121	342	100
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1807		1752	3434		1752	1776		1752	1790	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	1807		1752	3434		1752	1776		1752	1790	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	98	437	87	164	695	151	87	162	81	133	376	110
RTOR Reduction (vph)	0	5	0	0	13	0	0	14	0	0	8	0
Lane Group Flow (vph)	98	519	0	164	833	0	87	229	0	133	478	0
Confl. Peds. (#/hr)	7					7	1		4	4		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	2%	3%	3%	1%	5%	3%	1%	0%	3%	2%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	10.6	35.4		14.3	39.1		8.6	26.1		12.8	30.3	
Effective Green, g (s)	10.6	35.4		14.3	39.1		8.6	26.1		12.8	30.3	
Actuated g/C Ratio	0.10	0.33		0.13	0.37		0.08	0.25		0.12	0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	2.3	2.5		2.3	2.5		2.3	2.5		2.3	2.5	
Lane Grp Cap (vph)	178	602		236	1265		142	436		211	511	
v/s Ratio Prot	0.05	c0.29		c0.09	c0.24		0.05	0.13		c0.08	c0.27	
v/s Ratio Perm												
v/c Ratio	0.55	0.86		0.69	0.66		0.61	0.53		0.63	0.94	
Uniform Delay, d1	45.5	33.1		43.8	27.9		47.1	34.6		44.4	37.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	12.0		7.5	1.1		6.1	0.9		4.9	24.6	
Delay (s)	48.1	45.0		51.4	29.1		53.2	35.5		49.3	61.6	
Level of Service	D	D		D	C		D	D		D	E	
Approach Delay (s)		45.5			32.7			40.2			58.9	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	17.5
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	7	2	354	543	1
Future Vol, veh/h	2	7	2	354	543	1
Conflicting Peds, #/hr	0	2	4	0	0	4
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	3	2	0
Mvmt Flow	2	7	2	373	572	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	954	579	577	0	-	0
Stage 1	577	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	289	519	1006	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	516	1002	-	-	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1002	-	438	-	-
HCM Lane V/C Ratio	0.002	-	0.022	-	-
HCM Control Delay (s)	8.6	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-